

**Consumers' knowledge of selected claims associated with
fresh lamb or mutton products**

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**Dissertation
M Consumer Science (General)**

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Co-supervisor: Prof Johann Kirsten**

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**Consumers' knowledge of selected claims associated with
fresh lamb or mutton products**

by

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Co-supervisor: Prof Johann Kirsten**

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**Verbruikers se kennis van geselekteerde aansprake in verband met
vars lams- of skaapvleisprodukte**

deur

Hendrina Johanna Wilken-Jonker

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Mei 2018

DECLARATION

I, Hendrina J. Wilken-Jonker, declare that this dissertation, which I hereby submit for the degree of M Consumer Science (General) at the University of Pretoria, is my own work and has not previously been submitted by me for a degree at this or any other tertiary institution.



Hendrina J. Wilken-Jonker

Date: 8 January 2018

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ABSTRACT

Consumers' knowledge of selected claims associated with fresh lamb or mutton products

by

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Degree: M Consumer Science (General)

In a South African context, a range of consumer studies have been conducted over the past few years to understand the influence of food labels on South African consumers' purchasing behaviour, the specific factors influencing consumers' decision making pertaining to red meat products, and specifically consumers' perceptions about the Karoo region and Karoo Lamb as well as consumers' willingness to pay for this product of origin. Extending these studies, the current study broadens our understanding of consumers' subjective and objective knowledge about production process claims, including grass-fed, free range, antibiotic free, hormone free; and the Karoo Lamb claim of geographic origin, associated with pre-packaged fresh lamb or mutton, of the relationship between the demographic characteristics and the specific knowledge dimensions, of the relationship between subjective and objective knowledge and the importance of specific evaluative criteria, and of the relationship between the knowledge dimensions and willingness to pay more for lamb or mutton with specific characteristics.

The study is quantitative, exploratory and descriptive in nature. A cross-sectional survey design involving a self-administered, online questionnaire was used to collect data from urban consumers, aged 18 years or older, who were the main buyers of pre-packaged fresh lamb or mutton at large food retailers. Consulta Research, a respectable research company, recruited respondents by means of non-random convenience sampling in main urban areas across South Africa, namely Tshwane, Ekurhuleni, Johannesburg, Durban and Cape Town. A total of 355 respondents took part in the study.

The results of this study show that what respondents think they know, i.e. their perception of the nature and extent of their own knowledge, and what they actually know about selected lamb or

mutton production processes are two different things, potentially influencing consumers' search and choice behaviours differently. Knowledge about production process claims therefore manifests in two dimensions: subjective and objective knowledge. Higher levels of subjective knowledge are related to higher importance ratings for free-range lamb, hormone-free lamb, antibiotic-free lamb and Karoo lamb. The higher the subjective knowledge of claims, the higher the importance ratings, implying that the more confident respondents felt about their knowledge of the respective claims, the more important they regarded product label information about the claims. No significant relationships exist between the objective knowledge pertaining to free range, hormone free and antibiotic free and the importance ratings pertaining to free range, hormone free and antibiotic free. The ANOVAs show that consumers' subjective knowledge of production processes varied by demographic characteristics. A higher level of subjective knowledge about the specific claims had a positive impact on consumers' willingness to pay more for lamb/mutton, while objective knowledge was not related to willingness or intention to pay more. The results of the study have implications for the food industry (producers, marketers and retailers), policy makers, governmental agencies and independent consumer protection organisations.

Keywords: subjective knowledge, objective knowledge, production process claims, claims of geographic origin, consumer decision making, pre-packaged fresh lamb or mutton products

OPSOMMING

Verbruikers se kennis van geselekteerde aansprake in verband met vars lams- en skaapvleisprodukte

deur

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Verskeie verbruikerstudies is oor die afgelope paar jaar in die Suid-Afrikaanse konteks gedoen om die rol van voedsel-etikette in verbruikers se aankoopgedrag, die spesifieke faktore wat verbruikers se besluitneming met betrekking tot rooi vleis beïnvloed, en om spesifiek verbruikers se persepsie van die Karoostreek en verbruikers van Karoo-lam se bereidwilligheid om vir die produk van herkoms te betaal, te bepaal. In aansluiting by die studies, verbreed die huidige studie ons begrip van verbruikers se subjektiewe en objektiewe kennis van produksieprosesaansprake, insluitend grasgevoer, vrylopend, antibiotikavry, hormoonvry en die Karoo-lam-aanspraak van geografiese herkoms, wat met vooraf-verpakte vars lams- of skaapvleis geassosieer word, van die verwantskap tussen demografiese eienskappe en die spesifieke kennisdimensies, van die verwantskap tussen subjektiewe en objektiewe kennis en die belangrikheid van spesifieke evalueringkriteria, en van die verwantskap tussen die kennisdimensies en bereidwilligheid om meer vir lams- of skaapvleis met spesifieke kenmerke te betaal.

Die studie is kwantitatief en verkennend-beskrywend van aard. 'n Kruis-seksionele opname met 'n selfgeadministreerde aanlynvraelys is gedoen om data in te samel onder stedelike verbruikers wat 18 jaar of ouer is en vooraf-verpakte vars lams- of skaapvleis by groot voedselhandelaars koop. Consulta Research, 'n gerespekteerde navorsingsmaatskappy, het respondente deur nie-waarskynlikheids-geriefsteekproefneming in drie groot stedelike areas oor Suid-Afrika, naamlik Tshwane, Ekurhuleni en Johannesburg, gewerf. 'n Totaal van 355 respondente het aan die studie deelgeneem.

Die resultate van die studie toon dat dit wat verbruikers dink hulle weet, te wete hulle persepsie van die aard en omvang van hulle eie kennis, en dit wat hulle werklik van geselekteerde lam- of skaap-produksieprosesse weet, twee verskillende aspekte is wat moontlik verbruikers se gedrag kan beïnvloed. Kennis van produksieprosesaansprake manifesteer gevolglik in twee dimensies: subjektiewe en objektiewe kennis. Hoër vlakke van subjektiewe kennis is verwant aan hoër vlakke van belangrikheid wat met vrylopende lam, hormoonvrye lam, antibiotikavrye lam en Karoo-lam geassosieer word. Hoe hoër die subjektiewe kennis oor die aansprake, hoe belangriker is die aansprake, wat daarop dui dat hoe meer selfvertroue verbruikers in hulle kennis oor die onderskeie aansprake het, hoe belangriker sal hulle die inligting oor die aansprake op die produketiket ag. Daar bestaan geen betekenisvolle verband tussen objektiewe kennis van vrylopende, hormoonvrye en antibiotikavrye produksieprosesse en die belangrikheid wat met die onderskeie aansprake geassosieer word nie. Die ANOVAs toon dat verbruikers se subjektiewe kennis van die produksieprosesse varieer volgens demografiese eienskappe. Hoër vlakke van subjektiewe kennis oor die spesifieke aansprake het 'n positiewe effek op verbruikers se bereidwilligheid om meer vir lam- of skaapvleis te betaal, terwyl objektiewe kennis nie verwant is aan bereidwilligheid om meer te betaal nie. Die resultate van die studie het implikasies vir die voedselindustrie (produsente, bemarkers en handelaars), beleidsmakers, regeringsagentskappe en onafhanklike verbruikersbeskermingsorganisasies.

Slutelwoorde: subjektiewe kennis, objektiewe kennis, produksieprosesaansprake, aansprake oor geografiese herkoms, verbruikersbesluitneming, vooraf-verpakte vars lams- of skaapvleisprodukte

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LIST OF ABBREVIATIONS AND ACRONYMS

ANOVA	Analysis of Variance
BFAP	Bureau of Food and Agricultural Policy
BSE	Bovine spongiform encephalopathy
CPA	Consumer Protection Act
DAFF	Department of Agriculture, Forestry and Fisheries
DoH	Department of Health
DTI	Department of Trade and Industry
FACTS	Food and Allergy Consulting and Testing Services
FAO	Food and Agricultural Organisation
FSAI	Food Safety Authority of Ireland
GM	Genetically Modified
NAMC	National Agricultural Marketing Council
SAICA	The South African Institute of Chartered Accountants
SAMIC	South African Meat Industry Company
SANAS	South African National Accreditation System
TRIPS	Trade-Related Aspects of Intellectual Property Rights
UN	United Nations
UNGCP	United Nations Guidelines for Consumer Protection
WTO	World Trade Organization

CHAPTER 1

The study in perspective

1.1 BACKGROUND TO THE STUDY

Worldwide, consumer protection (consumerism) enjoys wide attention as the basic rights of consumers have been recognised and various regulatory agencies have been established to make and enforce laws to protect consumers from deceptive or unfair business practices. Consumer protection is generally much more advanced in developed countries than in many developing countries, since both public policy makers and businesses tend to acknowledge the rights of consumers, and various established governmental and non-governmental organisations make decisions and take action based on consumers' best interests (Darley & Johnson, 1993; Lysonski, Durvasula & Madhavi, 2012; Molise, 2017:12). First-World consumers are also more experienced about particular consumer issues, are more independent, and are therefore better able to stand up for themselves (Lysonski *et al.*, 2012). However, the plight of the consumers in emerging economies highlights the importance of the role of governmental regulatory bodies and third-party consumer protection organisations in enforcing proper consumer legislation (Erasmus, 2013:357; Donoghue, Van Oordt & Strydom, 2016).

With the implementation of more stringent food labelling regulations locally and globally, the protection of consumers pertaining to the purchase and consumption of food products has received wide attention in the last few years and is the subject of intense debate among role players in the food industry and concerned consumers. More specifically, the regulation of meat labelling made international headlines in 2013 when a scandal broke in Europe over the mislabelling of meat products – foods advertised as containing beef were found to contain undeclared or improperly declared horse meat, pointing to a major breakdown in the traceability of the food supply chain (Stanciu, 2015; Agnoli, Capitello, De Salvo, Longo & Boeri, 2016). Although Agnoli *et al.* (2016) indicate that the horsemeat scandal broke in 2012, the reality of the scope of the meat fraud only emerged in 2013 after other meat products marketed on the European market came under the spotlight. The problem was not so much the nutritional value or food safety but the fraudulent labelling, indicating beef as the main product with no indication that horsemeat was part of the product. This implied a huge ethical issue, with the European food sector facing distrust from consumers and consumers boycotting beef products (Stanciu, 2015:698). It became a local issue when researchers such as Cawthorn, Steinman and Hoffman (2013) confirmed that the mislabelling of processed meats was commonplace in South

Africa. In a similar vein, reports and scholarly articles (Kirsten, 2006) and articles in the media also suggest that trade names such as “Karoo Lamb” are wrongfully being used on meat products that cannot even remotely be linked to the geography or the values and images of the Karoo. These examples point not only to the ease with which businesses can engage in unfair and unethical practices but also to the vulnerability of consumers who can easily be misled or exploited for illicit financial gain.

As far as letters of complaint in the consumer columns of major South African newspapers and also online letters to consumer complaint websites and consumer bodies are concerned, consumers with a higher level of educational attainment and high income are generally more aware than ever before of specific consumer issues, such as the ethical concerns regarding food production and quality, food scandals, the genetic modification of foods, the nutritional value of food, the energy content of food products, and specific diseases associated with the intake of specific ingredients in food. Such consumers are more discerning about what they want, have higher consumer expectations, may be more inclined to read food labels (Kempen, Bosman, Bouwer, Klein & Van der Merwe, 2011; Font-I-Furnols & Guerrero, 2014); and express their dissatisfaction with products that do not meet their expectations (Donoghue, De Klerk & Ehlers, 2008).

A food label forms part of the extrinsic product cues/attributes that may assist consumers in making purchasing decisions (Kempen *et al.*, 2011). Food labels are either printed on the packing itself or attached to product containers (Regulations relating to the labelling and advertising of foodstuffs, 2010; Prinsloo, Van der Merwe, Bosman & Erasmus, 2012). Consumers’ interpretation of food label information potentially have a direct bearing on their consumer decision making (Kempen *et al.*, 2011) and may influence their consumer purchasing behaviour in different ways. For example, Vermeulen, Schönfeldt and Pretorius (2015) found that the expiry date was significantly more important among the middle-class and wealthy groups for both beef and mutton/lamb, while price was significantly more important among the poor and middle-class groups, implying that consumers’ interpretation of the expiry date probably depends on consumers’ level of schooling and subsequent level of income.

South African food laws are complex and fragmented, contributing to the difficulty in interpreting and regulating these laws. The food labelling regulations, including the Regulations relating to the Advertising and Labelling of Foodstuffs (R. 146/2010) and the recently updated Food Labelling Regulations (R. 429 of 29 May 2014), which is still in draft form, are compiled and published at national level and enforced at municipal level by local environmental health officers. Various authorities are involved in regulating food laws, for example, the Department of Health (DoH) is responsible for labelling around additives and contaminants; the Department of

Agriculture, Forestry and Fisheries (DAFF) is responsible for labelling around the Agricultural Product Standards Act, the Meat Safety Act and the Liquor Products Act; while the National Consumer Commission has an overarching responsibility for any misleading labelling and advertising as stipulated by the Consumer Protection Act No. 68 of 2008 (hereafter referred to as the CPA). Regrettably, enforcement of food labelling regulations is a daunting task as specific label claims, including production process claims, are not necessarily clearly defined, contributing to possible misinterpretation. In addition, many administrators who need to monitor compliance with regulations are overburdened with engagements and in many cases lack appropriate training, human resources and skills to perform their duties (communication, Janusz Luterek, Legal expert on the Consumer Protection Act and partner at Hahn & Hahn Attorneys).

To complicate matters even further, some manufacturers and smaller food retailers might unintentionally provide limited information on their product labels because of a lack of understanding of, or because of being fearful of misinterpreting, the recently updated Food Labelling Regulations (R. 429, of 29 May 2014) and the Consumer Protection Act. In addition, unfortunately, some retailers might also exaggerate or falsify information pertaining to product claims to obtain an unfair advantage over their competitors – thereby misleading consumers and exploiting consumers in the marketing and sale of goods (oral communication, Karen Horsburgh, consultant dietician at Food and Allergy Consulting and Testing Services (FACTS)). Large food retailers are increasingly making use of advanced labelling information such as free range, region of origin, feeding practices, and animal welfare on the packaging of fresh red meat products to comply with the Regulations relating to the Advertising and Labelling of Foodstuffs (R. 146/2010) (DoH, 2010:3-53) and to the CPA (R. 467/2009) (DTI, 2009:1-186; Cawthorn *et al.*, 2013; Vermeulen *et al.*, 2015). Retailers could from a business perspective use these claims to position selected brands, which in itself is not problematic if the claims are used in a lawful manner, but it becomes an ethical predicament when claims are used as a clever marketing ploy to raise awareness and drive more purchases of fresh red meat.

Consumers of fresh red meat products might find it difficult to interpret claims related to specific production processes such as “grass-fed”, “free range”, “antibiotic free” “hormone free”, and claims about geographic origin such as “Karoo Lamb” used on the labels or packaging material, especially if they are uncertain about the meaning of such terminology. It is therefore important that consumers of pre-packaged fresh red meat products should be aware of the meaning of specific food claims on labels, as such knowledge could influence their consideration of evaluative criteria when making purchasing decisions and could help to protect them against unscrupulous marketing tactics. It should, however, be noted that consumers’ knowledge is not only a function of their interpretation of sources of information such as product labels, but also of their previous experience with specific products (Font-I-Furnols & Guerrero, 2014:296).

Considering the above discussion, and with special reference to the consumers' vulnerability, one is bound to raise the following four questions:

- Firstly, what do consumers of pre-packaged fresh lamb or mutton know about labelling claims related to the production of animals and the claims of geographic origin?
- Secondly, what evaluative criteria do consumers consider important when purchasing pre-packaged fresh lamb or mutton at large food retailers?
- Thirdly, what is the relationship between consumers' knowledge of specific production process claims and their consideration of the importance of specific evaluative criteria when purchasing pre-packaged fresh lamb or mutton?
- Fourthly, are consumers willing to pay a premium for pre-packaged fresh lamb or mutton with specific production process claims or claims of origin?

1.2 PROBLEM STATEMENT

Considering that the average meat consumption in South Africa is estimated at 41,0 kg per capita per year, which with a marginal difference of 0,2 kg equals the global consumption of 41,2 kg per capita per year, it is evident that the demand for meat is escalating – probably due to the increase of the population as well as socio-cultural and socio-economic development (Delgado, 2003; Taljaard, Jooste & Asfaha, 2006; FAO, 2009:9-13; Cawthorn *et al.*, 2013). There is a vast difference in South African consumers' meat expenditure spending patterns, with marginalised consumers spending 22% of their total food expenditure on meat products, middle-income earners spending 26%, followed by wealthy consumers spending 27% (BFAP, 2014:104; Vermeulen *et al.*, 2015). A prominent feature of the South African consumer market is upward class mobility, with lower-income consumers moving to higher LSM groups – a movement that is driven by economic growth and socio-economic empowerment (Vermeulen *et al.*, 2015:340). In comparison with chicken, beef and mutton retail at more than double the price and one and a half times more than pork, making red meat a very expensive commodity (NAMC, 2010:1-25; DAFF, 2011:1-58; Cawthorn *et al.*, 2013). Mutton and beef products can be seen as luxury food products due to the excessive price increases experienced since 2000. It is therefore important that consumers make objective decisions when they consider buying these products.

According to De Villiers (2009), some of the South African food manufacturers have in the past used marketing strategies that were misleading consumers with blatant untruths and half-truths printed on labels. Food retailers by law need to use specific label information, including production process claims and claims of geographic origin, on the packaging or labelling of pre-

packaged fresh meat products to inform consumers and to facilitate consumer decision making, and by implication to promote sales. Due to the misinterpretation of claims that are increasingly being used by traders and marketers of pre-packed meat products, the integrity of the meat industry could be at stake and many consumers are often left confused. According to Cawthorn *et al.* (2013), the mislabelling of processed meat are commonplace in South Africa. Specific attention to the wording of labels and the way products are advertised are therefore needed (De Villiers, 2009:13).

The provision of information, whether related to labelling or advertising of pre-packaged food products, forms part of the consumer's basic right to information, meaning the right to be given the facts needed to make an informed decision, as well as the right to consumer education, meaning the right to acquire the knowledge and skills to be informed throughout life, as stipulated by the CPA (Gibson & Hull, 2013). In terms of amended regulations, which is still in draft form, relating to the labelling and advertising of foods (R. 429/2014), labelling information, including claims of the more humane treatment/rearing of food animals, such as "Karoo Lamb", "country reared", "grass-fed", "grain-fed", "natural", "free range", "natural lamb", "hormone free" and "antibiotic free", will be permitted only if linked to specific protocols approved and registered with the Department of Agriculture, Forestry and Fisheries or regulations in terms of the Agricultural Products Standards Act (119/1990) or the National Regulator for Compulsory Specifications Act (5/2008) (R. 429/2014) (DoH, 2014:39). In addition, Section 22 of the CPA stipulates that all suppliers should disclose information on documents, notices and/or pictures, in plain and understandable language to facilitate understanding, and that suppliers must ensure that any trade descriptions or labels applied to goods are accurate, up to date and do not contain anything that could mislead the consumer in any way (Opperman & Lake, 2012:107-111).

Research in recent years about food labelling in the South African context is having definite implications for the food industry and consumer facilitators. For example, Kempen *et al.* (2011) explored a sample of South African consumers' reasons for reading labels and the influence of food labels on consumers' purchasing behaviour. Prinsloo *et al.* (2012) wrote a review article about the significance of food labelling during consumer decision making. In another study, Van der Merwe, Bosman and Ellis (2014) found that respondents had mainly positive opinions about food labels as an information source and appreciated the importance of product and origin information. Research on specific factors influencing consumers' decision making pertaining to red meat products have revealed interesting findings. For example, Du Plessis and Du Rand (2012) found that price as an extrinsic product attribute was the most important factor in consumers' decision-making process when purchasing Karoo lamb, followed by safety, quality and traceability, the attribute "region of origin" being the least important. In another study,

Vermeulen *et al.* (2015) investigated South African consumers' knowledge about red meat, their usage and perceptions regarding beef and sheep meat classification, and related quality parameters. Their findings showed that low-income consumers had a very limited understanding of the meat classification system, while the middle-class to more wealthy consumers had a relatively better understanding of the meat classification system. Vermeulen *et al.* (2015) also presented an overview of the results from in-store observational research at retail outlets (independent butchers and national chain retailers) selling fresh red meat.

Vermeulen *et al.* (2015) indicated that further research was needed to determine whether the limited application of labelling claims was related to a lack of product innovation in the industry or to retailers' vigilance in making claims on their product labels that may not meet the recently updated Food Labelling Regulations (R. 429, of 29 May 2014) which is still in draft form and has not been promulgated yet. However, it should be noted that this need for further research was based on butchers' and national chain retailers' interpretation and application of food labelling regulations. Considering the consumers' perspective, such research could benefit from an understanding of consumers' knowledge of specific production process claims. To date, no studies have been conducted to determine whether consumers' subjective and objective knowledge of selected production process claims and claims of geographic origin influences their willingness to pay for pre-packaged fresh lamb and mutton products – implying a gap in available research.

Consumers who are not aware of food labelling regulations due to a lack of information and who do not know the meaning of technical production process claims might struggle to make informed and responsible purchasing decisions. This is an important issue as consumers' knowledge of specific labelling claims could influence their consideration of specific evaluative criteria when purchasing pre-packaged fresh lamb or mutton. A lack of labelling knowledge and product knowledge could be very costly as it could increase consumers' risk perception preventing them from purchasing products or it could contribute to post-purchase dissatisfaction (Rousseau, 2003a:459). This implies that the red meat industry should take on the challenge to provide consumers with meaningful information in an understandable manner to facilitate consumer education, and to build consumers' trust in the meat industry, which could at the same time stimulate consumption of pre-packaged fresh red meat.

1.3 JUSTIFICATION

This study integrates theory from the domains of consumer protection and consumer behaviour by attempting to shed some light on the relationship between consumer-related variables, in this

case, the influence of consumers' knowledge of production process claims and claims of geographic origin on their consideration of evaluation of criteria provided on the labels of pre-packaged fresh lamb and mutton. The findings of the study could contribute to the unexplored field of research pertaining to consumers' knowledge of specific production process claims and claims of origin associated with pre-packaged fresh red meat. The study could have practical significance in terms of the improvement of labelling legislation regarding red meat, the application of effective control between government and the private sector, and consumer education pertaining to the meaning of specific claims provided on red meat labels.

The current research could contribute to an understanding of consumers' knowledge of production process claims, and could help industry role players such as the Department of Agriculture, Forestry and Fisheries (DAFF) and South African Meat Industry Company (SAMIC) to define specific production process claims more clearly, facilitating better regulation of such claims. Such definitions will not only facilitate the red meat industry, but also consumers' understanding of specific production process claims.

An exploration of consumers' subjective and objective knowledge of selected production process claims and claims of origin associated with fresh mutton and lamb, will allow researchers to compare "what consumers think they know" with what they "actually know" about these claims. An understanding of the relationship between consumers' subjective and objective knowledge and their consideration of evaluative criteria when purchasing lamb or mutton at food retailers could assist decision makers and policy makers in the red meat industry to develop appropriate market communication strategies, specifically regarding meat labels, promotional information and educational information brochures. The findings could also help consumer advisors, government and third-party consumer protection organisations to develop training programmes that could improve consumers' self-confidence and also their requisite knowledge about food product claims to allow them to make informed purchasing decisions. The research could contribute to food retailers' understanding of the information that consumers regard as important when purchasing pre-packaged lamb or mutton products. Given the increase in the demand for red meat as the South African middle class is growing due to socio-economic empowerment and consumers are becoming increasingly more sophisticated, an exploration of the relationship between demographic characteristics and consumers' knowledge of selected claims could be beneficial to retailers in marketing pre-packaged red meat products to specific target markets.

1.4 RESEARCH AIM AND OBJECTIVES

1.4.1 Research aim

The aim of this study is to explore and describe the relationship between consumers' subjective and objective knowledge of selected production process claims and claims of origin, and their consideration of the importance of specific evaluative criteria when purchasing pre-packaged fresh mutton and lamb at large food retailers. In addition, the relationship between demographic characteristics and consumers' subjective and objective knowledge will be explored. Consumers' willingness to pay a premium for fresh lamb or mutton products featuring selected claims will also be explored.

For the purpose of this study, the production process claims refer to "grass-fed", "free range", "antibiotic free", and "hormone free", and the claim of origin refers to "Karoo Lamb".

1.4.2 Research objectives

Objective 1

To explore and describe consumers' knowledge of selected production process claims and the claim of geographic origin when purchasing pre-packaged fresh lamb or mutton.

Sub-objective 1.1

To explore and describe consumers' subjective knowledge of selected production process claims and the claim of geographic origin associated with pre-packaged fresh lamb or mutton.

Sub-objective 1.2

To explore and describe consumers' objective knowledge of selected production process claims and the claim of geographic origin associated with pre-packaged fresh lamb or mutton.

Objective 2

To explore and describe consumers' consideration of the importance of selected evaluative criteria when purchasing pre-packaged fresh lamb or mutton.

Objective 3

To explore and describe the relationship between consumers' knowledge of selected production process claims and the claim of geographic origin, and their consideration of the importance of selected evaluative criteria when purchasing pre-packaged fresh lamb or mutton.

Sub-objective 3.1

To explore and describe the relationship between consumers' subjective knowledge of selected production process claims and the claim of geographic origin, and the importance of selected evaluative criteria when purchasing pre-packaged fresh lamb or mutton.

Sub-objective 3.2

To explore and describe the relationship between consumers' objective knowledge of selected production process claims and the claim of geographic origin, and the importance of selected evaluative criteria when purchasing pre-packaged fresh lamb or mutton.

Objective 4

To explore and describe the relationship between demographic characteristics and consumers' knowledge of selected production process claims and the claim of geographic origin associated with pre-packaged fresh lamb or mutton.

Sub-objective 4.1

To explore and describe the relationship between demographic characteristics and consumers' subjective knowledge of selected production process claims and the claim of geographic origin associated with pre-packaged fresh lamb or mutton.

Sub-objective 4.2

To explore and describe the relationship between demographic characteristics and consumers' objective knowledge of selected production process claims and the claim of geographic origin associated with pre-packaged fresh lamb or mutton.

Objective 5

To explore and describe the relationship between consumers' knowledge of selected production process claims and the claim of geographic origin and their willingness to pay a premium for fresh lamb or mutton featuring selected claims.

Sub-objective 5.1

To explore and describe the relationship between consumer' subjective knowledge of selected production process claims and the claim of geographic origin and their willingness to pay a premium for fresh lamb or mutton featuring selected claims.

Sub-objective 5.2

To explore and describe the relationship between consumers' objective knowledge of selected production process claims and the claim of geographic origin and their willingness to pay a premium for fresh lamb or mutton featuring selected claims.

1.5 STUDY AREA

The study was conducted in the main urban areas across South Africa, i.e. Tshwane, Ekurhuleni, Johannesburg, Durban and Cape Town, to attract consumers who have ample exposure to food retailers.

1.6 RESEARCH DESIGN AND METHODOLOGY

The study is quantitative, exploratory and descriptive in nature. A cross-sectional survey design involving a self-administered online questionnaire was used to shed some light on the link between consumers' knowledge of selected production process claims and claims of geographic origin, and their consideration of the importance of selected evaluative criteria when purchasing pre-packaged fresh lamb or mutton. The unit of analysis for this study was urban consumers, 18 years and older, who were the main buyers of pre-packaged fresh lamb or mutton at large food retailers.

The multi-sectioned, structured questionnaire consisted of five sections. In Section A, respondents had to indicate how frequently and at which retailers they purchased fresh pre-packaged lamb or mutton, who normally does the shopping, whether they read meat labels, and their particular reasons for reading labels if applicable to facilitate memory recall. Section B measured respondents' subjective and objective knowledge of selected production processes claims (grass-fed, free range, antibiotic free and hormone free) and the claims of geographic origin (Karoo Lamb). Subjective knowledge of each specific production process claim and the claim of geographic origin was measured on a 5-point Likert-type scale based on Flynn and Goldsmith's (1999) short and reliable measure of subjective knowledge that is applicable to a variety of knowledge domains. The objective knowledge tests for production processes were

self-developed and included true/false questions about the meaning of the specific production process claims and the specific claim of geographic origin. Section C measured respondents' agreement with their consideration of the importance of evaluative criteria, based on label information provided. These evaluative criteria included the following: hormone free, free range, antibiotic free, sell-by date, price per kg, organic, country of origin, use-by date (expiry date), price, fatness and Karoo lamb. A further two questions on these evaluative criteria were asked, namely to select in ranking order when reading the information on the label which is most important to them as well as least important regarding pre-packaged lamb or mutton. Respondents were also asked to indicate their willingness to pay more for pre-packaged lamb or mutton featuring selected claims. Section D measured respondents' demographic information pertaining to gender, age, ethnic group, level of education, level of monthly household income, and residential area.

Due to time and monetary constraints, Consulta Research, a respectable research company, recruited respondents by means of random convenience sampling after pre-testing the online questionnaire. The Consulta Research online community includes a diverse group of consumers who differ in terms of gender, age, level of income, level of education and ethnic group. The Consulta Research company distributed the questionnaire electronically during January 2016 to 1 200 online community members. A total of 355 usable questionnaires were collected and coded by Consulta Research.

To ensure the quality of the study, special effort was made to eliminate error by enhancing the validity and reliability of the results and by implementing ethical guidelines.

1.7 DATA ANALYSIS

The data was analysed with the assistance of a qualified statistician. Descriptive statistics, including numerical measures such as frequency distribution, the means, standard deviation, and graphic description, and inferential statistics, including ANOVA, were used to analyse the data.

1.8 COMPOSITION OF THE DISSERTATION

The dissertation is structured as follows in five chapters:

Chapter 1 explains the background to the study and presents the research problem as well as the justification for the research. The aim and objectives of the research are also presented. The study area, research design and methodology, data analysis are clarified and the structure of the study is briefly explained.

Chapter 2 discusses the theoretical background to the study. The literature review focuses on the conceptual definition of *consumerism*, the different Acts pertaining to food labelling in South Africa, with specific reference to meat labelling, and the Consumer Protection Act (68/2008), which promotes the rights of consumers. The specific production process claims and claims of geographic origin are conceptualised and discussed. The consumers' decision making is discussed, with specific reference to the search for information and the evaluation of alternatives. Consumers' product knowledge is distinguished in terms of the subjective and objective knowledge dimensions. The rational perspective to consumer decision making is discussed to provide more detail on the cognitive aspect pertaining to decision making. Based on the theoretical background and theoretical perspective, the conceptual framework is provided and explained, and the aim and objectives of the study are stated.

Chapter 3 presents the research design and methodology of this research. Important concepts are operationalised, by an explanation of the relevant statistical methods used to analyse the data. The quality of the data in terms of validity and reliability is outlined and ethical issues relating to the research are discussed.

Chapter 4 presents the demographic characteristics of the sample, followed by the analysis and interpretation of the results according to the objectives of the study. The findings are also discussed in terms of the literature on consumer decision making and on their subjective and objective knowledge.

Chapter 5 discusses the conclusions and limitations of the study, and suggests recommendations for further research. The implications of the findings for academic interest and also for the industry are discussed.

The addenda are listed below:

- The online questionnaire is included in Addendum A.
- The paper-based cover letter and questionnaire are included in Addendum B.
- The ethics approval letter is presented in Addendum C,
- The plagiarism declaration is presented in Addendum D.

CHAPTER 2

Consumer protection, consumer decision making and consumer knowledge: A Literature review

2.1 INTRODUCTION

This chapter provides a comprehensive overview of the relevant literature pertaining to the main concepts of the study, namely consumer protection, consumer decision making and consumer knowledge. The different Acts pertaining to food labelling in South Africa, with specific reference to meat labelling, and the Consumer Protection Act (68/2008), which promotes the rights of consumers, are discussed. The specific production process claims and claims of geographic origin are conceptualised and discussed. The consumers' decision making with specific reference to the search for information and the evaluation of alternatives are also discussed. Consumers' product knowledge is distinguished in terms of the subjective and objective knowledge dimensions. The rational perspective to consumer decision making is explained. Based on the theoretical background and the theoretical perspective, the conceptual framework is provided and explained, and the aim and objectives of the study are stated.

2.2 CONSUMER PROTECTION

The concept *consumerism* has two meanings. The first meaning refers to consumers' pre-occupation with acquiring goods (Rousseau, 2003a:447; Erasmus, 2013:355). In the field of economics, the term *consumerism* describes a society where people are motivated to acquire products that they clearly do not need to support or maintain themselves, they rather become trapped in the process of acquisition, and reflect their identity through shopping and the ownership of products (Stearns, 2006:vii). The second meaning refers to "the efforts of independent individuals and organizations, government and business to protect the rights of consumers in the exchange process" (Rousseau, 2003a:447; Babin & Harris, 2018:336; Jain & Goel, 2012; Brijball Parumasur & Roberts-Lombard, 2012:60; Erasmus, 2013:355).

Consumerism is also seen as a social movement to enhance the rights of buyers in relation to sellers or as a “people’s movement” making far-reaching social, ecological and political demands on providers of goods and services (McIlhenny, 1990:9-10). In this sense consumerism also refers to “consumer protection”, “the consumer movement” or “consumer activism”. For the purpose of this study, the second meaning applies.

The consumerism movement formally started in the United States of America in 1962 when President John F. Kennedy introduced the Consumer Bill of Rights, which included the right to safety, the right to be informed, the right to redress, the right to be heard, and the right to choose (Babin & Harris, 2018:336). This formed the basis of the “United Nations Guidelines for Consumer Protection” (UNGCP) that was adopted in 1985. The UN added four more rights to those of President Kennedy, namely the right to redress, the right to consumer education, the right to a healthy environment, and the right to have basic needs met. These rights are internationally recognised and form the basis of consumer legislation in many countries around the world, including South Africa (CI, 2013; Donoghue *et al.*, 2016; Molise, 2017).

The advancement of consumerism follows a life-cycle pattern of development, characterised by successive stages (Kaynak, 1985; Darley & Johnson, 1993). Kaynak and Wickstrom (1985) distinguishes four stages: crystallisation, organisation, institutionalisation and conceptualisation. The crystallisation stage is characterised by the absence of a national, organised consumer movement. In the organisation stage a national consumer movement begins to organise itself in order to initialise consumer legislation and to give consumers a voice. The institutionalisation phase is characterised by government intervention, importance of consumer affairs and various consumer protection policies. It is only in the conceptualisation stage that consumers actively become involved in the critical, political, technological, social and macro-economic issues a stage that is critical for the development of consumerism (Kaynak & Wickstrom, 1985). Darley and Johnson (1993) suggested four similar phases, but named them differently. In the crusading phase, consumers do not have any redress options available and they have limited protection against exploitation. In the population movement phase, groups of consumers with similar interests begin voicing their concerns. In the organisational or managerial phase, organisations are formed in order to act on behalf of these consumer groups. The bureaucratic phase is mostly characterised by arrogant consumers whose demands cause conflict between consumers and industry (Darley & Johnson, 1993; Erasmus, 2013:357). It is important to note that the level of consumer knowledge, protective legislation, involvement of government consumer agencies and the funding available for public consumer education programmes would determine a country’s life-cycle position (Kaynak, 1985; Darley & Johnson, 1993; Erasmus, 2013:357).

It is an undeniable fact that consumer protection has progressed further in more developed countries (MDCs) than in less developed countries (LDCs) such as African countries (Darley & Johnson, 1993). Many consumers in less developed countries are easily exploited owing to a lack of protection or because they are not necessarily aware of their consumer rights (Donoghue *et al.*, 2016). Lower levels of education inevitably limit the decision making and negotiation skills of vulnerable consumers in such countries. Consumers with a low level of literacy are, for example, not able to read or comprehend complex product information such as product labels (Erasmus, 2013:356). However, more sophisticated consumers also often fall prey to misleading information, emphasising that consumers at all levels need consumer protection (Lysonski *et al.*, 2012).

In South Africa, consumerism has lately acquired an entirely new character due to the changes promulgated by the CPA, which came into effect on 1 April 2011 (Van Oordt, 2015:2). The CPA is the result of the Department of Trade and Industry's (DTI) intention to "create and promote an economic environment that supports and strengthens a culture of consumer rights and responsibilities" (Davey, 2010). The CPA has replaced in part or entirely pre-existing legislation and created some new law and codified other areas of law (Donoghue *et al.*, 2016). The CPA focuses on consumer protection by aiming "to promote a fair, accessible and sustainable marketplace for consumer products and services and, for that purpose, to establish national norms and standards relating to consumer protection" (Davey, 2010). The CPA encompasses an extensive framework for protecting consumers' rights when transacting with suppliers of goods and services, specifically the right to equality in the consumer market, the right to privacy, the right to choose, the right to the disclosure of information, the right to fair and responsible marketing, the right to fair and honest dealing, the right to fair, just and reasonable terms and conditions, the right to fair value, good quality and safety, and the right to hold the supplier accountable (Reddy & Rampersad, 2012; SAICA, 2013; Donoghue *et al.*, 2016). As far as consumer legislation is concerned, South African consumers can claim to be among the best protected consumers in the world, yet many consumers are still uninformed about their consumer rights and their associated consumer responsibilities (Donoghue & De Klerk, 2009).

The CPA stipulates that consumers have the right to the disclosure of information, and it is especially section 24 of the CPA that spells out the consumer's right to fair and accurate product labelling and trade descriptions; it specifies that a person or a supplier of goods and services may not knowingly apply to any goods a trade description that is likely to mislead the consumer as to any matter implied or expressed in that trade description. Section 29 of the CPA sets out the general standards for marketing goods and services, stipulating that parties in the supply chain must not market any goods or services in a manner that is likely to imply a false or misleading representation about them. As far as general information is concerned, section 22 of

the CPA, which refers to the right to information in plain and understandable language, stipulates the following: A notice, document or visual representation should be in plain language so that an ordinary consumer for whom the notice, document or visual representation is intended, with average literacy skills and minimal experience as a consumer of the relevant goods and services, could be expected to understand the content, significance and importance of the notice, document or visual representation (CPA, 2011:62).

The protection of consumers pertaining to the purchase and consumption of food products has received wide attention in the last few years and is the subject of intense debate among role players in the food industry and concerned consumers. For example, the regulation of meat labelling made international headlines in 2013 when a scandal broke in Europe over incorrectly labelled meat products (Stanciu, 2015; Agnoli *et al.*, 2016). The scandal emerged in 2012 but was only confirmed in January 2013 by the Food Safety Authority of Ireland's (FSAI) press release on the presence of horse DNA in some beef burger products (https://www.fsai.ie/news_centre/press_releases/horseDNA15012013.html). It became a local issue when researchers such as Cawthorn *et al.* (2013) confirmed that undeclared protein, including plant protein such as soy and gluten, unconventional animal species including traces of donkey, water buffalo and goat meat, and conventional animal species such as pork or chicken were present in processed meat products due to accidental cross contamination and/or deliberate substitution. Cawthorn *et al.* (2013) concluded that the mislabelling of processed meats is commonplace in South Africa despite the growing demand for transparency in the food industry. In 2013, the then Minister of Agriculture and Forestry and Fisheries, Tina Joemat-Pettersson, also confirmed in a parliamentary reply that thousands of kilograms of poultry, beef pancreas and water buffalo meat had been imported from India and Brazil in the preceding three years, despite significant health risks (Hedley, 2013). In addition, reports and scholarly articles (Kirsten, 2006) and articles in the media suggest that trade names such as "Karoo Lamb" are wrongfully being used on meat products that cannot even remotely be linked to the geography or the values and images of the Karoo. Considering the above-mentioned examples, it is clear why consumers have become increasingly sceptical about the contents of meat products being sold by prominent South African retailers.

Although retailers in most cases comply with meat labelling regulations, consumers should be vigilant, in that they should not only rely on the product name but also be aware of the fine print on a label, specifically the list of ingredients (Power, 2016). Retailers can easily mislead consumers, even if not intended, by using confusing terminology on product labels and in-store promotional material. For example, there are no standards or regulations for mince beef in South Africa, so retailers generally label pure 100% mince as "beef mince" while the blended version is called "ground beef" where soya and water are added without consumers realising it.

Consumers may, however, assume that mince is mince, the only variance being in the amount of fat added, i.e. regular, lean or extra lean mince (Power, 2016). In terms of labelling, the term “beef mince” is and should refer to a pure beef product, to which a percentage of fat has been added, while the term “ground beef”, also known as “extended mince” refers to a beef mince product to which spices and vegetable protein, such as soya, has been added (Frazer, in Power, 2016). Consumers, including sophisticated consumers who do not know the differences between such terminology, can easily make incorrect product choices and in the end pay for products that they thought had the ingredients they were paying for. This points to the vulnerability of all consumers.

2.2.1 Meat product labelling regulations in the South African context

In most countries, food regulators have been reluctant to rely on free market mechanisms to provide consumers with adequate and accurate label information on food products (Caswell & Padberg, 1992; Variyam, Blaylock, & Smallwood, 1996; Marette, Crespi, & Schiavina, 1999). This is mainly because of the credence nature of food products. Based on the availability of information pertaining to product attributes, products can be categorised into three types: search goods, where a consumer can obtain full information online about product attributes prior to purchase; experience goods, where product characteristics can only be determined after its purchase; and credence goods, where product characteristics become known after a long time lag and product hazards cannot be determined with certainty (Caswell & Mojduszka, 1996; Marette, Bureau, & Gozlan, 2000; Fulton & Giannakas, 2004; Roe & Sheldon, 2007; Bonroy & Constantatos, 2008). Several studies argue that one of the practical methods for addressing the information deficit in credence and experience goods is proper labelling coupled with an effective regulatory mechanism for implementation and certification of food labels (Marette *et al.*, 2000; Roe & Sheldon, 2007; Bonroy & Constantatos, 2008).

In South Africa, different Government departments and organisations currently regulate the labelling of food. The departments are the Department of Health (with regulation R. 146, which replaced R. 2034 in 1993, and R. 429, which is a set of guidelines applicable to R. 146) and still in draft form, as well as the the Department of Agriculture, Forestry and Fisheries (with regulation R. 55, which replaces R. 863 and the Consumer Protection Act (68/2008)). Despite the implementation of more stringent food labelling regulations locally and globally, the adulteration or misrepresentation of food products for illicit financial gain continues to be far too common and of great concern in society (Premanandh, 2013). Consumers have the right to information, specifically accurate information, on the packaging of fresh red meat products, particularly at a time when they are increasingly expressing the desire to make food choices that are consistent with their lifestyle, health and wellbeing (Cawthorn *et al.*, 2013).

The wide scope of the Consumer Protection Act has some important implications for the marketing, labelling and advertising of food products. In theory, the current food legislation and the Consumer Protection Act (68/2008) guarantee consumer protection in South Africa with regard to labelling claims on food products. However, in practice it is difficult to monitor whether producers and retailers comply with the regulation concerning labelling claims, as the various role players in the food industry do not necessarily agree on the meaning of the specific claims used on labels, irrespective of the food regulations. Although the Consumer Protection Act (68/2008) (CPA) and labelling regulations are in place, it does not guarantee consumer protection (DoH, 1990: R. 2718; DTI, 2009: R. 467/CPA; DoH, 2010: R. 146 and R. 429). To make matters worse, many consumers are not necessarily aware of existing food legislation and lack knowledge about their consumer rights and responsibilities (Donoghue & De Klerk, 2009; Van Oordt, 2015:81; Molise, 2017:62).

2.2.1.1 Specific meat labelling regulations

As highlighted by Makholwa (2009), the proposed new labelling requirements on food products would take retailers back to the drawing board; they had for many years enjoyed free rein to market and sell products without labelling them in clear, explicit terms. While some retailers welcomed this as a good move to ensure protection of consumer rights, most have raised concern about the possible negative effects of the legislation, especially concerning liabilities.

“Labelling” includes any written, printed or graphic matter that is present on the label, accompanies the food, or is displayed near the food, for the purpose of promoting its sale or disposal. Food labels are either printed on the packaging itself or attached to product containers (R. 146/2010) (DoH, 2010:3-53) and the CPA (R. 467/2009) (DTI, 2009:1-186; Prinsloo *et al.*, 2012). Should this draft regulation (R.429) be promulgated in its current format it will require information appearing on a label to be in English, and in at least one other official language of the Republic of South Africa, and be clearly visible. The name of the food shall appear on the main panel of the label in letters of which the vertical height of font size is not less than 4 mm. The label of a pre-packaged food shall contain the name of the particular food, the address of the manufacturer, importer or seller, instructions how to use the foods if/where it would be difficult to make appropriate use of such food without such instructions, a list of ingredients, special storage conditions if/where applicable, and the net contents of the container, the country of origin, date markings (“Best before” and/or “Use by”, and/or “Sell by”). Words that indicate the appropriate storage instructions before and after opening, when deemed appropriate by the manufacturer, shall appear in capital letters not less than 3 mm in vertical font height, and in bold font, on the label. The manufacturer shall determine the appropriate storage instructions

relevant to the nature of the food, to ensure that safety and any specific quality attributes for which tacit or express claims have been made, are retained and preserved.

"Claims" in relation to a food product refer to any written, pictorial, visual, descriptive or verbal statement, communication, representation or reference brought to the attention of the public in any manner, including a trade name or brand name and referring to the characteristics of a product, in particular to its nature, identity, nutritional properties, composition, quality, durability, origin or method of manufacture, production or storage (R. 429), in draft form. Regulations exist pertaining to the classification of meat, quality indications, misleading indications, specification of imported meat and the use of the word "lamb". For example, words creating the impression that meat is of a particular quality, e.g. "super", "prime"/"prima", "top", "choice"/"keur", "quality"/"kwaliteit"/"gehalte", "extra"/"ekstra" or "ultra" may not be marked on the container of meat or stamped on a carcass. Quality indications such as "country reared", "grass-fed", "grain-fed", "natural lamb", "free range", "Cape Country", "lamb of origin", "indigenous veld raised", "Karoo lamb", "hormone free", "no antibiotics", "Drakensberger", "Hereford", or reference to the humane treatment of animals may be used on condition that they are true, and that the protocol has been registered with the Department of Agriculture, Fisheries and Forestry by SAMIC; otherwise they are deemed to be misleading. When imported meat destined for sale in the retail trade is packed in containers, such containers shall be marked with the expression "imported from" (or "ingevoer vanaf"), followed by the name of the country of origin. The term "lamb" may only be used in the sale of mutton that has been classified according to these regulations as "Age Class A". All other meat from sheep not complying with these requirements must be referred to as "mutton", such as classified mutton, non-classified mutton and imported mutton Department of Agriculture, Forestry and Fisheries, 2015:7-15, (Agricultural Product Standards Act, 1990. Act No. 119 of 1990. Government Notice R.55 No. 38431).

Statements/phrases to the effect of being "fresh", "natural", "nature's", "pure", "traditional", "original", "authentic", "real", "genuine", "home-made", "farmhouse", "hand-made", "selected", "premium", "finest", "quality", or "best", shall be permitted if compliant with the criteria stipulated in Guideline 13 – but statements other than the statements/phrases mentioned above, shall not be permitted (R. 429), still in draft form. In the case of meat, "trimmed fat from meat", "trim", "lean", "extra lean" or similar words or phrases are considered claims regarding nutrient content and may only be used under specific conditions, as set out in the Foodstuffs, Cosmetics and Disinfectants Act (54/1972): Regulations relating to the Labelling and advertising of foods: Amendment R. 429, in draft form.

According to Van Rensburg (2012), the indication of country of origin on packaging containing animal and processed plant products, regulated under the Agricultural Products Standards Act

(119/1990) as well as R. 146 of 1 March 2010 of the Department of Health, a dispensation was issued on the 23rd July 2012 by the Directorate Food Safety and Quality Assurance wherein permission was granted to all manufacturers, packers, retailers and importers of animal and processed plant products to indicate the country of origin as follows:

- “Product of (name of country)” if all the ingredients, processing and labour used to make the product are from one specific country; or
- “Produced in (name of country)”, “Processed in (name of country)”, “Manufactured in (name of country)”, “Made in (name of country)”, or wording having a similar meaning, when the product is processed in a second country which changes its nature; or,
- in the case where single-ingredient agricultural commodities are imported in bulk and where owing to climatic, seasonal or other contingencies more than one country may be the source of the single-ingredient agricultural commodity, the wording “Product of (name(s) of country(ies))” separated by the expression “and/or”, shall be declared on the label of the finally pre-packed foodstuff: provided that the final end product remains a single-ingredient agricultural commodity.

2.2.1.2 Production process claims

In recent years, consumers have attached increasing importance to the way food is produced, and the production process has become a dimension of quality, even when it has no immediate bearing on the taste or healthiness of the product. This quality dimension covers organic production; production that takes animal welfare into consideration, and production without the use of genetically modified organisms. Much of consumer interest in the production process focuses on ‘naturalness’. Since the consumer must rely on guarantees about production-oriented qualities from various sources it can also be seen as a credence character (Brunsø, Fjord & Grunert, 2002).

Standardisation is an objective approach towards establishing effective and practical quality norms. The advantages of standardisation are that product classification or grading encourages consumer confidence and brings about greater market transparency. This is to the advantage of both the trade and the consumer. The trade would be able to purchase specified quality products over time and distance, while the consumer can expect a product of consistent quality when purchasing a specific grade or class. Specific quality indications are permitted if the correct procedures have been followed and the necessary protocol is in place. A quality indication shall not be marked or stamped on the container or outer container of meat or a carcass, unless its use is approved by the executive officer on written request which is accompanied by a protocol describing what the quality indication involves, with the necessary confirmation that it has been audited (DAFF, 2015:14; Product Standards Act (119/1990)).

Although each retailer might have their own specifications concerning specific production process claims, they all have to adhere to what the different Acts require for their protocols. Such claims are only permitted if the required protocol has been approved by the Department of Agriculture, Forestry and Fisheries, who has assigned SAMIC to be the first point of clarification of these specific protocols, and who then audits these trademarks on their behalf. Should SAMIC be satisfied that the trademark complies with the protocol, the latter is sent to DAFF for the necessary registration (SAMIC letter dated 31 March 2017). Any member or group who would like to register a Protocol should follow this route. Given the fragmented information about the meanings of the different production processes claims associated with pre-packaged red meat to be retailed, the concepts of “grass-fed”, “free range”, “antibiotic free “hormone free” and “Karoo Lamb” are discussed in the following paragraphs to facilitate an understanding thereof.

“**Grass-fed**” indicates that cattle and sheep are not fed a diet that is unnatural to the animal and are raised on a diet consisting almost exclusively of indigenous grass, and are allowed to roam freely in large pastures for the animals’ entire lives prior to slaughtering (SAMIC website: www.samic.co.za).

“**Free range**” indicates beef and lamb that are sourced from farmers who are known for good management of their herds/flocks, who farm by traditional natural methods, who have good record systems and who do not use a feed lot, growth promoters, routine antibiotics and do not feed animal by-products, provide sufficient space, proper facilities and company of an animal’s own kind, freedom from pain, disease or injury, ready access to fresh water and a diet to maintain full health and vigour, freedom from fear and distress, allowing animals to roam freely in large pastures for their entire lives. “Free range” includes never being given hormone stimulants as well as antibiotic free (South African Meat Industry Company, 2015:1-2). See Figure 2.1 for an example of a label with free range claims.



FIGURE 2.1: EXAMPLE OF A LABEL DEPICTING FREE RANGE CLAIMS

“**Antibiotics free**” means no routine antibiotics are allowed. Only ill cattle and sheep are treated with antibiotics. Animals are kept apart from production for the required withdrawal period (SAMIC website: www.samic.co.za).

“**Hormone free**” The term “no hormones administered” is applied if sufficient documentation is provided by the producer showing no hormones have been used in raising the animal.

The premium brand Certified Natural Lamb (CNL) sold by Checkers supermarkets is guaranteed to be free range, natural (no chronic antibiotics or added hormones to aid growth), microbiologically safe, traceable to accredited farms of origin, and produced by farms that are ecologically audited to ensure sustainability (Kirsten, Vermeulen, Van Zyl, Du Rand, Du Plessis, & Weissnar, 2017).

2.2.1.3 Claims of geographic origin

The “origin” of food can be seen as an important quality attribute and may also be seen as a credence attribute, as it cannot be objectively evaluated prior to or during consumption of the product; it can only be evaluated if the specific information is given on the product label or through some form of guarantee (Brunsø *et al.*, 2002). The origin of food is well entrenched in the European system of Geographical Indications. Products that are intrinsically linked to a region based on either their quality, reputation or other characteristic are protected by a

geographical indication. European countries have for centuries recognised and fiercely protected this inherent value captured between a product and its origin (Van Zyl, Vermeulen & Kirsten, 2013). Names such as *Parmesan*, *Roquefort*, *Champagne*, *Port* and *Sherry* have been protected by European nations through a system of Geographical Indications to ensure that only people and firms within a specific geographical region benefit from the commercial exploitation of their heritage or their specific resources (Bramley & Kirsten, 2007). However, in contrast to the European Union, developing countries have been remarkably slow to recognise the potential of geographical indications as a tool to prevent the loss of valuable intellectual property in place names and the opportunity to protect traditional knowledge and local biodiversity (World Bank Report, 2004).

The widespread misappropriation of the commercial value in the name *Karoo*, both locally and internationally, has been a strong driver for the Karoo Lamb industry in seeking geographical indication protection (World Bank Report, 2004). Kirsten (2006:13) confronted the problem of intellectual property in the sheep industry with the “Karoo” concept, which has become synonymous with quality, tradition and wholesomeness. People not at all linked to the geographical values and images of the region could exploit the word “Karoo” to make a profit and could pose a threat to the protocol being used without the lamb actually bred and born in the Karoo region. With the signing of the agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS), member countries of the World Trade Organization (WTO) acknowledged geographical indications as an independent intellectual property right. This agreement was an important first step toward providing protection for geographical indications in its member countries. It was concluded that a greater consciousness is needed among policy makers and South Africans to recognise and protect the heritage of South African geographical indications (Kirsten, 2006:13).

Kirsten and colleagues conducted a range of studies, applying different methodologies, over a period of five years, to understand South African consumers’ perceptions about the Karoo region and their preference and willingness to pay for Karoo Lamb products. In a paper comparing and synthesising the above-mentioned studies, Kirsten *et al.* (2017) conclude that the combined reflection of the results of different studies show that “South African consumers have a reasonably good appetite for an origin-based food certification system for Karoo lamb”. However, the results also show that the reputation of the product is not well known and not well appreciated as compared to similar products in Europe, implying that South African consumers need to be educated about the value and uniqueness of the product” (Kirsten *et al.*, 2017:68).

In 2004 the industry started the process of registering a certification trademark in South Africa (World Bank Report, 2004). The Karoo Meat of Origin certification mark (see Figure 2.2)

guarantees the origin of Karoo meat, with only lamb and mutton originating from (that is, born in) the Karoo, qualifying. The name denotes the origin of sheep meat products and can be associated to carcasses, freshly packed or frozen meat, or derivative products complying with these standards. The Karoo's reputation is well attached to the principle of free range production. Animals should therefore have free access to natural grazing and clean water, and may have simultaneous free access to additional animal feed containing cereals, silage or any other natural plant matter, but provided only as supplementary feeding to assist during dry spells and to improve the condition of animals during the reproductive cycle. The trademark brings into play "origin-based certification", but this origin – the Karoo – has a free range, wholesomeness and pristine identity. Free range grazing or production is a specific requirement as it is acknowledged as a contributing factor to the taste or sensory attributes of Karoo Lamb. The Karoo region is defined with reference to specified local municipalities and the lamb producers farming within these municipal boundaries qualify for use of the certification mark, provided the above compliance with the standards presented can be shown (www.karoomeatoforigin.com). "Karoo Lamb" is guaranteed to be:

- Free range
- Fully traceable
- From the Karoo
- Free from added hormones
- Free from routine antibiotics

The Karoo meat of origin certification mark is shown in Figure 2.2.



FIGURE 2.2: KAROO MEAT OF ORIGIN CERTIFICATION MARK

Karoo lamb shares several characteristics with Certified Natural Lamb, with the added qualification that it should be from farms in the identified Karoo region (Kirsten *et al.*, 2017). Karoo Lamb can therefore be defined as mutton or lamb produced with free range production processes, free from routine antibiotics, free from added hormones, and fully traceable to accredited farms in the identified Karoo region. The code of production practices for Karoo lamb and mutton producers ties in very closely with the code of practice of good stock-manship and animal welfare. It includes specific practices to protect the origin identification of the product as

well as to ensure the unique characteristics of the final product (Karoo Development Foundation, 2015). The outstanding characteristics of a trademark are its uniqueness against the norm, and that it is always traceable. Many South Africans have an image of the Karoo with wide open fields, farm homesteads and windmills. These images, together with the tranquillity and honesty of the Karoo way of life, has become synonymous with quality, tradition and wholesomeness, encompassing the entire concept of “Karoo”. Karoo lamb/mutton has become a much sought-after product associated with a distinctive and desirable flavour (Kirsten, Vermeulen, Van Zyl, Du Rand, Du Plessis, & Weissnar, 2012).

2.2.2 Consumers’ knowledge, usage and perceptions regarding beef and sheep meat classification and related quality parameters

Vermeulen *et al.* (2015) conducted a study to investigate South African consumers’ red meat knowledge, usage and perceptions regarding beef and sheep meat classification and related quality parameters. Consumer perceptions of red meat classification were extracted from a comprehensive consumer survey among stratified representative samples of South African low-, middle- and high-income consumers. The findings showed that low-income consumers had very limited understanding and gave little attention to red meat classification, while middle-class and wealthier consumers had a limited understanding of red meat classification, with about half of consumers checking for a classification mark. However, it should be noted that even among the wealthy segment only about 15% of the particular sample perceived that they had red meat classification knowledge, which points to the inadequacy of consumer knowledge in this regard – even among those consumers who have high general education levels.

Consumers’ purchase considerations for raw beef and raw mutton/lamb were also investigated by Vermeulen *et al.* (2015). The dominant purchase considerations for both beef and mutton/lamb focussed largely on safety, appearance, price and eating quality. Price was significantly more important among the poor and middle-class groups for both beef and mutton/lamb, while expiry date was significantly more important among the middle-class and wealthy groups. Similarly, Du Plessis and Du Rand (2012) found that when purchasing lamb, wealthy South African consumers predominantly considered price, followed by food safety and quality. In a rural South African setting, Vimiso, Muchenje, Marume and Chiruka (2012) also confirmed consumer reliance on price and visual cues to develop quality perceptions of meat.

An overview of the results from in-store observational research at retail outlets (independent butchers and national chain retailers) selling fresh red meat presented by Vermeulen *et al.* (2015), showed that product pricing information (price per kilogram and price per packet), store branding and meat cut information appeared on labels at all the sampled independent butchers,

while 92% of these butchers indicated the packaging date on labels. Between 22% and 43% of the butchers provided information about the distinction between mutton and lamb, uniqueness of the product brand, sell-by date, flavour added to meat (e.g. marinade, spices) or home storage. Fewer than 20% of the butchers provided information on aspects such as country of origin, expiry date, cooking recommendations, additives added to meat (e.g. MSG, salt, SO₂), “Lean”/“Extra lean”, cooking instructions, recipe, “Tasty”, “Aged”/“Matured”, cooking time, region of origin, “Fresh”, claims indicating specials or value-for-money, red meat classification (animal age and fat class), fat-to-meat ratio, “Juicy”, “Grain-fed” and allergens listed on label. Vermeulen *et al.* (2015) concluded that the labelling information on the majority of the fresh red meat sold at butchers are “generic” with mainly the price and meat cut (and packaging date in many cases) indicated on the product packaging. Labelling information with additional but limited application among the national retail outlets included the following: Claims indicating specials or value for money, unique product brand, classification information related to animal age (“A-grade”), other date information (e.g. use-by date), “Lean”/“Extra lean”, “Low fat”, “Tender”, “Tasty”, “Juicy”, storage instructions at home, cooking suggestions, serving suggestions, “Aged”/“Matured”, “Deboned”, and flavour added (e.g. marinade, spices). Large retailers offered selected brands indicating more advanced labelling information (such as free range, region of origin, feeding practices, animal welfare).

Font-I-Furnols *et al.* (2014) conducted research in the European countries of Spain, France and the United Kingdom to determine the effect of country of origin, feeding system (production system: grain-fed or grass-fed animals) and price on consumers’ purchasing intention for lamb meat. Their findings revealed that the origin of the meat was the most important factor considered by consumers, followed by the type of feeding system and next price. Considering the results of Vermeulen *et al.*’s (2015) research in the South African context, which contradicts the findings by Font-I-Furnols *et al.* (2014), one can truly wonder whether South African consumers care whether selected production process claims and claims of origin are provided on the labelling of pre-packaged red meat, or not. However, one should also bear in mind that emerging South African consumers may experience a stronger need to purchase red meat due to socio-economic empowerment and increasing consumer sophistication, emphasising all the more the importance of understanding the different types of information that could affect consumers’ choice prior to consumption, including *inter alia* price, country of origin, production systems.

2.3 CONSUMERS' DECISION-MAKING PROCESS WITH REGARD TO PRE-PACKAGED FRESH RED MEAT

Consumers continuously make numerous decisions about what products and services to consume (Joubert, Erdis, Brijball, Parumasur & Cant, 2013:124). A decision can be described as a selection of an option from two or more alternative choices (Du Plessis & Du Rand, 2012:211). The consumer decision-making process involves a “sequential and repetitive set of psychological and physical activities”, including need recognition, the search for and processing of information, the evaluation of alternatives, and purchase and post-purchase evaluation (Joubert *et al.*, 2013:124). The act of purchasing is considered an outcome in a particular course of action undertaken by a consumer. To reach this ultimate outcome, the preceding events, including problem recognition, the search for and processing of information, and the evaluation of product alternatives, have to be taken into account (Verbeke, 2000).

Although information about specific consumer product alternatives might be readily available, many other factors play a role when consumers make a purchasing decision. The factors *inter alia* include product assortment, the way in which a product is presented and other in-store stimuli, as well as consumer-related variables, including the consumer's lifestyle, culture, level of product involvement, emotions and attitudes toward specific products (Jansson-Boyd, 2010:131).

The effort consumers put into the decision-making process would depend on the type of product category or purchase, the amount of purchase risk associated with the decision and the difficulty thereof (Solomon, 2011:332; Erasmus, Donoghue & Dobbstein, 2014). Consumers' perceptions of the complexity of products and their subsequent decision-making approaches differ. With habitual decision making, consumers usually do not seek information when a problem is recognised and therefore select a product based on habit. With limited decision making, consumers' internal and external search is very limited and they generally reach decisions based on prior beliefs about products and their attributes (Babin & Harris, 2018:256-257). When consumers engage in extended decision making, they usually engage in extensive internal and external information search to carefully evaluate each alternative in order to reach a satisfactory decision (Hawkins & Mothersbaugh, 2010:498-499; Babin & Harris, 2018:256; Erasmus, Donoghue & Dobbstein, 2014). Expensive products and complex products are usually purchased only after an extended decision-making process had occurred.

Consumers who buy pre-packaged red meat products on a regular basis might find the decision-making process fairly easy as they may purchase these products based on habit or on prior beliefs about products and evaluative criteria. Consumers who purchase pre-packaged red

meat products less frequently might perceive the purchase as risky as they generally have less experience with the products to guide their evaluation of the relevant product attributes when considering purchasing such products. Such consumers will therefore have to take some time and effort in searching for information when purchasing products to reduce their perception of risk. Consumers who are more involved with the products that they purchase tend to continually seek information from external sources, such as family, friend, salespeople, advertising, or the internet, simply because they are interested in a specific product, and tend to spend more on the product category compared to those who are not that involved with the specific product (Doole, Lancaster & Lowe, 2005:34; Hawkins & Mothersbaugh, 2010:533-535; Solomon, 2011:70-71). Consumers who are more involved with pre-packaged red meat products, would probably seek information to be knowledgeable about the nutritional value, health and safety, production processes, or origin of red meat products, to name a few.

Although all of the steps in the decision-making process are important to understand how consumers make decisions, for the purpose of this study, the specific focus is on the search for and the processing of information, and the evaluation of alternatives, as both these steps are fundamental in the consideration and judgement of specific product attributes when making decisions. The evaluation of alternatives implies that consumers evaluate the various alternatives they encounter during the searching and processing of information about alternatives. This means that the searching for and processing of information, and the evaluation of alternatives, occur rather simultaneously (Joubert *et al.*, 2013:128). There is no product or service that consumers will use where decision making is not involved. This is not a simple task as consumers are daily faced with the way products are presented, which involves lifestyle, culture, peer pressure, emotions, social class, amount of choice, in-store stimuli – to mention but a few (Jansson-Boyd, 2010:131).

2.3.1 Information search

Ultimately the decision-making process starts with the recognition of a need (Hawkins & Mothersbaugh, 2010:500; Babin & Harris, 2018:250). When consumers value the end goal, they will engage in search behaviour to satisfy their needs. Consumers could seek information about the number of product alternatives available, the price of the different products, the relevant attributes that should be considered and their relative importance, as well as the performance of each alternative of the attributes (Hawkins & Mothersbaugh, 2010:519; Babin & Harris, 2018:259).

Consumers engage in pre-purchase search activities such as browsing to facilitate them in concluding a decision for a specific problem. This differs from on-going search activities where

consumers have an enduring involvement with the product. Nevertheless they acquire information from internal and/or external sources. Consumers generally perform an internal search before any external search. Consumers search internal when they recall information from memory concerning previous learning experiences with a product, the price paid for an item, etc. The initial internal search generally produces a set of guides or decision constraints that limit and guide the external search. The constraints could be a price range, a set of manufacturers, or “must have” performance criteria, to mention a few (Hawkins & Mothersbaugh, 2010:518).

External searching occurs when consumers consult sources outside their own experience to facilitate decision making, including family, reference groups, or business and marketing activities such as advertisements, in-store promotions and sales staff. Consumers might also consult neutral information sources such as instruction booklets, pamphlets, brochures and product labels (Rousseau, 2003b:119).

Food labels provide information about specific product attributes such as the expiry date (best-before date/ use-by date), ingredient list, nutritional information, health- and nutrition-related claims, country/geographic region of origin, allergen information, logos, identification and address of the manufacturer, quality guarantee, instructions how to use, and number of servings. Food labels act as a valuable external information source for those who follow a rational decision-making process and who need to make informed decisions, for example in terms of the presence or absence of allergens in a product (Prinsloo *et al.* 2012). Food labels are therefore specifically valuable when consumers buy specific food products for the first time or when they are highly involved with products, for example, when the product must meet a special requirement such as dietary requirements due to health concerns, or when products are purchased for their social significance and their potential to reflect the consumer's lifestyle (Prinsloo *et al.*, 2012).

Specific information on labels, such as health-related claims, may persuade consumers who rely on such information to buy a specific product. Unresponsive consumers, however, seem untroubled by food labels and even less by health-related claims or nutritional information because they simply buy what they need, as long as it is economically affordable for them or perhaps merely out of habit. In that case, food labels do not influence consumers' purchasing behaviour. Indifferent consumers may also be aware of food label information but would continue purchasing the product even if the label lacks specific information (Kempen *et al.*, 2011).

As consumers become more familiar and experienced with specific products, they do not necessarily attend to product information every time these products are purchased, and therefore tend to purchase these products routinely or habitually. Labels are extrinsic cues that can assist consumers to infer product quality and form quality expectations, which in turn influence a whole range of attitudes and behaviours related to food purchasing, meal preparation, satisfaction and future purchasing decisions (Brunsø *et al.*, 2002). Labels and/or specific cues on labels can be weighed against other characteristics or attributes during product evaluation in the consumer's decision-making process (Font & Guerrero, 2014). Consumers may also examine the product information indicated on food labels after a product had been used to reduce cognitive dissonance or to confirm certain aspects such as the quality, ingredients or country of manufacture, for purposes of possible re-purchase (Prinsloo *et al.*, 2012).

2.3.2 Evaluation of alternatives

Following the search for and the processing of information, consumers need to consider the potential alternatives to evaluate to facilitate their decision making (Rousseau, 2003b:119). Consumers tend to use two types of information when evaluating alternatives: firstly, a list of brands from which they intend to make their selection, and secondly, the criteria they will use to evaluate the brand. The consideration set (also called the evoked set) refers to the list of brands, or alternatives, that a consumer considers acceptable when making a purchasing decision. The consideration set usually consist of only three to five brands (Schiffman & Kanuk, 2010:488; Babin & Harris, 2018:267-268).

The evaluative criteria refer to typical product features or attributes associated with either the benefits desired by consumers or the cost they must incur when purchasing products (Hawkins & Mothersbaugh, 2010:556-557; Babin & Harris, 2018:267). The criteria that consumers use to judge the alternative products that constitute their evoked sets are usually expressed in terms of important product attributes (Schiffman & Kanuk, 2010:489). The product attributes that consumers use as purchase criteria differ, depending on the type of product category. For example, consumers would possibly use taste, type of main course, type of side dishes, and preparation time when evaluating brands for frozen dinners (Schiffman & Kanuk, 2010:489). Consumers with limited experience of pre-packaged meat products might first engage in an internal search and also in an external search to determine the appropriate features or characteristics (evaluative criteria) required to meet their needs. The evaluative criteria and the importance that consumers assign to them influence brand selection, implying that different consumers judging the same criteria may purchase different brands based on their importance ranking of the criteria.

2.3.2.1 Consideration of extrinsic and intrinsic product attributes

From a rational decision-making perspective, consumers carefully evaluate products based on pre-determined criteria (salient attributes) that would satisfy their needs (Schiffman & Kanuk, 2010:110; Prinsloo *et al.*, 2012:87; Babin & Harris, 2018:254). Products are like bundles of attributes used as cues by consumers to shape cognitions of product quality (Veale, Quester & Karunaratna, 2006; Chocarro, Cortiñas & Elorz, 2009), with quality referring to the overall goodness or badness of some product (Babin & Harris, 2018:379). An intrinsic product cue refers to any product characteristic inherent in the product itself, such as flavour for a soft drink, while an extrinsic cue refers to a product characteristic not fundamental to the product itself but externally attributed to the product, for example, price, brand, place of purchase, country of origin (Teas & Agarwal, 2000; Veale *et al.*, 2006), or product packaging, nutritional information, and expiry date (Kempen *et al.*, 2011). Previous research has shown that consumers vary in their reliance on both intrinsic and extrinsic cues as well as in their ability to accurately assess product cues accurately (Alba, 2000; Kardes, Kim & Lim, 2001; Veale *et al.*, 2006). Extrinsic attributes that are related to the product but not physically part of it, such as its name or the brand image, are also known as image variables. For certain products these image variables may override the consumers' sensory perception of quality (Veale *et al.*, 2006).

Concerning meat products, not only are extrinsic cues such as brand and origin important in consumers' evaluation of meat quality, but also their product-related experience (Chocarro *et al.*, 2009). Extrinsic cues may actually play a secondary role as meat quality evaluation is a skill that is acquired over time (Grunert, 2006). It could be expected that consumers with higher product familiarity (or more experience) use fewer extrinsic cues and more intrinsic cues than consumers with lower product familiarity (Bredahl, 2003). According to Chocarro *et al.* (2009), extrinsic cues like brand and origin are important in consumers' evaluation of meat quality; however, their product-related experience may also have various effects on perceived quality cues (Chocarro *et al.*, 2009).

Quality can be judged when consumers interpret formation or cues about the characteristics of a product while shopping or consuming it (Becker, 2000); evidently consumers appraise the functionality or utility of the product on the basis of their needs. This permits us to distinguish three categories of quality-based product attributes:

- (1) Searching quality (quality in the shop). This category refers to intrinsic and extrinsic product attributes that are cued at the moment when the purchase is made and are important for quality selection.

- (2) Experiencing quality (eating quality). These are intrinsic attributes that become available only when the product is used or consumed, and are important for the consumer's perception of organoleptic quality.
- (3) Credence quality. This category represents both intrinsic and extrinsic attributes that are of concern to the consumer but are not cued in the buying or consumption process. The consumer must therefore rely on information transmitted by the media or by word of mouth, and consumers form quality expectations before purchasing the product, based on various intrinsic (e.g. colour and fat) and extrinsic cues (e.g. brand, price, and country of origin).

It is often difficult to determine which evaluative criteria consumers use when making a particular product/choice decision, as consumers sometimes find it difficult to verbalise these criteria. It is therefore even more problematic to determine the importance that consumers attach to the respective evaluative criteria (Hawkins & Mothersbaugh, 2010:558). Product attributes and benefits are generally compared in terms of their relative importance (such as a preference for organic foods, country of origin or expiry date) based on specific decision rules (Schiffman & Kanuk, 2010:491; Prinsloo *et al.*, 2012:491). Consumers often rely on price as a quality indicator. Price therefore seems to have a positive influence on expected quality: the higher the price, the greater the expected quality (Acebrón & Dopico, 2000:231).

Although consumers may use intrinsic and extrinsic product attributes as evaluative criteria, this study focuses mainly only on the extrinsic evaluative criteria, stemming from the retrieval of knowledge stored in memory about the pre-packaged red meat products, and the gathering of information from external information sources such as product labels. The information that appear on the labels of pre-packaged red meat products sold by food retailers include one or more of the following: unit price (R/kg), total price, country/geographic area of origin, production process claims (e.g. grass-fed, free range, hormone free, antibiotic free), mass (kg), ingredients, brand name, best-before date, and sell-by date (Vermeulen *et al.*, 2015). Labelling is an important cue for consumers as it helps to quickly communicate information about a product or production process (Weinrich & Spiller, 2015:1) in the form of extrinsic product attributes that can be used as evaluative criteria (Kempen *et al.*, 2011). For the purpose of this study extrinsic product attributes include: price, price per kg, sell-by date, use-by date (expiry date), selected process claims, e.g. hormone free, free range, grass-fed, antibiotic free, the claim of geographic origin (Karoo Lamb), and country of origin.

2.4 CONSUMER KNOWLEDGE

Knowledge, meanings and beliefs about products are stored in consumers' memories. Consumers will only be able to comprehend specific consumer "messages" such as the claims printed on the labels of food products when they have knowledge about specific food products and food product attributes. For example, a certain amount of knowledge about nutrition is needed to facilitate consumers to interpret and understand the many health claims made by food companies (Peter & Olson, 2010:50).

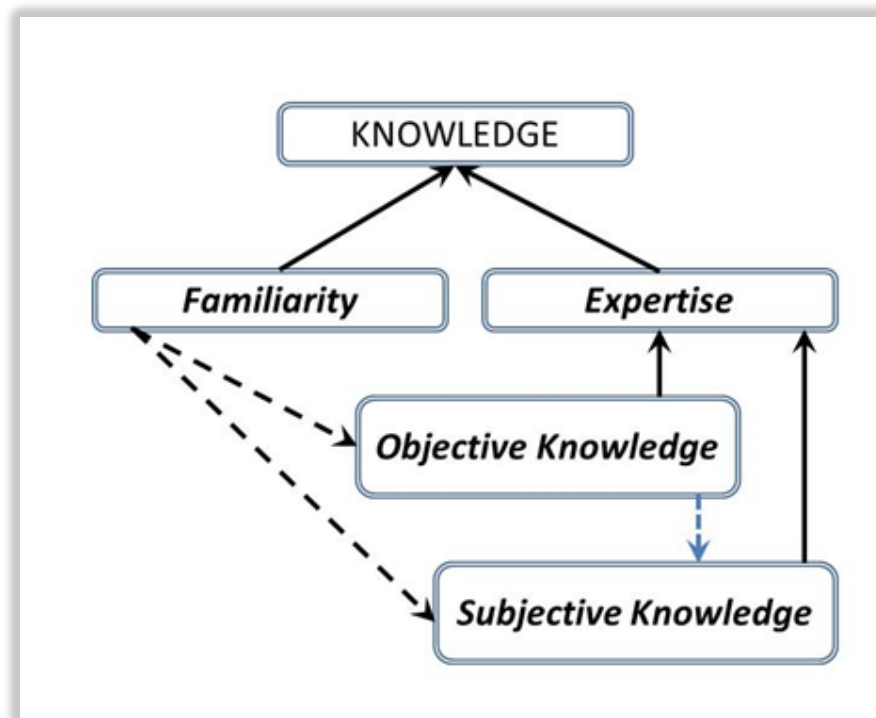


FIGURE 2.3: RELATIONSHIPS BETWEEN KNOWLEDGE COMPONENTS (Chocarro, Cortiñas & Elorz, 2009)

Product knowledge is acquired through familiarity and consumer expertise (Alba, 2000; Chocarro *et al.*, 2009), as indicated in Figure 2.3. Expertise, acquired through familiarity, refers to the ability to accomplish product-related tasks more successfully and to deal with more complex problems (Alba & Hutchinson, 1987). Expertise could lead to the search for new information due to the fact that product familiarity reduces the cost of seeking information and increases awareness of information that is readily available (Alba & Hutchinson, 1987). Researchers suggest that expertise represents the result of two separate dimensions, namely subjective and objective knowledge (Raju, Lonial & Mangold, 1995; Chocarro *et al.*, 2009).

Subjective knowledge represents the individual's own perception of what he/she knows about a specific subject and is dependent on pre-existing knowledge that is primarily accumulated by

prior experience, while objective knowledge represents the actual stored information and its organisation in the memory (Banović Fontes, Barreira, & Grunert., 2012). Subjective knowledge therefore refers to what the consumer thinks he/she knows about a topic, while objective knowledge constitutes what the individual actually knows about a subject (Banović *et al.*, 2012) In line with the conceptualisation of subjective and objective knowledge, overconfident consumers generally think they know more about a topic than they actually do (Alba & Hutchinson, 2000). According to Dodd, Laverie, Wilcox, & Duhan, (2005), usage experience forms the basis for subjective and objective knowledge. Impersonal sources of information, such as guides, reviews and advertising, are used to obtain high levels of objective knowledge when making purchasing decisions, while high levels of subjective knowledge are positively related to impersonal sources, own preferences, as well as using personal sources such as friends and family (Dodd *et al.*, 2005:3).

The influence of knowledge on decision making, and the capacity of this variable, has been an issue in marketing literature for a very long time (House, Lusk, Jaeger, Trail, Moore, Valli, Morrow Yee, 2004). Although the concepts of subjective and objective knowledge are two different things, they are both partially the result of experience (Flynn & Goldsmith, 1999:57). Several studies have found that subjective and objective knowledge must both be assessed for a complete understanding of the role that knowledge plays in consumer behaviour (Brucks, 1985; Flynn & Goldsmith; 1999:58; Chocarro *et al.*, 2009). Therefore, for the purpose of this study the focus is on both subjective and objective knowledge.

According to Brucks (1985), it is easier to measure subjective knowledge than objective knowledge. The evidence available suggests that subjective knowledge is an individual difference variable that is valuable for predicting some aspects of consumer behaviour, and although related to objective knowledge it should be measured separately. Subjective knowledge is usually measured on a self-report scale where respondents need to assess how much they know about a specific topic. House *et al.* (2004) used a single self-report item to measure subjective knowledge of genetic modification in food production. Respondents were required to respond to the following question: "How knowledgeable would you say you are about the facts and issues concerning genetic modification in food production?" The nine-point Likert scale was anchored by "Not at all knowledgeable" and "Extremely knowledgeable". Flynn and Goldsmith (1999), using fashion clothing as one of the product categories tested, developed and validated a short self-reported measure of subjective knowledge. The items in the final scale included the following: "I know pretty much about *fashion clothing*; I do not feel very knowledgeable about *fashions*; Among my circle of friends, I'm one of the 'experts' on *fashion clothing*; Compared to most other people, I know less about *fashion clothing*; When it comes to *fashion*, I really don't know a lot." The seven-point semantic differential items were

anchored by “Strongly agree” and “Strongly disagree”. Dodd *et al.* (2005) applied Flynn and Goldsmith’s subjective knowledge scale to measure respondents’ subjective knowledge about wine, demonstrating that Flynn and Goldsmith’s original measuring scale can be adapted to suit the context of the specific subject area.

Measuring objective knowledge could be a very challenging task as an objective knowledge test has to be developed with specific application to the domain under investigation (Flynn & Goldsmith, 1999, Kolyesnikova, Laverie, Duhan, Wilcox, & Dodd, 2010). Objective knowledge is usually measured via testing procedures under the supervision of an impartial third party, whereas subjective knowledge can be measured based on self-assessment (Lee & Lee, 2009). True knowledge of products can be measured by objective knowledge measures. Obviously, measuring objective knowledge can never be entirely objective in itself, as such measurements would depend on some form of feedback from the individual about his/her knowledge (Brucks, 1985; House *et al.*, 2004; Donoghue *et al.*, 2016). House *et al.* (2004) measured respondents’ objective knowledge about genetic modification in food production by developing four true/false questions concerning the topic. Dodd *et al.* (2005) measured objective wine knowledge by asking respondents 10 questions with four multiple-choice answers to choose from.

In the South African context, Donoghue *et al.* (2016) differentiated between subjective consumerism knowledge and objective consumerism knowledge, and by extension the measures employed. In addition, they explored the relationship between demographic characteristics and levels of subjective and objective consumerism knowledge as well as the combined effect of the two types of knowledge on consumer complaint behaviour. Subjective consumerism knowledge was measured on a 5-point Likert-type scale with 5 items, anchored by 1 (Definitely agree) and 5 (Definitely disagree). The subjective knowledge items were self-developed and included: “Compared to other consumers”: “I am well informed of my consumer rights”, “I know the various laws and regulations protecting my consumer rights”, “I know what to write in a letter of complaint to resolve my problems with consumer products and services that I am not satisfied with”, and “I know the exchange and return policies of the stores where I purchase products.” Donoghue *et al.* (2016) formulated the items by requesting respondents to compare themselves with other consumers concerning the specific knowledge items to avoid leading or biased items. The five items showed good internal consistency (Cronbach alpha coefficient = 0,85). The 18-item objective test of consumerism consisted of consumer protection scenarios and a few direct statements pertaining to agreements/contracts, marketing/advertising, the role of government agencies in enforcing laws to protect consumers, consumer protection organisations/watchdogs, retailer service delivery, service pre-authorisation, warranty/guarantee and the right to information. Respondents could answer by indicating yes, no, or unsure. The findings revealed that the respondents had a reasonable level

of subjective consumerism knowledge relative to a low level of objective consumerism knowledge. No significant relationship was found between subjective consumerism knowledge and demographic characteristics. However, the factors of race, gender and level of income were related to objective knowledge. Donoghue *et al.* (2016) suggested that their approach to measuring knowledge of consumerism could possibly be applied in other emerging contexts where consumers generally lack awareness of consumer protection.

In light of the above discussion it is clear that the measurement of consumer knowledge is well developed. Researchers suggest that a distinction should be made between subjective and objective knowledge to fully comprehend the influence of knowledge on consumer behaviour (Dodd *et al.*, 2005; Chocarro *et al.*, 2009). For the purpose of this study, the focus is on consumers' subjective and objective knowledge of specific production process claims and the claim of geographic origin (Karoo Lamb) concerning pre-packaged fresh lamb or mutton. Consumers' subjective knowledge about the respective claims would reflect what they think they know about these claims, while their objective knowledge would point to what they actually know about these claims. Since both subjective and objective knowledge may have different effects on consumer behaviour, the researcher proposes that the subjective and objective knowledge may have different effects on consumers' consideration of evaluative criteria when purchasing lamb or mutton at food retailers.

2.5 THEORETICAL PERSPECTIVE

Consumer researchers study the decision-making process from three perspectives: the rational decision-making perspective, the experiential decision-making perspective, and the behavioural influence perspective (Babin & Harris, 2018:254). It is important to note that these perspectives represent different theoretical frameworks from which consumer decision making can be viewed, and that most consumer decisions can be studied from a combination of these perspectives (Babin & Harris, 2018:253). Some researchers argue that consumers vary in their cognitive processing style. Some consumers rely on a rational system of cognition that processes information analytically, following a specific sequence, by using logic – implying a stepwise or fragmented approach to decision making, while others rely on an experiential system of cognition that utilises information more holistically and in parallel, i.e. decision making based on synergy and continuity (Solomon, 2011:334).

In the context of the rational decision-making perspective, consumers diligently gather product information, carefully compare various brands in terms of salient attributes and eventually conclude informed purchasing decisions about the specific brands to buy. It involves a careful

consideration of product alternatives and assumes that a consumer possesses the cognitive ability to identify the expected value of a purchase (Babin & Harris, 2018:254). This process would depend on consumers' prior experience and whether the individual considers it a high- or low-involvement activity (Mowen, 1988 in Sonnenberg, Erasmus & Donoghue, 2011). However, consumers do not follow this process in all cases and often make purchasing decisions without deliberate thought processes (Solomon, 2011:334) by, for example, basing their decision making on emotions or the environmental influences associated with the product or with the consumption processes, respectively pointing to the experiential decision-making perspective and the behavioural influence decision-making perspective (Solomon, 2011:334; Babin & Harris, 2018:253).

While cognition refers to the psychological processes that consumers experience, behaviour represents the actions they perform (Joubert *et al.*, 2013:122). In making decisions, consumers undergo cognitive processes, to ultimately engage in behavioural action, i.e. to purchase, or not to purchase, a product. Consumer decision making is influenced by a number of individual variables, including needs, motives, perception, learning, attitudes and lifestyle, and environmental variables, including culture, social influences, reference group and family. The individual factors control internal thought processes, while the external factors direct the internal thought processes. Other factors such as marketing variables may also influence consumers' cognitions and behaviours (Joubert *et al.*, 2013:125).

The cognitive processes involved in rational consumer decision making include problem recognition, information search, a rational pre-purchase evaluation of purchase alternatives, the actual purchasing decision, as well as a post-purchase evaluation (Loibl, Cho, Diekmann, & Batte, 2009). Verbeke (2000) emphasises the importance of the "hierarchy of effects" referring to the different mental stages that consumers go through when making buying decisions before purchasing a product. The cognitive perspective assumes that consumers have the cognitive ability to collect and process relevant information in the marketplace, and to process and comprehend information; to consider information by compiling an evoked set of potentially suitable and manageable product options and brands; to choose between alternatives; and to recognise and comprehend marketplace tactics and the ability to confidently cope with them (Loibl *et al.*, 2009; Erasmus, Donoghue & Fletcher, 2015).

A consumer's cognitive involvement during a purchasing decision depends on how complex the purchasing decision is perceived to be. It seems that the more complex a purchasing decision, the higher an individual's cognitive involvement, and the more extensive the rational deliberation (Loibl *et al.*, 2009; Hawkins & Mothersbaugh, 2010:554). Consumers who are less experienced may find certain consumer decisions very challenging, while the opposite may be true for

individuals who possess the cognitive ability to comprehend and interpret intricate product cues (Erasmus *et al.*, 2015).

Since some consumers have limited capacity for mental work, they subconsciously use heuristics (mental shortcuts or simplifying strategies) to reduce the effort involved in decision making. Consumers tend to make use of heuristics when they are not particularly interested in the product and when they are under time pressure. In such low involvement situations, they are more likely to be convinced to purchase products by “superficial attributes” such as the brand name. However, the opposite is true when consumers are highly involved with a product category or brand. Such consumers are more likely to engage in an in-depth, data-driven process of evaluation, implying that consumers are making more rational decisions (Jansson-Boyd, 2010:139). Consumers’ decision making is often affected by directly comparing particular attributes or features of products if they are remembered or if the products are present to facilitate the comparison. The accessibility-diagnostics model proposes that different types of salient stimuli, whether accessible from memory or diagnostic, can affect the cues that one thinks about without making much cognitive effort (Feldman & Lynch, 1988; Jansson-Boyd, 2010:139). This cognitively based model originated in the field of social cognition to shed some light on the kind of information consumers might make use of when making decisions, i.e. the model explains why specific product attributes are more likely to be used to make judgements about products (Jansson-Boyd, 2010:145). The accessibility aspect of the model refers to how easily a piece of information can be retrieved from memory, while diagnostics has to do with the perceived relevance of the piece of information or cue for choosing among options, and is affected by how knowledgeable a consumer is as well as the properties of the situation (Saini, 2015:47-48).

2.6 CONCEPTUAL FRAMEWORK

In light of the literature review on consumerism, consumer decision-making, consumer knowledge and the theoretical perspective, this study proposes a schematic conceptual framework of the relationship between consumers’ subjective and objective knowledge about selected production process claims and the claim of geographic origin, and their consideration of the importance of selected evaluative criteria when purchasing pre-packaged lamb or mutton at large retailers. The conceptual framework depicts all of the important concepts of this study as well as possible relationships between these concepts. The numbers used in the conceptual framework correspond with the objectives of the study. (See Figure 2.4).

Although various factors, including psychological (individual), sensory (product-specific), and marketing (environmental) factors, may determine consumers' decisions to purchase fresh red meat products from retailers (Font-i-Furnols & Guerrero, 2014), this study focuses on the relationship between consumers' knowledge of specific production process claims and the Karoo Lamb claim of geographic origin on the one hand, and their consideration of the importance of selected evaluation criteria when purchasing pre-packaged fresh lamb or mutton. It also determines whether consumers are willing to pay a premium for selected production process claims and the claim of geographic origin. Figure 2.4 distinguishes between consumers' subjective and objective knowledge of production process claims and the Karoo Lamb claim of geographic origin. Subjective knowledge refers to what consumers think they know about these claims, while objective knowledge refers to what they actually know about such claims (Chocarro *et al.*, 2009).

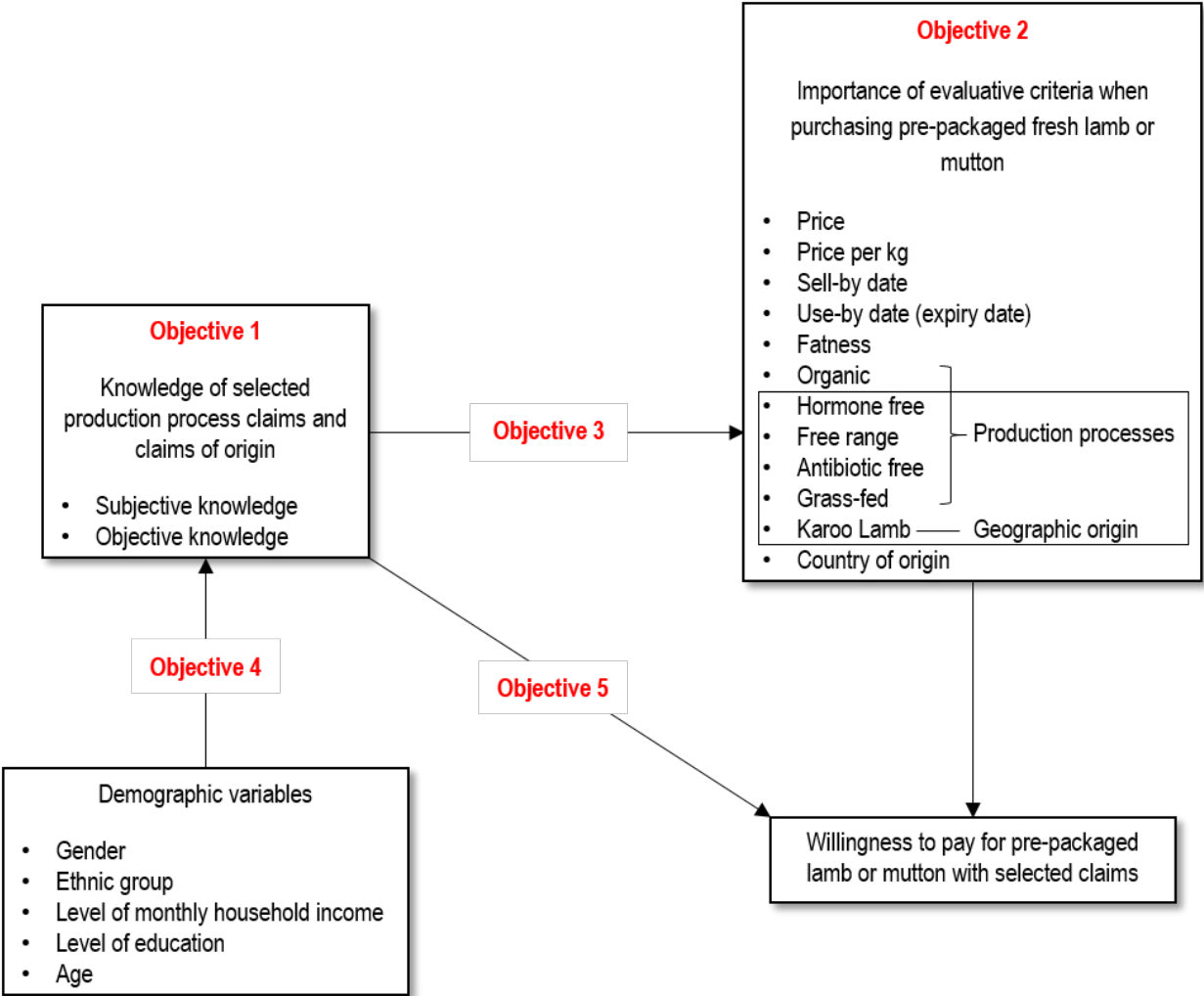


FIGURE 2.4: CONCEPTUAL FRAMEWORK OF THIS STUDY

Consumers consider specific evaluative criteria when purchasing products (Hawkins & Mothersbaugh, 2010:557). Evaluative criteria can differ in type, number and importance. The

type of evaluative criteria a consumer uses in a purchasing decision varies from tangible cost and performance features to intangible factors such as taste, prestige, feelings generated and brand image. For the purpose of the study, the focus is on consumers' consideration of the importance of selected evaluative criteria (extrinsic product attributes) for pre-packaged fresh mutton or lamb based on the actual label information provided by large retailers. For the purpose of this study this information includes: price, price per kg, sell-by date, use-by date (expiry date), fatness, selected process claims, i.e. hormone free, free range, grass-fed, antibiotic free, the claim of geographic origin (Karoo Lamb), and country of origin.

A consumer's knowledge could influence the consideration of evaluative criteria when purchasing products (Chocarro *et al.*, 2009). Previous research has shown that specific demographic characteristics are related to the consumers' subjective and objective knowledge of specific knowledge domains, e.g. knowledge of genetic modification in food production (House *et al.*, 2004), knowledge of pre-cycling and recycling issues (Ellen, 1994), and consumerism knowledge (Donoghue *et al.*, 2016). Hence the conceptual framework also portrays the possible relationship between demographic characteristics and consumers' subjective and objective knowledge of specific production process claims and claims of origin. As consumers' subjective and objective knowledge of specific products are related to their willingness to purchase and use these products (House *et al.*, 2004), this study also explores the relationship between consumers' knowledge and their willingness to pay more for pre-packaged lamb or mutton with specific production process claims and the claim of geographic origin.

2.7 RESEARCH AIM AND OBJECTIVES

2.7.1 Research aim

The aim of this study is to explore and describe the relationship between consumers' subjective and objective knowledge of selected production process claims and claims of origin, and their consideration of the importance of specific evaluative criteria when purchasing pre-packaged fresh mutton and lamb at large food retailers. In addition, the relationship between demographic characteristics and consumers' subjective and objective knowledge will be explored. Consumers' willingness to pay a premium for fresh lamb or mutton products featuring selected claims will also be explored.

For the purpose of this study, the production process claims refer to grass-fed, free range, antibiotic free, hormone free; and the claim of origin refers to Karoo Lamb.

2.7.2 Research objectives

Objective 1

To explore and describe consumers' knowledge of selected production process claims and the claim of geographic origin when purchasing pre-packaged fresh lamb or mutton.

Sub-objective 1.1

To explore and describe consumers' subjective knowledge of selected production process claims and the claim of geographic origin associated with pre-packaged fresh lamb or mutton.

Sub-objective 1.2

To explore and describe consumers' objective knowledge of selected production process claims and the claim of geographic origin associated with pre-packaged fresh lamb or mutton

Objective 2

To explore and describe consumers' consideration of the importance of selected evaluative criteria when purchasing pre-packaged fresh lamb or mutton.

Objective 3

To explore and describe the relationship between consumers' knowledge of selected production process claims and the claim of geographic origin, and their consideration of the importance of selected evaluative criteria when purchasing pre-packaged fresh lamb or mutton.

Sub-objective 3.1

To explore and describe the relationship between consumers' subjective knowledge of selected production process claims and the claim of geographic origin, and the importance of selected evaluative criteria when purchasing pre-packaged fresh lamb or mutton.

Sub-objective 3.2

To explore and describe the relationship between consumers' objective knowledge of selected production process claims and the claim of geographic origin, and the importance of selected evaluative criteria when purchasing pre-packaged fresh lamb or mutton.

Objective 4

To explore and describe the relationship between demographic characteristics and consumers' knowledge of selected production process claims and the claim of geographic origin associated with pre-packaged fresh lamb or mutton.

Sub-objective 4.1

To explore and describe the relationship between demographic characteristics and consumers' subjective knowledge of selected production process claims and the claim of geographic origin associated with pre-packaged fresh lamb or mutton.

Sub-objective 4.2

To explore and describe the relationship between demographic characteristics and consumers' objective knowledge of selected production process claims and the claim of geographic origin associated with pre-packaged fresh lamb or mutton.

Objective 5

To explore and describe the relationship between consumers' knowledge of selected production process claims and the claim of geographic origin and their willingness to pay a premium for fresh lamb or mutton featuring selected claims.

Sub-objective 5.1

To explore and describe the relationship between consumer' subjective knowledge of selected production process claims and the claim of geographic origin and their willingness to pay a premium for fresh lamb or mutton featuring selected claims.

Sub-objective 5.2

To explore and describe the relationship between consumers' objective knowledge of selected production process claims and the claim of geographic origin and their willingness to pay a premium for fresh lamb or mutton featuring selected claims

2.8 CONCLUSION

This chapter has focused on consumerism with specific reference to consumer protection. The advancement of consumerism has been discussed while the difference between consumerism in developed countries versus developing countries was highlighted. The implementation of the CPA in 2011 was a milestone in South Africa when consumers for the first time had the assurance that their rights as consumers are legally protected. The disclosure of correct information on the labelling of fresh meat was highlighted, and also the specific control measures put in place to protect consumers from fraudulent claims. The specific production process claims and the claim of geographic origin (Karoo Lamb) were conceptualised and discussed.

This chapter also explained red meat consumers' decision-making process in terms of the information search and the evaluation of alternatives. Consumers' product knowledge can be distinguished in terms of the subjective and objective knowledge dimensions. The rational perspective to consumer decision making acknowledges the role of the cognitive aspect pertaining to decision making. Based on the theoretical background and the theoretical perspective, the conceptual framework was provided and explained, and the aim and objectives of the study were stated.

CHAPTER 3

Research design and methodology

3.1 INTRODUCTION

Research design refers to a set of guidelines and instructions to be followed in addressing the research problem (Mouton, 2001:56), while the research methodology focuses on the process followed in the research as well as the kind of tools and procedures used (Mouton, 2001:56). The research methodology section of this chapter provides an explanation of the sampling plan in terms of the unit of analysis, the sampling technique and the sample size; the online questionnaire as the measuring instrument; the collection of primary data; the coding and capturing of the data; the operationalisation of the study according to the objectives of this study; the statistical methods implemented to analyse the data; the quality of the data in terms of validity and reliability; and finally, ethical issues.

3.2 RESEARCH DESIGN

A cross-sectional survey design involving a self-administered online questionnaire was used to shed some light on the link between consumers' knowledge of selected production process claims and the claim of geographic origin, and their consideration of evaluative criteria when purchasing pre-packaged fresh lamb or mutton. Survey research is usually conducted to acquire information about one or more groups of people, including their characteristics, opinions, attitudes and previous experience (Leedy & Ormrod, 2014:195). The cross-sectional time dimension of the research implies that the data was collected at a specific point in time (Neuman, 2007:17; McDaniel & Gates, 2013:68, 117; Du Plooy-Cilliers & Cronje, 2014:149). The research design can also be classified as empirical using primary data (Mouton, 2001:152). The study was quantitative in nature with the aim to explore and describe the phenomenon of interest. Quantitative research relies on the measurement and analysis of data by using specific measuring instruments, and in the case of this study, specific scales and descriptive and inferential statistical analysis procedures (Grosser, 2016:247). Exploratory research is usually conducted when not much previous research has been done on a specific subject; such research is therefore conducted to obtain new insights, to identify new concepts and/or to develop hypotheses (Babbie & Mouton, 1998:79-80) The purpose of descriptive research is to

describe the characteristic of phenomena, relations between variables or relationships between phenomena as accurately as possible (Davis, 2014:75).

3.3 METHODOLOGY

3.3.1 Sampling plan

The unit of analysis for this study was consumers aged 18 years and older, who resided in major urban areas across South Africa, irrespective of their gender or race. To obtain a meaningful sample, respondents needed to purchase pre-packaged fresh lamb or mutton at food retailers such as Checkers, Spar, Woolworths or Pick n Pay. For inclusion in the study, respondents had to purchase pre-packaged fresh lamb or mutton at food retailers.

An independent research company, Consulta Research PTY, was approached to recruit respondents to participate in an online survey. Consulta Research's own community, Consulta Panel, represents members from South Africa's broad, multi-cultural nation with people from every age group, background, ethnicity and income level, that continue to sign up to take part in a variety of survey research initiatives. The Consulta Panel Members are dedicated market survey participants and do so of their own free will, for the opportunity to contribute to the South African consumer market (<https://www.consulta.co.za/solutions/community>). Respondents were initially recruited in Tshwane. However, slow response rates necessitated expansion to other urban areas across South Africa, including Ekurhuleni, Johannesburg, Cape Town and Durban to attract consumers who have ample exposure to food retailers.

Due to time and monetary constraints, non-random convenience sampling was used, posing a limitation in terms of the generalisability of the data. The sample size was set at 350 respondents due to time and monetary constraints; however, the number of respondents allowed the researchers the opportunity to perform the relevant statistical tests.

3.3.2 Measuring instrument

A multi-sectioned, structured self-administered online questionnaire was used to collect data. The questionnaire was compiled by the researcher, based on the literature review, and taking into consideration the methodologies for studying subjective and objective knowledge pertaining to specific product categories or knowledge domains. Consulta Research converted the paper-based questionnaire into a web-based format using specific software to facilitate the coding of responses.

The questionnaire started with a cover page that stated the purpose of the research, and indicated that the questionnaire would take only 15 minutes to complete. Although not formally stated in the online questionnaire, all registered online panel members' confidentiality was ensured as Consulta Research pledges not to disclose personal information or contact details of registered online respondents to any third party (<https://www.consultapanel.co.za/-community.aspx>). The online questionnaire format differed from the paper-based questionnaire format to facilitate the online completion of the questionnaire. For the purpose of this research, the format of the pre-coded paper-based questionnaire is discussed as the online questionnaire was designed not to reveal the pre-coding. However, it should be noted that the operationalisation of the measures were based on the paper-based questionnaire containing the variable numbers, hence both the online and the paper-based questionnaires are attached. (See Addendum A for the online questionnaire without variable numbers, and Addendum B for the paper-based cover letter and questionnaire with variable numbers.)

The online questionnaire was structured in five sections, and started with two screening questions to determine whether the respondents purchased pre-packaged lamb/mutton at least once a month and whether they purchase it at food retailers such as Checkers, Spar, Woolworths or Pick n Pay (excluding independent butcheries). Only respondents who indicated that they purchase lamb mutton at least once a month at food retailers could participate in the survey. The online questionnaire did not distinguish between the various sections by means of headings. Therefore, for the purpose of the discussion, mock headings are provided.

Section A related to questions indicating how frequently and at which retailers they purchased fresh pre-packaged lamb or mutton, how often, and whether they read meat labels, their particular reasons for reading labels if applicable, and specifically who usually did the meat shopping in the house to facilitate memory recall.

Section B measured respondents' subjective knowledge of selected production process claims, namely grass-fed, free range, antibiotic free, hormone free; and the claim of geographic origin, i.e. Karoo Lamb, on a 5-point Likert-type scale with five items, anchored with 1 ("Strongly disagree") and 5 ("Strongly agree"). The five subjective knowledge items for each knowledge test were based on Flynn and Goldsmith's (1999) short, reliable and valid self-report measure of subjective knowledge that is applicable to a variety of data collection methods and subject areas.

Section C measured the respondents' objective knowledge of production process claims and the claim of geographic origin by a series of true/false questions that was self-developed based

on theory pertaining to the specific claims. Objective knowledge pertaining to country of origin and to region of origin was also measured.

Section D measured the importance associated with selected evaluative criteria based on label information with a 5-point Likert-type scale, anchored with 1 (“Not at all important”) and 5 (“Extremely important”). These criteria included the following: price, unit price (R/kg), sell-by date, use-by date, organic, free range, hormone free, antibiotic free, Karoo Lamb, country of origin, and fatness. Respondents were asked to rank the four most important and the three least important evaluative criteria. Respondents were also asked to indicate how confident they were about the trustworthiness of specific label information on pre-packaged lamb or mutton; the responses were anchored with 1 (“Not confident at all”) and 5 (“Very confident”). These criteria included sell-by date, nutritional information, “hormone free”, “free range”, “antibiotic free”, “use-by date”, “Karoo lamb” and country of origin. Respondents had to indicate whether they were willing to pay more for pre-packaged lamb or mutton if the animal was grass-fed, roamed freely, was never given hormones, was never given routine antibiotics, or was raised in the Karoo region, using a 5-point Likert-type agreement scale anchored with 1 (“Strongly disagree”) and 5 (“Strongly agree”).

Section E measured respondents’ demographic information pertaining to gender, age, level of monthly household income, level of education, residential area and ethnic group.

It should be noted that for the purpose of this study, questions not directly pertaining to the objectives of this study, were not analysed.

The online questionnaire was pre-tested on five employees at Consulta Research who had similar demographic characteristics to the respondents who ultimately took part in the study, in order to identify ambiguous wording and online questionnaire design problems that could result in the misinterpretation of the questions. The questionnaire was also scrutinised by experts from the Department of Consumer Science and reviewers of the University of Pretoria Research and Ethics committee

3.3.3 Data collection

The online questionnaire was distributed to 1 200 Consulta panel members across major urban areas in South Africa in January 2016. Respondents had to indicate whether they purchased pre-packaged lamb/mutton at least one a month at a food retailer, with only respondents indicating yes qualifying to continue with the completion of the questionnaire. A total number of 355 respondents participated in the study.

3.3.4 Coding and capturing the data

The coding of data is an essential element and should be done in such a format that it lends itself to data analysis (Salkind, 2012:227). Consulta Research used specific software in designing the online questionnaire to facilitate the coding of the responses.

3.4 DATA ANALYSIS

A statistician of the Department of Statistics (at the University of Pretoria) was consulted to assist with the descriptive and inferential analysis of the data. Descriptive and inferential statistics were used to analyse the data. Descriptive analysis includes the presentation of data by means of numerical measures such as the mean, standard deviation and graphic descriptions (i.e. graphs and tables) (Hair, Black, Babin, Anderson, & Tatham, 2006). Inferential statistics including ANOVA with Post-hoc LSD test were used to draw conclusions (Walliman, 2011:412-413).

3.5 OPERATIONALISATION

Table 3.1 depicts the objectives, dimensions, measurement of scale items, variable numbers, and the statistical methods used in the study.

TABLE 3.1 OPERATIONALISATION

Objectives	Concepts	Dimensions	Measurement of scale items	Variables*	Statistical analysis
Objective 1: To explore and describe consumers' knowledge of selected production process claims and the claim of geographic origin when purchasing pre-packaged fresh lamb or mutton					
Sub-objective 1.1 To explore and describe consumers' subjective knowledge of selected production process claims and the claim of geographic origin associated with pre-packaged fresh lamb or mutton	Knowledge of selected claims	Subjective knowledge: Grass-fed Free range Antibiotic free Hormone free Karoo lamb	Flynn and Goldsmith's (1999) 5-point Likert-type agreement subjective knowledge scale: I know pretty much about ... I do not feel very knowledgeable about ... Among my circle of friends, I am one of the experts on ... Compared to most other people, I know less about When it comes to ... I really do not know a lot	Grass-fed V13.1a – V13.1e Free range V13.2a – V13.2e Antibiotic free V13.3a – V13.3e Hormone free V13.4a – V13.4e Karoo lamb V13.5a – V13.5a	Descriptive statistics: means frequencies Inferential statistics: Cronbach's alpha
Sub-objective 1.2 To explore and describe consumers' objective knowledge of selected production process claims and the claim of geographic origin associated with pre-packaged fresh lamb or mutton		Objective knowledge: Grass-fed Free range Antibiotic free Hormone free Karoo lamb	True/False questions, self-developed	Grass-fed V14.1a – V14.1c Free range V14.2a – V14.2d Antibiotic free V14.3a – V14.3b Hormone free V14.4a – V14.4b Country of origin V14.5a Geographic region V14.6a Karoo lamb V14.7a – V14.7e	Descriptive statistics: means frequencies
Objective 2: To explore and describe consumers' consideration of the importance of selected evaluative criteria when purchasing pre-packaged fresh lamb or mutton					
To explore and describe consumers' consideration of the importance of selected evaluative criteria when purchasing pre-packaged fresh lamb or mutton	Evaluative criteria	Hormone free Free range Antibiotic free Sell-by date Price per kg Organic Country of origin Use-by date Price Fatness Geographic region (Karoo lamb)	5-point Likert-type importance rating scale, self-developed Ranking of criteria: Ranking from most important (1) to fourth least important (4). Ranking from first least important (1) to third least important (3).	V15.1 – V15.11 V16.1 – V16.11 V17.1 – V17.11	Descriptive statistics: means frequencies

TABLE 3.1 OPERATIONALISATION – Continued

Objectives	Concepts	Dimensions	Measurement of scale items	Variables*	Statistical analysis
Objective 3: To explore and describe the relationship between consumers' knowledge of selected production process claims and the claim of geographic origin, and their consideration of the importance of selected evaluative criteria when purchasing pre-packaged fresh lamb or mutton					
Sub-objective 3.1 To explore and describe the relationship between consumers' subjective knowledge of selected production process claims and the claim of geographic origin, and the importance of selected evaluative criteria when purchasing pre-packaged fresh lamb or mutton	Knowledge of selected claims Evaluative criteria	Subjective knowledge (same as objective 1.1) Same as objective 2	Flynn and Goldsmith's (1999) 5-point Likert-type agreement subjective knowledge scale (same as objective 1.1)	Grass-fed V13.1a – V13.1e Free range V13.2a – V13.2e Antibiotic free V13.3a – V13.3e Hormone free V13.4a – V13.4e Karoo lamb V13.5a – V13.5a V15.1 – V15.11	ANOVA
Sub-objective 3.2 To explore and describe the relationship between consumers' objective knowledge of selected production process claims and the claim of geographic origin, and the importance of selected evaluative criteria when purchasing pre-packaged fresh lamb or mutton	Knowledge of selected claims Evaluative criteria	Objective knowledge: (same as objective 1.2) Same as objective 2	True/False questions, self-developed 5-point Likert-type importance scale	Grass-fed V14.1a – V14.1c Free range V14.2a – V14.2d Antibiotic free V14.3a – V14.3b Hormone free V14.4a – V14.4b Country of origin V14.5a Geographic region V14.6a Karoo lamb V14.7a – V14 V15.1 – V15.11	ANOVA
Objective 4: To explore and describe the relationship between demographic characteristics and consumers' knowledge of selected production process claims and the claim of geographic origin associated with pre-packaged fresh lamb or mutton					
Sub-objective 4.1 To explore and describe the relationship between demographic characteristics and consumers' subjective knowledge of selected production process claims and the claim of geographic origin associated with pre-packaged fresh lamb or mutton	Demographics Knowledge of selected claims	Gender Age Level of education Household income Population group Subjective knowledge (same as objective 1.1)	 Flynn and Goldsmith's (1999) 5-point Likert-type agreement subjective knowledge scale (same as objective 1.1)	Gender V1 Age V2 Level of education V3 Household income V4 Population group V5 Grass-fed V13.1a – V13.1e Free range V13.2a – V13.2e Antibiotic free V13.3a – V13.3e Hormone free V13.4a – V14.4a Karoo lamb V13.5a – V13.5e	ANOVA

TABLE 3.1 OPERATIONALISATION – Continued

Objectives	Concepts	Dimensions	Measurement of scale items	Variables*	Statistical analysis
<p>Sub-objective 4.2</p> <p>To explore and describe the relationship between demographic characteristics and consumers' objective knowledge of selected production process claims and the claim of geographic origin associated with pre-packaged fresh lamb or mutton</p>	<p>Demographics</p> <p>Knowledge of selected claims</p>	<p>Gender</p> <p>Age</p> <p>Level of education</p> <p>Household income</p> <p>Population group</p> <p>Objective knowledge: (same as objective 1.2)</p>	 <p>True/False questions, self-developed</p>	<p>Gender V1</p> <p>Age V2</p> <p>Level of education V3</p> <p>Household income V4</p> <p>Population group V5</p> <p>Grass-fed V14.1a – V14.1c</p> <p>Free range V14.2a – V14.2d</p> <p>Antibiotic free V14.3a – V14.3b</p> <p>Hormone free V14.4a – V14.4b</p> <p>Country of origin V14.5a</p> <p>Geographic region V14.6a</p> <p>Karoo lamb V14.7a – V14</p>	<p>ANOVA</p>
<p>Objective 5: To explore and describe the relationship between consumers' knowledge of selected production process claims and the claim of geographic origin and their willingness to pay a premium for fresh lamb or mutton featuring selected claims</p>					
<p>Sub-objective 5.1</p> <p>To explore and describe the relationship between consumer' subjective knowledge of selected production process claims and the claim of geographic origin and their willingness to pay a premium for fresh lamb or mutton featuring selected claims.</p>	<p>Knowledge of selected claims</p> <p>Willingness to pay more</p>	<p>Subjective knowledge (same as objective 1.1)</p>	<p>Flynn and Goldsmith's (1999) 5-point Likert-type agreement subjective knowledge scale (same as objective 1.1)</p> <p>5-point Likert-type agreement scale, self-developed</p>	<p>Grass-fed V13.1a – V13.1e</p> <p>Free range V13.2a – V13.2e</p> <p>Antibiotic free V13.3a – V13.3e</p> <p>Hormone free V13.4a – V13.4e</p> <p>Karoo lamb V13.5a – V13.5a</p> <p>V19.1 – V19.5</p>	
<p>Sub-objective 5.2</p> <p>To explore and describe the relationship between consumers' objective knowledge of selected production process claims and the claim of geographic origin and their willingness to pay a premium for fresh lamb or mutton featuring selected claims.</p>	<p>Knowledge of selected claims</p> <p>Willingness to pay more</p>	<p>Objective knowledge: (same as objective 1.2)</p>	<p>True/False questions, self-developed</p> <p>5-point Likert-type agreement scale, self-developed</p>	<p>Grass-fed V14.1a – V14.1c</p> <p>Free range V14.2a – V14.2d</p> <p>Antibiotic free V14.3a – V14.3b</p> <p>Hormone free V14.4a – V14.4b</p> <p>Country of origin V14.5a</p> <p>Geographic region V14.6a</p> <p>Karoo lamb V14.7a – V14</p> <p>V19.1 – V19.5</p>	<p>ANOVA</p>

* corresponds with variable numbers in paper-based questionnaire

3.5.1 Explanation of statistical methods

The statistical methods used to analyse the data are discussed in the following sections.

3.5.1.1 ANALYSIS OF VARIANCE

ANOVA is used to investigate whether the means of two or more independent samples/groups differ significantly (McDaniel & Gates, 2013:499). While ANOVA only indicates that overall differences exist in the means of different groups, Post-hoc tests isolate where the differences are (Mazzocchi, 2008:10). To achieve this, a series of pairwise-tests are calculated for each pair of groups (Field & Miles, 2010:317).

For example, in this study, ANOVA was performed to determine the relationship between subjective knowledge and demographics (gender, age, level of education, monthly household and population group), objective knowledge and demographics, subjective knowledge and willingness to pay more for lamb or mutton with specific claims, and between objective knowledge and willingness to pay more for pre-packaged lamb or mutton with specific claims. Post-hoc LSD tests were further performed to specify the differences found, if any.

3.5.1.2 Cronbach's alpha

Technically speaking, Cronbach's alpha is not a statistical test as it is a measure of internal consistency, that is, how closely related a set of items are as a group. A reliability coefficient of 0,70 or higher is considered "acceptable" in most social science research situations (Mazzocchi, 2008:10).

3.6 QUALITY OF THE DATA

3.6.1 Validity and reliability

Validity refers to the extent to which a specific measurement accurately reflects the concept it is intended to measure (Babbie & Mouton, 1998:122). A comprehensive literature review was done to guarantee the theoretical validity of the concepts (Mouton, 1996:111). The indicators were structured so that they appear to be relevant measurements of the variables, contributing to the face validity of the research, which is a desirable characteristic of a measuring instrument (Delport & Roestenburg, 2011:173-174). The denotations of the central concepts are accurate indicators of the connotations of the concepts. Additionally, the items in the questionnaire each

relates to the objectives of the study, thus contributing to content validity. Construct validity has to do with what the measuring instrument measures and how and why it functions in a certain way (Delport, 2011:175). Content validity was ensured by using clear conceptual definitions and by using multiple indicators where possible. The questionnaire was scrutinised by the supervisors. Also, the online questionnaire was pre-tested before the “live” run. It should be noted that the Consulta panel members sign up willingly and willingly participate in the survey. Reliability is primarily concerned not with what is being measured, but with how well it is being measured (Delport & Roestenburg, 2011:176). The five items testing subjective knowledge about production process claims and the claim of geographic origin were based on Flynn and Goldsmith’s (1999) short, reliable and valid self-report measure of subjective knowledge that is applicable to a variety of data collection methods and subject areas. Cronbach’s alpha was calculated to determine the internal consistency of the items for each of the subjective knowledge tests for the specific claims, with all of the alpha values exceeding the 0,7 criterion, indicating high reliability. A professional statistician aided with the data analysis. The questionnaire was constructed with the principles of questionnaire construction in mind to counter any possible effect of the measurement instrument on the reliability of the data (Mouton, 1996:146).

3.7 ETHICAL ISSUES

For research to have value it would depend on its ethical authenticity as well as the uniqueness of its discovery (Walliman, 2011:267). Ethics can be defined as a set of widely accepted moral principles that offer rules for, and behavioural expectations of, the most correct conduct toward experimental subjects and respondents, employers, sponsors, other researchers, assistants and students. In order to gain professional recognition, the adherence to a code of ethics is essential (Strydom, 2011:129).

An intensive effort was made by the researcher to ensure that the online questionnaire did not contain any questions that could cause harm or discomfort to the respondent completing the questionnaire. The questionnaire’s cover letter contained the following: a brief description of the background to the study, the time needed to complete the questionnaire, Consulta Research’s credentials such as the Consulta panel logo and an indication that Consulta Research is partnering with the University of Pretoria to collect the online data. Respondents provided informed consent to take part in the study by clicking on the link provided in the online questionnaire. Respondents were guaranteed that the information they provided would be kept confidential and that they would stay anonymous as discussed in section 3.3.3. Respondents

took part in the survey willingly and could withdraw from the survey by clicking on *the unsubscribe from this project only* link.

The Faculty of Natural and Agricultural Sciences Research Ethics Committee at the University of Pretoria approved the research project. See Addendum C for the approval letter. Intellectual ownership of any information used was acknowledged throughout this study with the necessary references, so as to avoid plagiarism.

The research findings will be released in the form of a written report as well as a scientific journal article, written with as much accuracy and objectivity as possible. The findings of the study will furthermore be reported with honesty and without any misinterpretation.

3.8 REPRESENTATION OF THE DATA

The raw data was statistically analysed and the conversion is available in both hard copy and electronically at the Department of Consumer Science at the University of Pretoria. Chapter 4 constitutes a discussion of the results of the study.

3.9 CONCLUSION

This study employed a cross-sectional survey design involving a self-administered online questionnaire to shed some light on consumers' knowledge of production process claims and the claim of geographic origin, and consumers' consideration of selected evaluative criteria when purchasing pre-packaged fresh lamb or mutton. The unit of analysis was adult consumers who purchased lamb or mutton at food retailers. The objective of the research was exploratory and descriptive in nature. An independent research company, Consulta Research PTY, recruited the online panel members by means of convenience sampling. The online questionnaire was pre-tested and 1 200 questionnaires were posted to the Consulta online panel. A total of 355 respondents completed the online questionnaire. Measures were implemented to improve the validity and reliability of the results and to ensure that the quality of the study measured up to acceptable standards. The necessary ethical research guidelines were followed to ensure a professional and objective study.

CHAPTER 4

Results, analysis and interpretation

This chapter presents the demographic characteristics of the sample, followed by the discussion and interpretation of the results in a sequence that is coherent with the objectives and sub-objectives of the study.

4.1 DEMOGRAPHIC DESCRIPTION OF THE SAMPLE

Respondents were recruited by means of convenience sampling through voluntary participation, after an invitation had been sent out by Consulta Research to 1200 panel members. Of the 1200 panel members, only 355 members' responses were usable for further analysis. The 845 panel members who were excluded from the study either did not complete the online questionnaire in full, or did not purchase pre-packaged lamb or mutton, or purchased lamb or mutton only from butcheries.

Respondents were asked to indicate their gender, age, level of education, monthly household income, population group and municipal area (Questions 1 to 6, paper-based questionnaire). The demographic profile of the sample is presented in Table 4.1 and the municipal areas are indicated in Table 4.2.

TABLE 4.1: DEMOGRAPHIC CHARACTERISTICS OF THE SAMPLE

Demographics		n	%
Gender	Male	197	55.5
	Female	158	44.5
	Total	355	100.0
Age	18-35 years	60	16.9
	36-45	85	23.9
	46-55	96	27.0
	56-65	69	19.5
	≥ 65	45	12.7
	Total	355	100.0
Level of education	< Grade 12	4	1.1
	Grade 12	82	23.3
	Additional diploma(s)/certificate(s)/Bachelor's degree(s)	153	43.5
	Postgraduate qualification	113	32.1
	Total	352	100.0
Monthly household income	R6 000–R16 000	51	16.0
	R16 001–R25 000	54	17.0
	R25 001–R40 000	70	22.0
	R40 001–R60 000	50	15.7
	R60 001–R100 000	60	18.9
	> R100 000	33	10.4
	Total	318	100.0
Population group	Black	79	22.2
	Coloured	10	2.8
	Indian	13	3.7
	White	243	68.5
	Other	10	2.8
	Total	355	100

n = 355; Missing values: level of education = 3, monthly household income = 37

Table 4.1 shows that the gender distribution of the sample was fairly even, with males totalling 55.5% and females 44.5% of the sample, and that the age distribution was good, with 16.9% of the respondents between the ages of 18 and 35 years, 23.9% between the ages of 36 and 45 years, 27% between the ages of 46 and 55 years, 19.5% between 56 and 65 years, and 12.7% older than 65 years. One of the most important variables influencing consumer behaviour is age (Lindquist & Sirgy, 2006:415). According to the Census of 2011, South Africa has a relatively youthful population, with 49% of the population being younger than 25 years of age, 18% between 26 and 35 years, and 33% being older than 35 years. From 2001 to 2011 the share of the older population (50 years and older) increased by 16% (Statistics South Africa, 2012). For the purpose of this study, to simplify the further analysis of the data, the age groups were consolidated and the sample was represented as follows: 18-35 years (Millennials), constituting 16.9% of the respondents; 36-55 years (middle-aged consumers), constituting 50.9% of the respondents; and respondents older than 56 years (mature consumers), constituting 32.2% of the respondents.

Table 4.1 shows that most of the respondents had tertiary education, with 43.5% of the respondents having either an additional diploma or a degree, and 32.1% having a postgraduate qualification. Only 24.4% of the respondents had only secondary schooling. The respondents'

relatively high level of education reflects to a certain extent the significant changes in education levels in South Africa since 2009, with a significant reduction in the number of adults with no education and remarkable increases in the number of adults with some high schooling, matric and post-matric qualifications (SAARF, 2013). Table 4.1 shows the income distribution of the sample in terms of six income categories. For the purpose of the analysis, these income categories were categorised as follows: middle income (R6 000 – R16 000) (16% of the respondents), upper middle income (R16 001 – R40 000) (39%), and the Elite income (> R40 000) (45%). The South African population consists mostly of Black, White, Indian, Coloured and Asian people. In this study, the majority of the sample consisted of White respondents (68.5%), followed by Black respondents (22.5%), Indian respondents (3.7%) and Coloured (2.8%) respondents. Only 2.8% of the sample chose the “other population group” response option, implying that they either did not want to disclose their population group or that they belonged to a different population group.

TABLE 4.2 MUNICIPAL AREA OF RESIDENCE

Municipality	n	%
City of Johannesburg	133	37.5
Ekurhuleni (Germiston)	51	14.3
Tshwane (Pretoria)	71	20.0
Other	29	8.2
Unidentified residences	71	20.0
Total	355	100.0

Table 4.2 shows that most of the respondents (37.5%) resided in the City of Johannesburg, followed by 20% in Tshwane, and 14.3% in Ekurhuleni. A total of 8.2% of the respondents chose the “other” response option, while 20% of the respondents (71 out of 355) did not indicate where they resided.

4.2 RESULTS IN TERMS OF OBJECTIVES

4.2.1 Objective 1 – Consumers’ knowledge of claims

In the following sections consumers’ subjective and objective knowledge about specific production process claims and the claim of origin is discussed.

4.2.1.1 Analysis of subjective knowledge measurement

Respondents had to rate their subjective knowledge of claims pertaining to “grass-fed”, “free range”, “antibiotic free”, “hormone free” lamb/mutton and “Karoo lamb” on a 5-point Likert-type scale, anchored with 1 (Strongly disagree) and 5 (Strongly agree) (Questions 13.1 to 13.5, paper-based questionnaire). The results are summarised in Table 4.3 and are reported in

percentages and overall means. The internal consistency of the items per subjective knowledge test is reported in terms of Cronbach's coefficient alpha. Negative items had to be recoded before they could be combined to calculate the overall means as well as the internal consistency of the respective knowledge scales.

TABLE 4.3: RESPONDENTS' LEVEL OF SUBJECTIVE KNOWLEDGE OF SELECTED CLAIMS ASSOCIATED WITH PRE-PACKAGED FRESH LAMB OR MUTTON

Items pertaining to consumers' subjective knowledge of selected claims	Level of agreement Number of responses (%)				
	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
GRASS-FED					
I know what "grass-fed" lamb/mutton means	47 (13.2%)	34 (9.6%)	50 (14.1%)	89 (25.1%)	135 (38.0%)
I do not feel very knowledgeable about "grass-fed" lamb/mutton	122 (34.3%)	80 (22.5%)	57 (16.1%)	52 (14.6%)	44 (12.4%)
Among my circle of friends I am the expert on "grass-fed" lamb/mutton	145 (40.8%)	78 (22.0%)	88 (24.8%)	30 (8.5%)	14 (3.9%)
Compared to most other people, I know less about "grass-fed" lamb/mutton	86 (24.2%)	78 (22.0%)	120 (33.8%)	32 (9.0%)	39 (11.0%)
When it comes to "grass-fed" lamb/mutton, I really know a lot	101 (28.5%)	74 (20.8%)	89 (25.1%)	46 (13.06%)	45 (12.7%)
Overall mean = 3.22 out of 5 (64.5%), Cronbach's Coefficient Alpha = 0.76					
FREE RANGE					
I know what "free range" lamb/mutton means	38 (10.7%)	18 (5.1%)	50 (14.1%)	117 (33.0%)	132 (37.1%)
I do not feel very knowledgeable about "free range" lamb/mutton	113 (31.8%)	95 (26.8%)	62 (17.5%)	50 (14.1%)	35 (9.9%)
Among my circle of friends I am the expert on "free range" lamb/mutton	98 (27.6%)	76 (21.4%)	130 (36.6%)	33 (9.3%)	18 (5.1%)
Compared to most other people, I know less about "free range" lamb/mutton	99 (27.9%)	94 (26.5%)	112 (31.5%)	21 (5.9%)	29 (8.2%)
When it comes to "free range" lamb/mutton, I really know a lot	102 (28.7%)	88 (24.8%)	90 (25.4%)	32 (9.0%)	43 (12.1%)
Overall mean = 3.38 out of 5 (67.6%), Cronbach's Coefficient Alpha = 0.78					
ANTIBIOTIC FREE					
I know what "antibiotic free" lamb/mutton means	57 (16.1%)	39 (11.0%)	49 (13.8%)	89 (25.1%)	121 (34.1%)
I do not feel very knowledgeable about "antibiotic free" lamb/mutton	105 (29.6%)	70 (19.7%)	74 (20.8%)	51 (14.4%)	55 (15.5%)
Among my circle of friends I am the expert on "antibiotic free" lamb/mutton	129 (36.3%)	76 (21.4%)	107 (30.1%)	24 (6.8%)	19 (5.4%)
Compared to most other people, I know less about "antibiotic free" lamb/mutton	84 (23.7%)	83 (23.4%)	113 (31.8%)	28 (7.9%)	47 (13.2%)
When it comes to "antibiotic free" lamb/mutton, I really know a lot	92 (25.9%)	67 (18.9%)	82 (23.1%)	50 (14.1%)	64 (18.0%)
Overall mean = 3.13 out of 5 (62.6%), Cronbach's Coefficient Alpha = 0.76					
HORMONE FREE					
I know what "hormone free" lamb/mutton means	64 (18.0%)	32 (9.0%)	62 (17.5%)	81 (22.8%)	116 (32.7%)
I do not feel very knowledgeable about "hormone free" lamb/mutton	99 (27.9%)	78 (22.0%)	76 (21.4%)	44 (12.4%)	58 (16.3%)
Among my circle of friends I am the expert on "hormone free" lamb/mutton	118 (33.2%)	88 (24.8%)	104 (29.3%)	21 (5.9%)	24 (6.8%)

TABLE 4.3: RESPONDENTS' LEVEL OF SUBJECTIVE KNOWLEDGE OF SELECTED CLAIMS ASSOCIATED WITH PRE-PACKAGED FRESH LAMB OR MUTTON - Continued

Items pertaining to consumers' subjective knowledge of selected claims	Level of agreement Number of responses (%)				
	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
Compared to most other people, I know less about "hormone free" lamb/mutton	85 (23.9%)	81 (22.8%)	105 (29.6%)	32 (9.0%)	52 (14.6%)
When it comes to "hormone free" lamb/mutton, I really know a lot	86 (24.2%)	71 (20.0%)	82 (23.1%)	52 (14.6%)	64 (18.0%)
Overall mean = 3.11 out of 5 (62.2%), Cronbach's coefficient alpha = 0.81					
KAROO LAMB					
I know what "Karoo Lamb" lamb/mutton means	38 (10.7%)	16 (4.5%)	38 (10.7%)	96 (27.0%)	167 (47.0%)
I do not feel very knowledgeable about "Karoo Lamb" lamb/mutton	127 (35.8%)	83 (23.4%)	64 (18.0%)	36 (10.1%)	45 (12.7%)
Among my circle of friends I am the expert on "Karoo Lamb" lamb/mutton	95 (26.8%)	70 (19.7%)	122 (34.4%)	43 (12.1%)	25 (7.0%)
Compared to most other people, I know less about "Karoo Lamb" lamb/mutton	99 (27.9%)	92 (25.9%)	102 (28.7%)	24 (6.8%)	38 (10.7%)
When it comes to "Karoo Lamb" lamb/mutton, I really know a lot	105 (29.6%)	82 (23.1%)	73 (20.6%)	42 (11.8%)	53 (14.9%)
Overall mean = 3.40 out of 5 (68%), Cronbach's coefficient alpha = 0.81					
Subjective consumerism knowledge score: A low score (i.e. 1–2.5 out of 5) ($\leq 50\%$) indicates a low level of subjective knowledge. A score of 2.55–3.74 out of 5 (50.1%– 74.9%) indicates a reasonable level of subjective knowledge. A high score (i.e. ≥ 3.75 out of 5) ($\geq 75\%$) indicates a high level of subjective knowledge.					

n = 355

For the purpose of the discussion below, the "Agree" and "Strongly agree" as well as the "Disagree" and "Strongly disagree" response options were collapsed. Bearing this in mind, it is clear that most of the respondents (63.1%) agreed that they know what grass-fed means, whereas 56.8% disagreed that they do not feel very knowledgeable, the latter implying that they did feel knowledgeable about the topic (see Table 4.3). A total of 62.8% disagreed that they are the expert among their friends on grass-fed lamb/mutton, while 46.2% disagreed that they knew less about the topic compared to other people. Almost 50% of the respondents disagreed that they really knew a lot. Overall, the respondents had a reasonable level of subjective grass-fed knowledge (overall mean = 3.22 out of 5), implying that they were reasonably confident about their own grass-fed knowledge. The five items for grass-fed showed good internal consistency (Cronbach's coefficient alpha = 0.76).

With regard to free range, the majority of the respondents (70.1%) agreed that they knew what free-range lamb/mutton means, while 58.6% disagreed that they did not feel knowledgeable about the subject. Almost half of the respondents disagreed that they are the expert among their friends, with 36.6% being undecided. A total of 54.4% of the respondents disagreed that they know less about free-range lamb/mutton than most other people, with 31.5% being undecided. Only 21.1% of the respondents believed that they really knew a lot about free-range

lamb/mutton. Overall, the respondents had a reasonable level of subjective knowledge about free range (overall mean = 3.38 out of 5). The five items for free range showed good internal consistency (Cronbach's coefficient alpha = 0.78).

A total of 59.2% of the respondents agreed that they knew what antibiotic-free lamb/mutton means, while almost half of the respondents (49.3%) disagreed they did not feel very knowledgeable about it. A total of 57.7% disagreed that they were the expert among their friends on antibiotic-free lamb/mutton, while 47.1% disagreed that they knew less about the topic compared to other people. Only 32.1% of the respondents believed that they really knew a lot about antibiotic-free lamb/mutton. Overall, the respondents had a reasonable level of subjective antibiotic-free knowledge (overall mean = 3.13 out of 5), implying that they were reasonably confident about their own knowledge about this specific claim. This could be due to ample media coverage the last few years on this very important matter (Cuacci, 2016; Oyesola, 2016). The five items for antibiotic-free showed good internal consistency (Cronbach's coefficient alpha = 0.76).

With regard to "hormone free", 55.5% agreed that they knew what hormone free lamb/mutton means, almost half disagreed that they did not feel knowledgeable about "hormone free", 58% respondents disagreed that they saw themselves as the expert on the topic, 48% felt that they knew less about hormone free compared to other people, and only 32.6% believed that they knew a lot. Overall, the respondents had a reasonable level of subjective knowledge about "antibiotic free" (overall mean = 3.11 out of 5), indicating that respondents were reasonably confident about their own knowledge about antibiotic-free lamb/mutton. The five items for hormone free showed good internal consistency (Cronbach's coefficient alpha = 0.81).

With regard to "Karoo Lamb", the majority of the respondents (74%) agreed that they knew the meaning of Karoo Lamb, while 59.2% disagreed that they did not feel knowledgeable about "Karoo lamb". Fewer than half (46.5%) of the respondents disagreed that they were the expert on "Karoo lamb", with 34.5% of the respondents being undecided. A total of 53.8% of the respondents disagreed that they knew less about Karoo lamb/mutton compared to other people, with 28.7% of the respondents being undecided. More than half of the respondents (52.7%) disagreed that they really knew a lot about Karoo lamb. Overall, the respondents had a reasonable level of knowledge about Karoo Lamb (overall mean = 3.4 out of 5). The five items for Karoo Lamb showed good internal consistency (Cronbach's coefficient alpha = 0.81).

For all the subjective knowledge claims, respondents rated their own knowledge higher when referring to the more general meaning of the concept (e.g. I know what free range means), than when referring to the more specific meaning of the concept (e.g. when it comes to free range, I

really know a lot), probably indicating that consumers found it easier to express themselves (to rate) the basic meaning of a concept than the more specific meaning of the term. This could imply that the respondents felt more confident when referring to the general meaning of the specific subjective knowledge claims than about the more specific meaning implied by these terms.

Subjective knowledge (or perceived knowledge) refers to the individual's own perception of what he/she knows about a specific subject (Brucks, 1985; Dodd *et al.*, 2005; Gámbaro, Ellis & Prieto, 2013) and is based upon expertise, as well as experience and other factors, and also reflects confidence (Alba & Hutchinson, 1987, 2000; Donoghue *et al.*, 2016). Overall, the respondents thought that they were reasonably knowledgeable about the subjective knowledge claims (means varying between 3.11 and 3.40 out of 5). One can therefore conclude that the respondents were fairly confident about their subjective knowledge pertaining to the claims.

The items for the respective subjective knowledge tests were adapted directly from Flynn and Goldsmith's (1999) general short measure of subjective consumer knowledge. The five items for each of the respective subjective knowledge tests showed good internal consistency, with the Cronbach's alpha values exceeding the 0.70 criterion (Anastasi & Urbina, 1997:91) in all of the cases, confirming the usability of Flynn and Goldsmith's (1999) standardised scale to measure subjective knowledge.

4.2.1.2 Analysis of objective knowledge measurement

Questions 14.1 to 14.7 (paper-based questionnaire) measured respondents' objective knowledge of claims pertaining to "grass-fed", "free range", "antibiotic free", "hormone free", "country of origin", "geographic region" and "Karoo Lamb". Respondents' objective knowledge of geographic region and of country of origin was also measured, although the respondents' subjective knowledge of these concepts was not measured. Respondents were required to indicate whether the objective knowledge statements are true or false. The results for the objective knowledge test are presented in Table 4.4. The correct answers are indicated in red.

TABLE 4.4: RESULTS OF OBJECTIVE KNOWLEDGE TESTS

Objective knowledge tests	Response options Number of responses (%)	
Items pertaining to "Grass-fed"	True	False
Animals have been fed a diet that is natural to the animal	297 (83.7%)	58 (16.3%)
Animals have been raised on a diet almost exclusively of indigenous grass	215 (60.6%)	140 (39.4%)
Animals have been raised on a diet of indigenous grass as well as grain from a feedlot (a confined area where animals are fed mainly grain to reach a certain target weight)	158 (44.5%)	197 (55.5%)
The mean score (percentage correct answers) for the objective knowledge test = 2.00 out of 3 (66.6%)		
Items pertaining to "Free range"	True	False
Animals were allowed to roam freely in large pastures for their entire lives prior to slaughtering	311 (87.6%)	44 (12.4%)
Animals were not fed from a feedlot (a confined area where animals are fed mainly grain to reach a certain target weight)	238 (67.0%)	117 (33.0%)
Animals had ready access to the outdoors, fresh water and a natural diet to maintain full health and vigour	328 (92.4%)	27 (7.6%)
Meat classified as "Age Class A"	177 (49.9%)	178 (50.1%)
The mean score (percentage correct answers) for the objective knowledge test = 2.97 out of 4 (74.3%)		
Items pertaining to "Antibiotic free"	True	False
Animals were not given routine antibiotics	289 (81.4%)	66 (18.6%)
Animals may have received routine antibiotics	86 (24.2%)	269 (75.8%)
The mean score (percentage correct answers) for the objective knowledge test = 1.57 out of 2 (78.6%)		
Items pertaining to "Hormone free"	True	False
No hormones were given when raising the animal	319 (89.9%)	36 (10.1%)
Animals may have received hormones during raising	54 (15.2%)	301 (84.8%)
The mean score (percentage correct answers) for the objective knowledge test = 1.75 out of 2 (87.3%)		
Item pertaining to "Country of Origin"	True	False
When describing from which country the meat product comes (i.e. South Africa/Namibia)	351 (98.9%)	4 (1.1%)
Item pertaining to "Geographic Region"	True	False
To describe the specific region where the meat product comes from	350 (98.6%)	5 (1.4%)
Items pertaining to "Karoo Lamb"	True	False
The animal was raised in the Karoo	333 (93.8%)	22 (6.2%)
The animal was not allowed to roam freely	31 (8.7%)	324 (91.3%)
The animal was given routine antibiotics	68 (19.2%)	287 (80.8%)
The animal was fed in a feedlot (a confined area where animals are fed mainly grain to reach a certain target weight) before slaughter	58 (16.3%)	297 (83.7%)
The animal grazed on specific Karoo bushes, contributing to the unique taste of Karoo Lamb	314 (88.5%)	41 (11.5%)
The mean score (percentage correct answers) for the objective knowledge test = 4.38 out of 5 (87.6%)		
Objective knowledge score: A score \leq 50% indicates a low level of objective knowledge. A score between 50% and 75% indicates a reasonable level of objective knowledge. A score \geq 75% indicates a high level of objective knowledge.		

n = 355

With regard to respondents' objective knowledge of questions pertaining to "grass-fed", the correct responses varied between 55.5% and 83.7%, with a mean score of 66.6%, indicating a reasonable level of objective knowledge about grass-fed (see Table 4.4). It is clear that respondents knew that grass-fed animals were fed on a diet natural to them or on a diet consisting mainly of grass. However, only 55% of the respondents knew that grass-fed animals do not eat grain from a feedlot. The respondents could have associated the first two statements pertaining to the word "grass-fed", while the last item probably caught them off-guard.

The respondents' correct responses for the objective "free range" test varied between 50.1% and 92.4%, with a mean overall score of 74.3%, indicating that the respondents had a reasonable level of objective knowledge (see Table 4.4). The wording of the first three items of this test implied that the animals had access to the outdoors, while the last item did not relate to

the outdoors at all, probably surprising the respondents. Only 50.1% of the respondents knew that meat classified as “Age Class A” was not related to free range, implying that respondents had limited knowledge of what “Age Class A” really means.

The mean scores (expressed in the percentage of correct answers) for antibiotic free (78.6%), hormone free (87.3%), country of origin (98.9%), geographic region (98.6%) and Karoo lamb (87.6%) indicate that respondents had a high level of objective knowledge concerning these claims. Almost all of the respondents knew that the term “country of origin” describes the country from which the meat product originates, and that “geographic region” describes the specific region where the meat product originates.

The respondents were very knowledgeable as far as “country of origin”, “geographic region”, “Karoo Lamb” and “hormone free” are concerned (means > 87%), followed by “antibiotic free”, “free range”, and “grass-fed”. In view of the high scores obtained for the respective knowledge tests one could argue that the descriptive wording of the items suggested the correct response to respondents. However, one should also acknowledge that these terms (claims) are widely used on the packaging or labelling of lamb/mutton products and promotional material (Vermeulen *et al.*, 2015). In addition, existing objective knowledge scales often measure knowledge of very domain-specific aspects, such as wine (Dodd *et al.*, 2005; Vigar-Ellis, Pitt & Caruana, 2015), genetically modified food (House *et al.*, 2004), or olive oil (Gámbaro *et al.*, 2013).

When comparing subjective knowledge and objective knowledge scores for each of the respective claims, where applicable, it is clear that the respondents rated their subjective knowledge lower than their objective knowledge, implying that respondents’ perception of what they think they know about the claims differs from what they actually know, the latter being the knowledge that the individual truly possesses and can demonstrate (Vigar-Ellis *et al.*, 2015). Alba and Hutchinson (2000) explain that objective knowledge has to do with the accuracy of knowledge, implying that individuals with a high level of objective knowledge on a topic will be able to give the correct answers to questions about that topic. Objective knowledge reduces the cognitive effort required in decision making and improves “a consumer’s ability to analyse and recall product information” (Alba & Hutchinson, 1987, Vigar-Ellis *et al.*, 2015). Theoretically, something has to be done to increase consumers’ subjective knowledge of the specific claims in order for them to gain more self-confidence to be better able to deal with product-related experiences, including advertising exposure, information search, interactions with salespeople, choice and decision making, purchasing, and product usage (Alba & Hutchinson, 1987).

The results of this study show that consumers' knowledge of selected production process claims and claims of origin manifests in two dimensions, namely subjective and objective knowledge, confirming the findings of previous studies measuring consumer knowledge pertaining to various knowledge domains including wine (Vigar-Ellis *et al.*, 2015; Dodd *et al.*, 2005), genetically modified food (House *et al.*, 2004), and olive oil (Gámbaro *et al.*, 2013). Researchers studying consumers' product knowledge therefore need to clearly distinguish between subjective and objective knowledge and need to assess both concepts to gain deeper understanding of the role knowledge plays in consumers' behaviour (Flynn & Goldsmith, 1999; House *et al.*, 2004). The reality is that consumers' subjective knowledge of production process claims, what they think they know, and their objective knowledge, what they actually know, are two different things, potentially influencing consumers' search and choice behaviours differently (Alba & Hutchinson, 2000; Moorman, Diehl, Brinberg, & Kidwell, 2004; Lee & Lee, 2009). Subjective knowledge depends on pre-existing knowledge that is primarily gained through product-related experiences, and is more influential in product evaluation, while objective knowledge depends on information stored in the memory (Park, Mothersbaugh & Feick, 1994) and influences the number of product attributes examined (Lee & Lee, 2009).

4.2.2 Objective 2 – Consumers' consideration of the importance of specific evaluative criteria

Respondents had to rate the importance they attached to the specific information (terms) printed on the label or pre-packaging material of pre-packaged lamb/mutton on a 5-point Likert-type scale, where 1 represented "Not at all important" and 5 represented "Extremely important" (Question 15, paper-based questionnaire). (It needs to be noted here that the parameter of "grass-fed" was inadvertently omitted in this section of the questionnaire.) The results are shown in Table 4.5.

TABLE 4.5: IMPORTANCE OF INFORMATION PRINTED ON LABELS

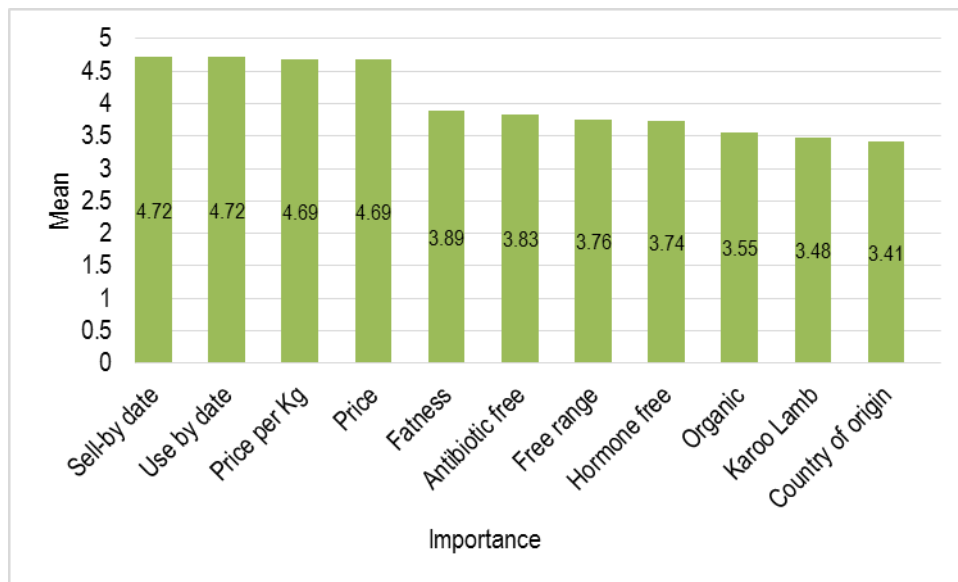
INFORMATION	Level of importance Number of responses (%)					Mean
	Not important	Slightly important	Moderately Important	Very Important	Extremely Important	
Hormone free	31 (8.7%)	38 (10.7%)	66 (18.6%)	76 (21.4%)	144 (40.6%)	3.74
Free range	25 (7.0%)	27 (7.6%)	79 (22.3%)	100 (28.2%)	124 (34.9%)	3.76
Antibiotic free	25 (7.0%)	36 (10.1%)	63 (17.7%)	82 (23.1%)	149 (42.0%)	3.83
Sell-by date	2 (0.6%)	4 (1.1%)	12 (3.4%)	54 (15.2%)	283 (79.7%)	4.72
Price per kg	1 (0.3%)	3 (0.8%)	22 (6.2%)	54 (15.2%)	275 (77.5%)	4.69
Organic	36 (10.1%)	36 (10.1%)	82 (23.1%)	100 (28.2%)	101 (28.5%)	3.55
Country of origin	31 (8.7%)	57 (16.1%)	90 (25.4%)	89 (25.1%)	88 (24.8%)	3.41
Use-by date	4 (1.1%)	3 (0.8%)	12 (3.4%)	52 (14.6%)	284 (80.0%)	4.72
Price	1 (0.3%)	9 (2.5%)	17 (4.8%)	44 (12.4%)	284 (80.0%)	4.69
Fatness	13 (3.7%)	26 (7.3%)	82 (23.1%)	100 (28.2%)	134 (37.7%)	3.89
Karoo Lamb	33 (9.3%)	40 (11.3%)	99 (27.9%)	91 (25.6%)	92 (25.9%)	3.48

Importance rating: A low score (i.e. 1–2.5 out of 5) ($\leq 50\%$) indicates unimportant to slightly important. A score of 2.55–3.74 out of 5 (50.1% – 74.9%) indicates moderately important. A high score (i.e. ≥ 3.75) ($\geq 75\%$) indicates very to extremely important.

n = 355

To simplify the interpretation of the data, the very important and extremely important response options were combined. Bearing this in mind, almost all of the respondents considered sell-by date (94.9%) and use-by date (94.6%), followed by price per kilogram (92.7%) and price (92.4%), to be very to extremely important, while almost two-thirds of the respondents regarded information about fatness (65.9%) and credence claims including antibiotic free (65.1%), free range (63.1%) and hormone free (62%) as very to extremely important (see Table 4.5). Only half of the respondents regarded country of origin (49.9%) as very to extremely important, while more than half considered information about Karoo Lamb (51.5%) and organic (56.7%) as very to extremely important. The findings pertaining to the importance attached to Karoo Lamb and claims associated with Karoo Lamb, including “antibiotic free”, “free range” and “hormone free”, are in line with Kirsten *et al.*'s (2017) research suggesting that South African consumers have a “reasonably good appetite” for certified Karoo meat of origin. The current study's findings pertaining to the importance of price and of Karoo lamb are similar to Du Plessis and Du Rand's (2012) study on the product attributes that influence the decision-making process of consumers towards purchasing Karoo lamb, where respondents rated price as an extrinsic attribute as the most important factor and the origin attribute (Karoo Lamb) as the least important factor influencing decision making.

Figure 4.1 shows the means for the importance rating pertaining to information printed on labels or packaging of pre-packaged lamb/mutton.



n = 355,

FIGURE 4.1: MEANS FOR THE IMPORTANCE RATING PERTAINING TO INFORMATION PRINTED ON THE LABEL OR PACKAGING OF PRE-PACKAGED FRESH LAMB/MUTTON

Figure 4.1 shows that both sell-by date and use-by date had the highest mean scores (means = 4.72) and that both price and price per kg had mean scores of 4.69, implying that information pertaining to these attributes were very to extremely important to respondents. Price is known to be one of the most important and determining factors in the consumer's decision-making process and is generally seen as a quality cue (Chocarro *et al.*, 2009). A higher price can sometimes symbolise better quality or safety of the product for the consumers (Du Plessis & Du Rand, 2012). When comparing two similar products, the higher-priced alternative is usually expected to be of better quality (Chocarro *et al.*, 2009). The sell-by and use-by dates are generally used as a cue of freshness, safety and quality (Du Plessis & Du Rand, 2012) and are considered dominant purchasing considerations of middle- and high-income consumers (Vermeulen *et al.*, 2015). The respondents also regarded fatness, antibiotic free and free range as very to extremely important, though the means were a bit lower than the top four importance attributes. Fatness, antibiotic free and free range relate to the production processes used and could also signify safety to consumers. Meat products are often viewed with negativity, specifically due to the association of meat consumption with certain risks to human health including chemical residues of growth hormones and antibiotics, and high fat content (Du Plessis & Du Rand, 2012). Alternatively, productions process claims could be important to price-sensitive consumers as they generally associate claims such as free range with higher prices. The respondents regarded hormone free, organic, country of origin, and Karoo lamb as moderately important (means varied between 3.41 and 3.74). According to Du Plessis and Du

Rand (2012), origin – whether country of origin or geographic origin – can be regarded as a quality cue.

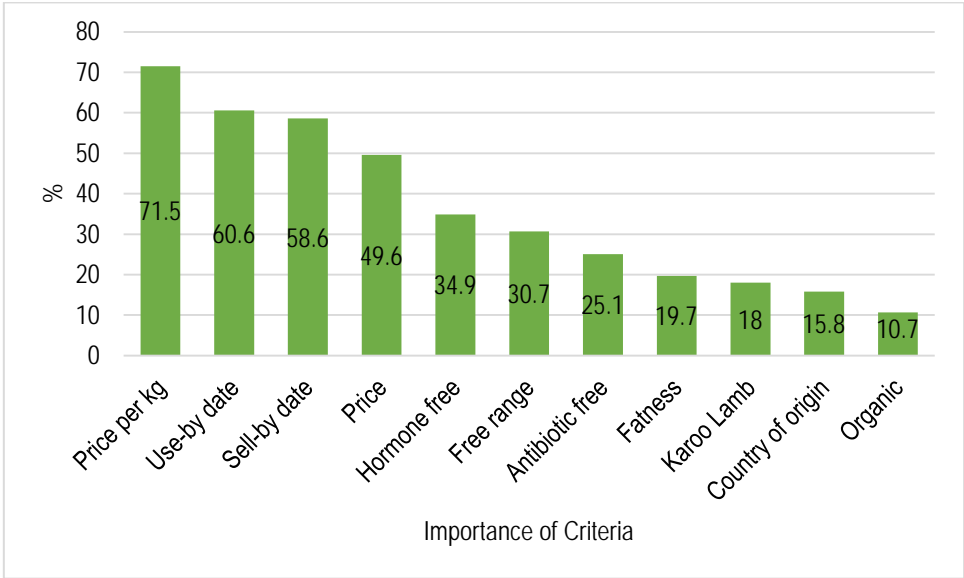
Using two separate questions, respondents were asked to rank the four most important attributes, with 1 representing “most important” and 4 representing “4th most important (Question 16, paper-based questionnaire), and to rank the three least important attributes with 1 representing “least important” and 3 representing “3rd least important (Question 17, paper-based questionnaire). A cross-comparison of the responses for both of these questions revealed inconsistencies and it was therefore decided to determine the response voted among the four most important response options per item and the responses voted among the three least important response options per item. The ranked responses for each item on the most important scale were categorised and coded as “important”, while the not ranked responses per item were categorised and coded as “less important”. Similarly, the ranked responses for each item on the least important scale were categorised and coded as “unimportant”, while the not ranked responses per item were coded as “more important”. These questions were therefore interpreted in terms of important versus less important responses and the unimportant versus more important responses (see Tables 4.6 and 4.7).

TABLE 4.6 IMPORTANT VERSUS LESS IMPORTANT RESPONSES PERTAINING TO THE INFORMATION PRINTED ON THE LABEL OR PACKAGING OF PRE-PACKAGED FRESH LAMB/MUTTON

Information	Important vs. less important responses					
	n/%					
	Most important	2nd most important	3rd most important	4th most important	Total important responses	Not ranked Less important
Hormone free	41 (11.5%)	24 (6.8%)	27 (7.6%)	32 (9.0%)	124 (34.9%)	231 (65.1%)
Free range	24 (6.8%)	23 (6.5%)	31 (8.7%)	31 (8.7%)	109 (30.7%)	246 (69.3%)
Antibiotic free	12 (3.4%)	31 (8.7%)	21 (5.9%)	25 (7.0%)	89 (25.1%)	266 (74.9%)
Sell-by date	44 (12.4%)	54 (15.2%)	64 (18.0%)	46 (13.0%)	208 (58.6%)	147 (41.4%)
Price per kg	115 (32.4%)	64 (18.0%)	38 (10.7%)	37 (10.4%)	254 (71.5%)	101 (28.5%)
Organic	7 (2.0%)	9 (2.5%)	7 (2.0%)	15 (4.2%)	38 (10.7%)	317 (89.3%)
Country of origin	7 (2.0%)	10 (2.8%)	18 (5.1%)	21 (5.9%)	56 (15.8%)	299 (84.2%)
Use-by date	31 (8.7%)	62 (17.5%)	72 (20.3%)	50 (14.1%)	215 (60.6%)	140 (39.4%)
Price	52 (14.6%)	49 (13.8%)	34 (9.6%)	41 (11.5%)	176 (49.6%)	179 (50.4%)
Fatness	6 (1.7%)	17 (4.8%)	21 (5.9%)	26 (7.3%)	70 (19.7%)	285 (80.3%)
Karoo Lamb	15 (4.2%)	8 (2.3%)	18 (5.1%)	23 (6.5%)	64 (18.0%)	291 (82.0%)

n = 355

Table 4.6 shows that the majority of the respondents rated price per kilogram (71.5%) as important, followed by use-by date (60.6%), sell-by date (58.6%), and price (49.6%). The respondents probably perceived price per kilogram (unit price) as a truer reflection of the actual cost of the item than the price per item. The majority of the respondents regarded organic (89.3%), country of origin (84.2%), Karoo Lamb (82%), fatness (80.3%), and antibiotic free (74.9%) as less important, while more than two-thirds of the respondents regarded free range (69.3%) as less important, and 65.1% of the respondents considered hormone free less important. The percentages voted among the four most important response options per item are also shown in Figure 4.2.



n = 355

FIGURE 4.2: PERCENTAGE VOTED AMONG THE FOUR MOST IMPORTANT RESPONSE OPTIONS PER ITEM

Figure 4.2 shows that the majority of the respondents regarded price per kilogram as important (71.5%), followed by use-by date (60.6%), sell-by date (58.6%), and price (49.6%). Between 20% and 40% of the respondents considered antibiotic free (25.1%), free range (30.7) and hormone free (34.9) as important, while fewer than 20% of the respondents regarded fatness (19.7), Karoo Lamb (18.0%), country of origin (15.8%), and organic (10.7%) as important.

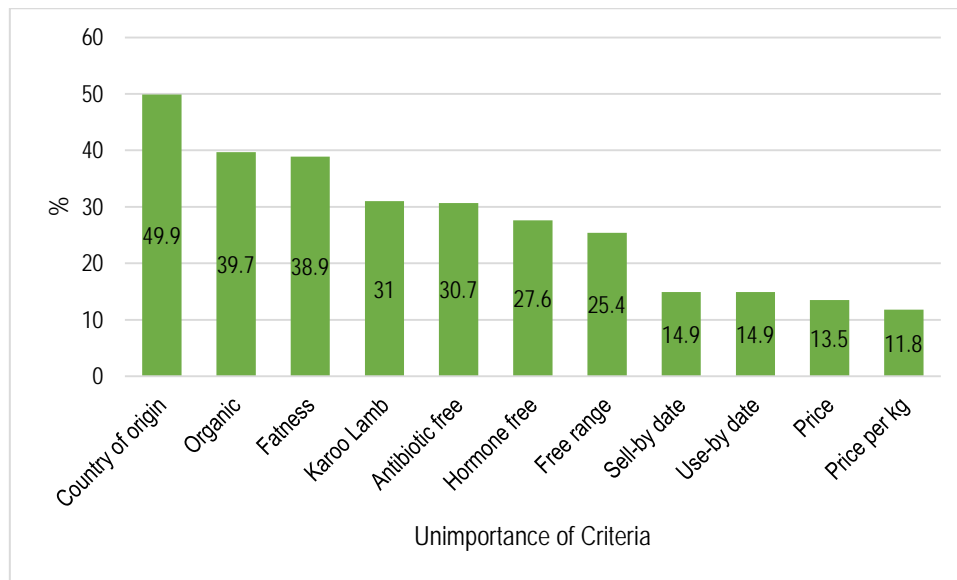
Table 4.7 shows the unimportant versus the more important responses pertaining to the information printed on the label or packaging of pre-packaged fresh lamb/mutton, while Figure 4.3 presents the percentages voted among the three least important response options per item.

TABLE 4.7: UNIMPORTANT VS MORE IMPORTANT RESPONSES PERTAINING TO THE INFORMATION PRINTED ON THE LABEL OR PACKAGING OF PRE-PACKAGED FRESH LAMB/MUTTON

Information	Unimportant vs. more important responses				
	Least important	2nd least important	3rd least important	Total least important responses	Not ranked (More important)
Hormone free	33 (9.3%)	32 (9.0%)	33 (9.3%)	98 (27.6%)	257 (72.4%)
Free range	20 (5.6%)	30 (8.5%)	40 (11.3%)	90 (25.4%)	265 (74.6%)
Antibiotic free	18 (5.1%)	51 (14.4%)	40 (11.3%)	109 (30.7%)	246 (69.3%)
Sell-by date	24 (6.8%)	13 (3.7%)	16 (4.5%)	53 (14.9%)	302 (85.1%)
Price per kg	13 3.7%	16 (4.5%)	13 (3.7%)	42 (11.8%)	313 (88.2%)
Organic	43 (12.1%)	47 (13.2%)	51 (14.4%)	141 (39.7%)	214 (60.3%)
Country of origin	74 (20.8%)	50 (14.1%)	53 (14.9%)	177 (49.9%)	178 (50.1%)
Use-by date	11 (3.1%)	24 (6.8%)	18 (5.1%)	53 (14.9%)	302 (85.1%)
Price	21 (5.9%)	11 (3.1%)	16 (4.5%)	48 (13.5%)	307 (86.5%)
Fatness	58 (16.3%)	38 (10.7%)	42 (11.8%)	138 (38.9%)	217 (61.1%)
Karoo Lamb	40 (11.3%)	41 (11.5%)	29 (8.2%)	110 (31.0%)	245 (69.0%)

n = 355

With regard to unimportance, Table 4.7 shows that very few of the respondents felt that price per kg (11.8%), price (13.5%), use-by date (14.9%) and sell-by date (14.9%) were unimportant. In addition, between 20 to 40% of the respondents felt that hormone free, free range, antibiotic free, organic, fatness and Karoo Lamb were unimportant – all the aspects associated with the production of, and by implication the safety of, lamb/mutton. Almost half of the respondents felt the country of origin was unimportant. Corroborating the findings pertaining to the “most important” rating, price per kg was the most popular choice for the four most important claims on the packaging, with 71.5% support. Use-by date 60.6% and sell-by date 58.6% were also selected by more than 50% of the respondents followed by price (49.6%) just below 50%. It is evident from the above results that consumers use meat labels to determine the quality of the product and that price per kg plays a major role in their decision making when purchasing meat. The freshness and the safety of the product also play a major role and is indicative by the importance factor attributed to both the sell-by date and use-by date by respondents.



n = 355

FIGURE 4.3: PERCENTAGES VOTED AMONG THE THREE LEAST IMPORTANT RESPONSE OPTIONS PER ITEM

Figure 4.3 shows that few of the respondents felt that price per kg (11.8%), price (13.5%), use-by date (14.9), and sell-by data (14.9%) were unimportant, while half of the respondents felt the country of origin was unimportant (49.9%).

Overall, the results of objective 2 are consistent with previous studies on the importance of specific attributes pertaining to red meat. For example, Kirsten *et al.* (2012:17) found that the dominant attributes that consumers consider when purchasing red meat are price and food safety, with some evidence suggesting that the Karoo origin identity could be important.

4.2.3 Objective 3 – Relationships between respondents’ subjective and objective knowledge of claims and the importance assigned to the respective claims

This discussion in the following section focuses only on the relationship between the respondents’ subjective and objective knowledge about hormone free, free range, antibiotic free and Karoo Lamb (Questions 13 and 14), and the importance assigned to these respective concepts (i.e. printed information provided on the label). The importance rating is based on the responses obtained for Question 15.

ANOVA was performed to compare the mean scores for the subjective and objective knowledge claims pertaining to “free range”, “antibiotic free”, “hormone free” and “Karoo lamb” across the importance assigned to these concepts (across importance categories). The results are shown in Table 4.8.

TABLE 4.8: THE RELATIONSHIP BETWEEN SUBJECTIVE AND OBJECTIVE KNOWLEDGE OF SPECIFIC CLAIMS ON IMPORTANCE CATEGORIES

Knowledge of claims		Subjective knowledge score					Objective knowledge score				
		Level of importance					Level of importance				
		Not important at all	Slightly important	Moderately important	Very important	Extremely important	Not important at all	Slightly important	Moderately important	Very important	Extremely important
Free range	n	25	27	79	100	124	25	27	79	100	124
	Mean	2.87 ^a	3.21 ^{ab}	3.28 ^b	3.47 ^b	3.50 ^b	79.00	76.85	70.25	78.00	72.38
	Std. dev.	1.14	0.85	0.96	0.73	0.94	25.70	21.85	21.21	17.87	21.10
	p-value, ANOVA	0.010 ^{**}					0.063				
Hormone free	n	31	38	66	76	144	31	38	66	76	144
	Mean	2.41 ^a	2.95 ^b	3.02 ^b	3.15 ^b	3.32 ^b	77.42	80.26	85.61	90.13	90.63
	Std. dev.	1.27	0.97	1.02	0.73	1.08	36.14	37.74	31.34	25.85	26.42
	p-value, ANOVA	0.000 ^{**}					0.082				
Antibiotic free	n	25	36	63	82	149	25	36	63	82	149
	Mean	2.57 ^a	3.32 ^b	3.21 ^b	2.99 ^b	3.22 ^b	78.00	68.06	80.16	78.05	80.87
	Std. dev.	1.16	0.88	0.86	0.88	1.02	35.59	41.67	37.61	38.57	35.16
	p-value, ANOVA	0.010 ^{**}					0.464				
Karoo lamb	n	33	40	99	91	92	33	40	99	91	92
	Mean	2.62 ^a	2.99 ^b	3.39 ^c	3.65 ^c	3.64 ^c	82.42 ^a	86.50 ^{ab}	85.25 ^{ab}	91.21 ^b	88.91 ^{ab}
	Std. dev.	1.31	1.12	0.94	0.79	0.84	20.47	18.33	17.75	14.36	17.13
	p-value, ANOVA	0.000 ^{**}					0.049 [*]				
		Subjective consumerism knowledge score: A low score (i.e. 1–2.5 out of 5) ($\leq 50\%$) indicates a low level of subjective knowledge. A score of 2.55–3.74 out of 5 (50.1%– 74.9%) indicates a reasonable level of subjective knowledge. A high score (i.e. ≥ 3.75 out of 5) ($\geq 75\%$) indicates a high level of subjective knowledge.					Objective knowledge score: A score $\leq 50\%$ indicates a low level of objective knowledge. A score between 50% and 75% indicates a reasonable level of objective knowledge. A score $\geq 75\%$ indicates a high level of objective knowledge.				

ANOVA, analysis of variance * Significant at the 5% level, ** Significant at the 1% level

Means with different superscripts differ significantly on the 5% level

LSD Pairwise post-hoc tests

The ANOVAs revealed strong relationships between respondents' subjective knowledge of claims and the importance assigned to the respective claims. In the case of *subjective knowledge about free range* ($p = 0.01$), respondents who considered it to be extremely important (mean subjective knowledge score = 3.50) along with those who considered it to be very important (mean subjective knowledge score = 3.47) or moderately important (mean score = 3.28), scored significantly higher than respondents who considered it to be not important at all (mean score = 2.87) (see Table 4.8).

In the case of *subjective knowledge about hormone free* ($p = 0.000$), respondents who considered it to be extremely important (mean subjective knowledge score = 3.32) along with those who considered it to be very important (mean subjective knowledge score = 3.15), moderately important (mean subjective knowledge score = 3.02) or slightly important (mean subjective knowledge score = 2.95), scored significantly higher than respondents who considered it to be not important at all (mean subjective knowledge score = 2.41).

A similar pattern emerged for *subjective knowledge about hormone free* and *subjective knowledge about antibiotics free* ($p = 0.01$): respondents who considered it to be extremely important (mean subjective knowledge score = 3.22) along with those who considered it to be very important (mean subjective knowledge score = 2.99), moderately important (mean score = 3.21) or slightly important (mean = 3.32), scored significantly higher than respondents who considered it to be not important at all (mean score = 2.57).

In the case of *subjective knowledge about Karoo lamb* ($p = 0.000$), respondents who considered it to be extremely important (mean subjective knowledge score = 3.64) along with those who considered it to be very important (mean subjective knowledge score = 3.65) or moderately important (mean score = 3.39), scored significantly higher than those who considered it to be slightly important (mean = 2.99), who in turn scored significantly higher than respondents who considered it to be not important at all (mean score = 2.62). It need to be mentioned that although there are significant differences the subjective knowledge of all seemed to be in the range of reasonableness.

The ANOVAs show that objective knowledge of claims is not related to the importance ratings for free-range lamb, hormone-free lamb, and antibiotic-free lamb, except for objective knowledge about Karoo lamb ($p = 0.049$), where the respondents who considered it to be very important (mean objective knowledge score = 91.21%), scored significantly higher than those who considered it to be not important at all (mean score = 82.42%) (see Table 4.8). Clearly proves that whether important or not all had high levels of objective knowledge on Karoo Lamb.

Higher levels of subjective knowledge are related to higher importance rating for free-range lamb, hormone-free lamb, antibiotic-free lamb and Karoo lamb. Objective knowledge of the respective claims is not related to importance ratings, except for objective knowledge about Karoo lamb, with a higher level of knowledge being associated with a higher level of importance.

Previous research has assessed the role of knowledge in the context of the nature of product attributes, distinguishing extrinsic attributes (e.g. price) from intrinsic (e.g. functional) attributes.

For example, Rao and Sieben (in Peschel, Grebitus, Steiner, & Veeman, 2016) have identified a U-shaped relationship between knowledge and extrinsic/intrinsic attributes, suggesting that with increasing levels of knowledge, importance of extrinsic attributes first decreases, then subsequently increases relative to intrinsic attributes. However, it should be noted that the current study only explored and described the relationship between knowledge and specific production process claims.

4.2.4 Objective 4 – Relationships between demographic characteristics and consumers' subjective knowledge of specific claims

ANOVA was performed to compare the mean scores for the subjective and objective knowledge claims pertaining to “grass-fed”, “free range”, “antibiotic free”, “hormone free” and “Karoo lamb” across the demographic characteristics of the sample. Post-hoc LSD tests were applied to do multiple comparisons between the various demographic groups. For the sake of balanced ANOVA, some of the small subgroups were either pooled or eliminated. Table 4.9 shows the differences in subjective knowledge about grass-fed and objective knowledge about grass-fed across the redefined samples (demographic groups).

TABLE 4.9: DIFFERENCES IN SUBJECTIVE AND OBJECTIVE KNOWLEDGE OF CLAIMS ON DEMOGRAPHIC CHARACTERISTICS

Knowledge of claims		Subjective knowledge score													Objective knowledge score												
		Demographic characteristics																									
		Gender		Age categories			Highest level of education			Population group		Monthly household income			Gender		Age categories			Highest level of education			Population group		Monthly household income		
Male	Female	Millennials	Middle-aged consumers	Mature consumers	Secondary schooling	Diploma/degree	Postgraduate qualification	Black	White	Middle income	Upper middle income	Elite income	Male	Female	Millennials	Middle aged consumers	Mature consumers	Secondary schooling	Diploma/degree	Postgraduate qualification	Black	White	Middle income	Upper middle income	Elite income		
Grass-fed	n	197	158	60	181	114	86	153	113	79	243	51	124	143	197	158	60	181	114	86	153	113	79	243	51	124	143
	Mean	3.23	3.20	3.11	3.25	3.22	3.19	3.25	3.21	2.93 ^a	3.31 ^b	3.36	3.10	3.27	66.84	66.24	71.67	66.30	64.33	67.83	66.88	65.19	62.87	67.22	64.05	64.25	68.07
	Std. dev.	0.96	0.91	0.84	0.96	0.96	0.94	0.94	0.94	1.02	0.93	0.84	0.94	0.99	30.02	28.15	26.63	28.54	31.27	26.79	29.98	30.01	28.24	29.69	28.16	28.88	29.83
	p-value, ANOVA	0.815		0.597			0.850			0.003 ^{**}		0.162			0.850		0.284			0.807			0.254		0.501		
Free range	n	197	158	60	181	114	86	153	113	79	243	51	124	143	197	158	60	181	114	86	153	113	79	243	51	124	143
	Mean	3.35	3.41	3.19	3.44	3.38	3.24	3.43	3.44	2.99 ^a	3.54 ^b	3.32 ^a	3.21 ^{ab}	3.50 ^b	74.75	73.73	70.83	74.86	75.22	70.35 ^a	72.88 ^{ab}	79.42 ^b	66.77 ^a	77.06 ^b	67.65 ^a	70.56 ^a	78.15 ^b
	Std. dev.	0.99	0.81	0.84	0.88	0.99	0.98	0.88	0.88	0.99	0.84	0.93	0.94	0.91	20.82	20.89	21.18	21.16	20.09	22.20	20.47	19.55	20.30	20.09	21.96	21.16	20.31
	p-value, ANOVA	0.575		0.175			0.219			0.000 ^{**}		0.036 [*]			0.650		0.366			0.005 ^{**}			0.000 ^{**}		0.001 ^{**}		
Antibiotic free	n	197	158	60	181	114	86	153	113	79	243	51	124	143	197	158	60	181	114	86	153	113	79	243	51	124	143
	Mean	3.20	3.04	2.93	3.14	3.21	2.92 ^a	3.15 ^{ab}	3.27 ^b	2.84 ^a	3.25 ^b	3.08 ^{ab}	2.95 ^a	3.31 ^b	75.13 ^a	82.81 ^b	86.67	88.67	85.53	74.42	79.41	80.97	74.05	79.63	71.57	78.23	80.07
	Std. dev.	1.00	0.94	0.97	1.00	0.92	0.96	0.93	1.02	0.97	0.96	1.00	0.91	0.98	34.22	39.00	31.71	27.82	31.71	40.40	36.06	35.56	39.11	36.74	39.06	38.38	36.16
	p-value, ANOVA	0.130		0.181			0.043 [*]			0.001 ^{**}		0.009 ^{**}			0.049 [*]		0.665			0.443			0.249		0.380		
Hormone free	n	197	158	60	181	114	86	153	113	79	243	51	124	143	197	158	60	181	114	86	153	113	79	243	51	124	143
	Mean	3.14	3.07	2.99	3.10	3.19	2.80 ^a	3.19 ^b	3.24 ^b	2.72 ^a	3.27 ^b	3.06 ^{ab}	2.93 ^a	3.27 ^b	75.13	82.91	80.00	77.35	79.82	77.91 ^a	92.16 ^b	88.50 ^b	82.28	89.09	81.37 ^a	85.48 ^{ab}	92.31 ^b
	Std. dev.	1.07	1.00	1.00	1.12	0.92	1.02	1.05	1.00	1.16	0.94	1.03	1.03	1.03	39.00	34.22	37.05	38.52	35.02	38.04	22.30	29.13	34.00	27.92	34.58	32.37	22.45
	p-value, ANOVA	0.558		0.489			0.006 ^{**}			0.000 ^{**}		0.027 [*]			0.277		0.813			0.001 ^{**}			0.076		0.033 [*]		
Karoo lamb	n	197	158	60	181	114	86	153	113	79	243	51	124	143	197	158	60	181	114	86	153	113	79	243	51	124	143
	Mean	3.46	3.33	2.83 ^a	3.38 ^b	3.75 ^c	3.17 ^a	3.45 ^b	3.54 ^b	2.71 ^a	3.69 ^b	3.22 ^a	3.20 ^a	3.64 ^b	85.79	89.24	84.7	87.3	89.7	84.88	87.45	89.73	81.01 ^a	89.47 ^b	84.31	86.13	89.09
	Std. dev.	1.00	0.98	0.93	1.05	0.78	1.00	1.01	0.93	1.06	0.82	1.05	1.03	0.93	31.15	27.84	16.6	17.8	16.7	19.87	17.15	15.15	21.22	15.46	20.91	18.24	15.52
	p-value, ANOVA	0.200		0.000 ^{**}			0.026 [*]			0.000 ^{**}		0.001 ^{**}			0.220		0.183			0.146			0.000 ^{**}		0.175		
		Subjective consumerism knowledge score: A low score (i.e. 1–2.5 out of 5) ($\leq 50\%$) indicates a low level of subjective knowledge. A score of 2.55–3.74 out of 5 (50.1% – 74.9%) indicates a reasonable level of subjective knowledge. A high score (i.e. ≥ 3.75 out of 5) ($\geq 75\%$) indicates a high level of subjective knowledge.													Objective knowledge score: A score $\leq 50\%$ indicates a low level of objective knowledge. A score between 50% and 75% indicates a reasonable level of objective knowledge. A score $\geq 75\%$ indicates a high level of objective knowledge.												

ANOVA, analysis of variance * Significant at the 5% level, ** Significant at the 10% level, Means with different superscripts differ significantly on the 5% level, LSD Pairwise post-hoc tests

Table 4.9 shows that levels of subjective knowledge about grass-fed only varied significantly by population group ($p = 0.003$), with White respondents (mean = 3.31) scoring significantly higher than Black respondents (mean = 2.93), meaning the White respondents were more confident about what they thought they knew of grass-fed than the Black respondents were. The ANOVA to compare the mean scores for the objective knowledge about grass-fed across the sample demographic characteristics, revealed no significant difference.

The ANOVA revealed that levels of subjective knowledge about free range varied significantly by population group ($p = 0.000$), with White respondents (mean = 3.54) scoring significantly higher than Black respondents (mean = 2.99), and by monthly household income ($p = 0.036$), with the Elite group (mean = 3.50) scoring significantly higher than the middle-income group (mean = 3.32.). White consumers and Elite-income consumers probably felt that they knew more about the free range claims pertaining to lamb or mutton as they generally consume more lamb or mutton and therefore probably have more product-related experience than Black consumers and middle-income consumers. The ANOVA also revealed that levels of objective knowledge about free range varied significantly by level of education ($p = 0.005$) – respondents with a postgraduate qualification (mean = 79.42%) scoring significantly higher than respondents with only secondary schooling (mean = 70.35%), by population group ($p = 0.000$) – Whites (mean = 77.06%) scoring higher than Blacks (mean = 66.77%), and by monthly household income ($p = 0.001$) – the Elite-income group (mean = 78.15%) scoring significantly higher than the Upper middle-income group (mean = 70.56%), and the Middle-income group (mean = 67.65%) (see Table 4.9). While objective knowledge relies largely on stored information on a product class, subjective knowledge relies more on product-related experience (Park *et al.*, 1994). Consumers with high objective knowledge have been found to search for additional product-related information, and their search tends to be more efficient and productive as they can comprehend information better, know what information is relevant and what is not, and use fewer resources in the processing (Alba & Hutchinson, 1987). Based on their high level of objective knowledge about free range, postgraduate respondents, White respondents and the respondents from the Elite income group can be regarded as experts.

The ANOVA revealed that levels of subjective knowledge about antibiotic free varied significantly by level of education ($p = 0.043$), with respondents with postgraduate training (mean = 3.27) scoring significantly higher than those with only secondary school training (mean = 2.92), and by population group ($p = 0.001$), with Whites (mean = 3.25) scoring significantly higher than Blacks (mean = 2.84), as well as levels of income ($p = 0.009$), with the Elite-income group (mean = 3.31) scoring significantly higher than upper-middle-income group (mean = 2.95). The ANOVA also revealed that levels of objective knowledge about antibiotic free varied significantly by gender ($p = 0.049$), males (mean = 75.13%) scoring significantly lower than

females (mean = 82.91%) – probably because females took note of the antibiotic scare prevailing worldwide (Cuacci, 2016; Oyesola, 2016) (see Table 4.9).

The ANOVA revealed that levels of subjective knowledge about hormone free varied significantly by level of education ($p = 0.006$), respondents with postgraduate training (mean = 3.24) and degrees (mean = 3.19) scoring significantly higher than respondents with only secondary schooling (mean = 2.80), and also by population group ($p = 0.000$), with Whites (mean = 3.27) scoring significantly higher than Blacks (mean = 2.72). The difference between income groups is also significant ($p = 0.027$), with the Elite-income group (mean = 3.27) scoring significantly higher than the upper-middle-income group (mean = 2.93). In terms of objective knowledge scores, significant differences were found between education groups ($p = 0.001$), where respondents with school training only (mean score = 77.91%) scored significantly lower than respondents with a degree (mean = 92.16%) and a postgraduate qualification (mean = 88.50%). There was also a significant difference by income ($p = 0.033$), with the Elite group (mean = 92.31%) scoring significantly higher than the middle-income group (mean = 81.37%).

The ANOVA test shows significant differences in terms of mean scores for the subjective knowledge about Karoo lamb by age group ($p = 0.000$), with the mature group (mean = 3.75) scoring significantly higher than the middle-aged group (mean = 3.38), which is in turn significantly higher than the Millennials (mean = 2.83); by level of education ($p = 0.026$), with respondents with a postgraduate qualification (mean = 3.54) and a degree qualification (mean = 3.45) scoring significantly higher than respondents with only secondary schooling (mean = 3.17); by population group ($p = 0.000$), Whites (mean = 3.69) scoring significantly higher than Blacks (mean = 2.71), and by income group ($p = 0.001$), the Elite-income group (mean = 3.64) scoring significantly higher than the upper-middle-income group (mean = 3.20) and the middle-income group (mean = 3.22). In the case of objective knowledge about Karoo lamb, a significant difference ($p = 0.000$) was also found between population groups, with Whites (mean = 89.47%) scoring significantly higher than Blacks (mean = 81.01%).

In the context of this study, a higher level of income can be associated with a higher level of subjective and objective knowledge about free range, and a higher level of subjective and objective knowledge about hormone free. Ellen (1994) examined the relationship between knowledge, pro-ecological attitudes and behaviours, and found that higher income is significantly and positively related to both subjective and objective knowledge. However, one should note that Ellen's study involved a different knowledge domain-specific topic and was conducted in a US context.

In the current study, both Black and White respondents' subjective knowledge was lower than their objective knowledge pertaining to most of the respective claims, implying that respondents believed that they knew less about the claims than they actually did. Black respondents' subjective knowledge about all of the claims was significantly lower than that of White respondents, implying that they were less self-confident about their knowledge of these claims than the White respondents. Compared to the other production process claims, White respondents only had a higher level of objective knowledge than black respondents pertaining to free range and Karoo lamb, probably because of higher exposure to free-range products and Karoo Lamb, and might have more factual knowledge about these topics.

Traditionally the wealthier segments of the South African population can afford lamb/mutton products, while the low-income consumer segment has a clear preference for chicken, followed by beef, and middle-class consumers can afford beef, processed pork and beef sausage (Vermeulen *et al.*, 2015). As the emerging Black middle-class consumers are becoming more upwardly mobile, the demand for beef (red meat) is expected to stay on the increase (Labuschagne, Louw & Ndanga, 2011). Emerging consumers generally purchase luxury products to signify their newly achieved status (UCT University of Cape Town Unilever Institute of Strategic Marketing, 2007); one can therefore assume that the growing middle class will probably consume more lamb as part of their newly acquired lifestyle. Bearing this in mind and the fact that White consumers had a higher level of subjective knowledge pertaining to all of the claims and a higher level of objective knowledge about free range and about Karoo lamb, one can conclude that Black and White consumers' subjective and objective knowledge of specific production processes differs.

Respondents with a degree or a postgraduate qualification had a higher level of subjective knowledge about hormone free and Karoo Lamb. They also had more objective knowledge about hormone free, while respondents with a postgraduate qualification had more objective knowledge about free range than those with a secondary education. In general, it appears that a higher level of education can be associated with a higher level of subjective and objective knowledge pertaining to some of the claims. Previous research confirmed that a higher level of education can be linked to a higher level of subjective/objective product knowledge. For example, Forbes, Cohen and Dean (2008) and Robson, Plangger, Campbell and Pitt (2014) have found that higher objective knowledge about wine was significantly linked to a higher education, confirming that a higher level of education can be associated with a higher level of objective knowledge pertaining to specific products. House *et al.* (2004) found that respondents with a college education had significantly higher subjective and objective knowledge about genetically modified foods.

In the current study, females were significantly more objectively knowledgeable about antibiotic free claims pertaining to mutton/lamb than males were. Females are probably more aware of media reports and word-of-mouth about the overuse of antibiotics that has led to the frightening development of superbugs (Green, 2016). As females are stereotypically seen as being more compassionate and socially inclined, and generally act as caregivers (Bakshi, 2012), who typically would administer medication to sick children and adults, they are probably more aware of the negative effects of the overuse of antibiotics on humans. Females could also be more aware of the overuse of antibiotics in livestock farming to treat bacterial infections or to promote growth, having implications for our own wellbeing and our food safety perceptions of meat purchased at food retailers (Cuacci, 2016; Oyesola, 2016). Although conducted on a different knowledge domain-specific topic, previous studies on the relationship between gender and objective knowledge about wine are inconclusive. For example, Forbes *et al.* (2008) found that males were significantly more objectively knowledgeable about wine than females were, while Robson *et al.* (2014) suggested that higher age, higher education and being female are significant predictors of higher objective knowledge about wine. However, it should be noted that Robson *et al.* (2014) questioned the marked differences in gender effects between their study and previous work, and suggested that the gender difference could be due to random error or to sampling bias.

This study also highlighted that subjective knowledge about Karoo Lamb varied by age group ($p = 0.000$), with mature consumers scoring significantly higher than the middle-aged group and the Millennials. More mature consumers have probably gained more product experience with Karoo Lamb and have had more exposure to information pertaining to Karoo Lamb than their younger counterparts. Previous studies found that age was correlated with objective product knowledge. For example, Gámbaro *et al.* (2013) found that older consumers had more actual knowledge about olive oil, probably because they were better acquainted with nutritional facts and consumed more traditional Mediterranean foods than younger consumers, and Forbes *et al.* (2008) found higher age and higher education to be significant predictors of higher objective knowledge about wine.

4.2.5 Objective 5 – Relationships between consumers’ knowledge of selected production process claims and the claim of geographic origin and their willingness to pay a premium for fresh lamb or mutton

Respondents had to rate their willingness to pay more for pre-packaged lamb or mutton with specific characteristics on a 5-point Likert-type agreement scale, where 1 represented “Strongly disagree” and 5 represented “Strongly agree” (Question 19, paper-based questionnaire). The

descriptive results pertaining to consumers' willingness to pay more for pre-packaged lamb or mutton with specific characteristics are provided in Table 4.10.

TABLE 4.10: CONSUMERS' WILLINGNESS TO PAY MORE FOR PRE-PACKAGED LAMB OR MUTTON WITH SPECIFIC CHARACTERISTICS

Willingness to pay more for pre-packaged lamb or mutton with specific characteristics	Level of agreement Number of responses (%)					Mean
	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree	
I am willing to pay more for pre-packaged lamb or mutton if the animal was only grass-fed	45 (12.7%)	45 (12.7%)	104 (29.3%)	100 (28.2%)	61 (17.2%)	3.25
I am willing to pay more for pre-packaged lamb or mutton if the animal roamed freely	43 (12.1%)	42 (11.8%)	97 (27.3%)	110 (31.0%)	63 (17.7%)	3.30
I am willing to pay more for pre-packaged lamb or mutton if the animal was never given hormones	44 (12.4%)	40 (11.3%)	73 (20.6%)	111 (31.3%)	87 (24.5%)	3.44
I am willing to pay more for pre-packaged lamb or mutton if the animal was never given routine antibiotics	44 (12.4%)	52 (14.6%)	91 (25.6%)	97 (27.3%)	71 (20.0%)	3.28
I am willing to pay more for pre-packaged lamb or mutton if the animal was raised in the Karoo region	54 (15.2%)	46 (13.0%)	114 (31.1%)	88 (24.8%)	53 (14.9%)	3.11

Table 4.10 shows that more than half of the respondents (55.6%) were prepared to pay more for lamb/mutton if the animal was never given hormones, while fewer than half was prepared to pay more if the animal was only grass-fed (45.4%), roamed freely (48.7%), or was never given routine antibiotics (47.3%), and over a third was willing to pay more for Karoo Lamb (39.7%). These findings are not surprising as consumers generally perceive lamb/mutton to be less affordable than beef, pork or chicken (Cawthorn *et al.*, 2013; Kirsten *et al.*, 2012, Vermeulen *et al.*, 2015).

The results of Kirsten *et al.*'s (2012) study, using a survey to investigate the reputation of Karoo Lamb through consumers' awareness and perceptions of the product, showed that only 27% of consumers who were aware of Karoo lamb/mutton were willing to pay a premium for Karoo mutton/lamb compared to "regular lamb/mutton", comparing well with the low willingness to purchase Karoo lamb in the current study. In a different study, employing an experimental auction to determine South African consumers' willingness to pay for certified Karoo lamb, almost 58% of the sample indicated that they were willing to pay a premium for Karoo lamb. Although the findings from the above-mentioned studies are different, one should bear in mind that different methodologies were employed, implying that the conclusions from consumer studies could be framed by the methods used (Kirsten *et al.*, 2017).

ANOVA was performed to compare the mean scores for the subjective and objective knowledge pertaining to "grass-fed", "free range", "antibiotic free", "hormone free" and "Karoo lamb" across

the categories for willingness to pay more for pre-packaged lamb/mutton if the animal was reared using these production processes and reared in the Karoo. The results are shown in Table 4.11.

TABLE 4.11: THE RELATIONSHIP BETWEEN SUBJECTIVE AND OBJECTIVE KNOWLEDGE OF SPECIFIC CLAIMS ON WILLINGNESS TO PAY MORE CATEGORIES

Knowledge of claims		Subjective knowledge score					Objective knowledge score				
		Willingness to pay more					Willingness to pay more				
		Strongly disagree	Disagree	Neutral	Agree	Strongly agree	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
Grass-fed	n	45	45	104	100	61	45	45	104	100	61
	Mean	2.96 ^a	3.37 ^{bc}	3.11 ^{ab}	3.21 ^{abc}	3.48 ^c	60.74	66.67	64.74	69.33	69.40
	Std. dev.	1.08	1.02	.87	.82	1.02	32.79	32.57	27.41	27.08	30.00
	p-value, ANOVA	0.029*					0.453				
Free range	n	43	42	97	110	43	43	42	97	110	63
	Mean	3.05 ^a	3.38 ^{ab}	3.27 ^{ab}	3.49 ^b	3.57 ^b	74.42	73.81	73.71	75.00	74.21
	Std. dev.	1.00	1.00	.86	.77	1.00	23.46	24.04	19.56	21.15	18.50
	p-value, ANOVA	0.022*					0.453				
Hormone free	n	44	40	73	111	87	44	40	91	111	71
	Mean	2.79	2.97	3.09	3.13	3.30	80.68	86.54	86.25	88.19	90.23
	Std. dev.	1.03	1.21	.81	.89	1.05	35.91	33.01	25.29	29.78	28.62
	ANOVA p-value	0.062					0.442				
Antibiotic free	n	44	52	91	97	71	44	52	91	97	71
	Mean	3.11	3.12	3.02	3.05	3.39	73.86	70.19	78.02	82.99	82.39
	Std. dev.	1.09	1.19	.94	.93	1.14	41.06	30.38	39.20	34.04	39.53
	p-value, ANOVA	0.405					0.239				
Karoo lamb	n	54	46	114	88	53	54	46	114	88	53
	Mean	2.95 ^a	3.30 ^b	3.35 ^b	3.58 ^{bc}	3.79 ^c	85.56	86.09	87.89	88.86	88.30
	Std. dev.	1.17	1.14	.97	.77	.86	16.67	18.79	17.37	16.01	18.58
	p-value, ANOVA	0.000**					0.792				
		Subjective consumerism knowledge score: A low score (i.e. 1–2.5 out of 5) (\leq 50%) indicates a low level of subjective knowledge. A score of 2.55–3.74 out of 5 (50.1%–74.9%) indicates a reasonable level of subjective knowledge. A high score (i.e. \geq 3.75 out of 5) (\geq 75%) indicates a high level of subjective knowledge.					Objective knowledge score: A score \leq 50% indicates a low level of objective knowledge. A score between 50% and 75% indicates a reasonable level of objective knowledge. A score \geq 75% indicates a high level of objective knowledge.				

ANOVA, analysis of variance * Significant at the 5% level, ** Significant at the 1% level

Means with different superscripts differ significantly on the 5% level

LSD Pairwise post-hoc tests

Table 4.11 shows that willingness to pay more for lamb/mutton if the animal was grass-fed ($p = 0.021$), roamed freely ($p = 0.022$), or was raised in the Karoo ($p = 0.000$) varied by level of subjective knowledge. Post-hoc LSD test were used to do pairwise comparisons of groups. Respondents who strongly agreed to be willing to pay more for grass-fed lamb or mutton, scored significantly higher on the subjective knowledge about grass-fed (mean = 3.48) than those who were neutral (mean = 3.11) and who strongly disagreed (mean = 2.96). In the case of the free-range claim, respondents who strongly agreed and those who agreed (mean 3 = 3.57) to be willing to pay more scored significantly higher on subjective knowledge about free range than those who strongly disagreed (mean = 3.05). In the case of Karoo Lamb, respondents who strongly agreed that they would be willing to pay more scored significantly higher on subjective knowledge about Karoo Lamb (mean = 3.79) than those who were neutral (mean 3.35) or who disagreed (mean=3.30) to be willing to pay more, and than those who strongly disagreed (mean 2.95) to be willing to pay more. In addition, no significant difference could be found relating objective knowledge to the willingness to pay more, meaning that irrespective of their level of objective knowledge, respondents were not necessarily not willing to pay more but there were no differences in their willingness to pay more for mutton/lamb.

Various researchers indicate that subjective knowledge is a stronger motivation for purchase-related behaviours than objective knowledge (Selnes & Gronhaug, 1986 in Aertsens, Mondelaers, Verbeke, Buysse, & Van Huylenbroeck, 2011). In line with this, House *et al.* (2004) have found that higher levels of subjective knowledge are significantly and positively related to the willingness of consumers to eat genetically modified food, while they did not observe this relationship for objective knowledge.

In the context of this study, a higher levels of subjective knowledge about the specific claims had a positive impact on consumers' willingness to pay more for lamb/mutton, while objective knowledge was not related to willingness or intention to pay more.

4.3 CONCLUSION

The chapter provided an overview of the results of the study in terms of the specified objectives. Due to the non-probability convenience sampling technique the results of the study are limited to the specific sample of consumers, meaning that the findings cannot be generalised to the larger South African population. However, the study does provide valuable insights into differentiation between consumers' subjective and objective knowledge of specific production process claims and the claim of geographic origin pertaining to lamb or mutton.

The results described in this chapter involved descriptive and inferential data analysis techniques and the interpretation of the results was substantiated on the basis of existing empirical evidence. In the following chapter the overall conclusions drawn from the results are discussed, and the implications of the study, the limitations of the study, and some recommendations for future research are provided.

CHAPTER 5

Conclusions and recommendations

5.1 INTRODUCTION

This chapter presents the conclusions of the study in the order of the objectives (and sub-objectives). The theoretical contribution, its practical implications, its limitations, and recommendations for future research are also discussed.

5.2 CONCLUSIONS

5.2.1 Consumers' subjective and objective knowledge of production process claims and the claim of geographic origin pertaining to lamb/mutton

Subjective knowledge refers to the individual's own perception of what he/she knows about a specific subject (Brucks, 1985; Dodd *et al.*, 2005; Gámbaro *et al.*, 2013), which is based on expertise, as well as experience and other factors, which reflects confidence (Alba & Hutchinson, 1987, 2000; Donoghue *et al.*, 2016). The respondents of this study rated themselves the highest in terms of their subjective knowledge about Karoo Lamb and subjective knowledge about free range, followed by subjective knowledge about grass-fed, subjective knowledge about antibiotic-free and subjective knowledge about hormone-free. The overall means for the subjective knowledge test varied between 3.11 and 3.40, implying that the respondents were reasonably confident about their subjective knowledge pertaining to these claims. Theoretically, subjective knowledge is related to pre-existing knowledge that is primarily accumulated by product-related experiences. It therefore follows that the respondents' reasonable level of subjective knowledge could be attributed to a relatively lower level of product experience. Alternatively, respondents could have shaded their responses not to appear overconfident by engaging in social desirability bias. The leading nature of the items for the subjective knowledge test could have contributed to the latter; however, the five items for each of the respective subjective knowledge tests showed good internal consistency, with the Cronbach's alpha values exceeding the 0.70 criterion (Anastasi & Urbina, 1997:91) in all the cases, confirming the usability of Flynn and Goldsmith's (1999) standardised scale to measure subjective knowledge.

The findings indicate that the respondents had a high level of objective knowledge pertaining to Country-of-origin, geographic region, Karoo Lamb, hormone free and antibiotic free, while they had a reasonable level of knowledge regarding free range and grass-fed. Surprisingly a limited level of knowledge was found in class classification. The reasonable to high levels of objective knowledge reflect respondents actual knowledge content stored in memory, including terminology, product attributes, attributes evaluations and brand facts (Dodd, 2005). The high levels of objective knowledge could be due to the respondents' reaction to the descriptive wording used to develop the items to measure the very domain-specific concepts. On the other hand, modern consumers are exposed to an abundance of marketing material about various products. In recent years, food retailers often advertise their products by referring to specific production processes to inter alia reflect ethical animal rearing practices and corporate social responsibility. Consumers interpreting and storing such factual information in memory could therefore genuinely be knowledgeable about the specific production processes.

Theoretically, objective knowledge increases consumers' self-confidence (Chocarro *et al.*, 2009); however, irrespective of respondent's high level of objective knowledge, they were not very confident about what they thought they knew. Overall, the respondents' subjective knowledge (self-rated knowledge or perceived knowledge) about grass-fed, free range, antibiotic free, hormone free and Karoo Lamb was significantly lower than their objective knowledge (actual knowledge) about these claims. The results of this study shows that what respondents think they know, i.e. their perception of the nature and extent of their own knowledge, and what they actually know about selected lamb or mutton production processes are two different things, potentially influencing consumers' search and choice behaviours differently. Knowledge of production process claims therefore manifests in two dimensions: subjective and objective knowledge. The results confirm that what we think we know (subjective knowledge) and what we actually know (objective knowledge) are two different things. Researchers should distinguish between these types of knowledge to fully understand consumers' knowledge of production process claims, as both subjective and objective knowledge is partially the result of experience which could have different effects on consumers' decision making and behaviour.

5.2.2 Consumers' consideration of the importance of specific evaluative criteria

Respondents had to rate the importance they attach to specific evaluative criteria on a 5-point Likert-type scale anchored by 1 "Not at all important" and 5 "Extremely important". The respondents considered both sell-by date and use-by date, as well as price and price per kilogram to be very to extremely important, with the higher mean importance ratings for price and price per kilogram than for sell-by date and use-by date, confirming that product pricing and

date information are dominant purchase considerations of middle- and high-income red-meat consumers. The respondents also considered fatness, antibiotic free and free range to be very to extremely important, with mean importance ratings slightly lower than for date information and product pricing. The production processes such as antibiotic free and free range could signify safety to consumers, but could also imply added costs that could be perceived negatively by price-sensitive consumers and positively by quality-conscious consumers. The respondents regarded hormone free, organic, country of origin and Karoo Lamb as moderately important.

The results of the question pertaining to rating the “important versus less important evaluative criteria” and the “unimportant versus more important evaluative criteria” confirmed the following:

- (1) that the majority of the respondents regarded price per kilogram as the most important criterion, followed by use-by date, sell-by date and price
- (2) that between 20 and 40% of the respondents considered production process claims including antibiotic free, free range and hormone free as important
- (3) that fewer than 20% of the respondents regarded fatness, Karoo Lamb, country of origin and organic as important

The results of the question pertaining to the “unimportant versus more important evaluative criteria” confirmed that the consistency of the data, as

- (1) very few of the respondents rated product pricing and date information as unimportant
- (2) only between 20 and 40% of the respondents rated hormone free, free range, antibiotic free, organic, fatness and Karoo lamb – all pertaining to production processes and by implication the safety of mutton or lamb – as unimportant
- (3) almost half of the respondents rated country of origin as unimportant

The above findings are in line with previous studies conducted about the importance of specific attributes in the South African context (Du Plessis & Du Rand, 2012; Vermeulen *et al.*, 2014; Kirsten *et al.*, 2017).

It is clear from the above results that consumers use meat labels to determine the quality of the product and that price per kg plays a major role in their decision making when purchasing meat. The freshness of the product also plays a major role and is indicated by the importance attached to both the sell-by date and the use-by date by respondents.

5.2.3 The relationship between consumers' knowledge of selected claims and specific evaluative criteria

Higher levels of subjective knowledge are related to higher importance ratings for free-range lamb, hormone-free lamb, antibiotic-free lamb and Karoo lamb. The higher the subjective knowledge of claims, the higher the importance ratings, implying that the more confident respondents feel about their knowledge of the respective claims, the more important they regard product label information about the claims, though respondents only had a reasonable level of subjective knowledge pertaining to all of the relevant claims. No significant relationships exist between the objective knowledge pertaining to free range, hormone free and antibiotic free, and the importance ratings pertaining to free range, hormone free and antibiotic free. It is noteworthy that objective Karoo lamb knowledge is related to the importance attached to Karoo Lamb information, with a higher level of knowledge associate with a higher level of importance. Karoo lamb means that the animal was mainly fed on indigenous shrubs typical of the Karoo, using free range, hormone free and antibiotic free production processes. Due to intentional marketing in popular media such as newspapers, television, radio and the Internet over the last few years, consumers might be more aware of factual information pertaining to Karoo lamb, which would explain their higher importance rating for Karoo Lamb information compared to hormone free, free range, and antibiotic free information.

The findings of the study point to the differences in subjective knowledge and objective knowledge, and the different effects of the different types of knowledge on consumers' importance ratings pertaining to specific production process claims.

5.2.4 The relationship between demographic characteristics and consumers' knowledge of specific claims

In this study, both Black and White respondents believed that they knew less about all of the production process claims pertaining to grass-fed, free range, antibiotic free, hormone free and Karoo Lamb than they actually did. In addition, Black respondents' subjective knowledge with regard to all of the claims was significantly lower than that of the White respondents, implying that they were less self-confident than White respondents when it comes to decision making on what to look for when purchasing pre-packaged lamb/mutton. Compared with the other production process claims, White respondents only had a higher level of objective knowledge than Blacks pertaining to free range and Karoo lamb, probably because of more exposure to free-range products and Karoo Lamb, and because they have more factual knowledge of these topics. One can conclude that Black and White respondents' subjective and objective knowledge of specific production processes differed.

In general, it appears that a higher level of education is related to a higher level of subjective knowledge about hormone free, subjective knowledge about Karoo Lamb, and subjective knowledge about antibiotic free, and to a higher level of objective knowledge about hormone free and objective knowledge about free range. In this study, a higher level of income is related to a higher level of subjective and objective knowledge about free range, and to a higher level of subjective and objective knowledge about hormone free, reflecting that higher income consumers have more self-confidence and more accurate information pertaining to these claims stored in memory. In addition, females were significantly more objectively knowledgeable about antibiotic free claims pertaining to mutton/lamb than males were, probably due to their heightened awareness of the overuse of antibiotics in humans and/or in livestock farming owing to media campaigns against these issues, having implications for their families' wellbeing and their food safety perceptions of meat purchased at food retailers. Only subjective Karoo lamb knowledge varied by age group, mature consumers scoring significantly higher than the middle-aged group and the Millennials, as mature consumers have probably gained more product experience with Karoo Lamb and more exposure to the Karoo concept. Mature consumers could therefore be more aware of the unique taste of Karoo Lamb and could have specific perceptions of the Karoo, contributing to their higher level of subjective knowledge. Echoing the latter-mentioned premise, Van Zyl *et al.* (2013) suggested that images of the Karoo (e.g. windmills and sheep, farm homesteads, endless vistas) could awaken nostalgia of days gone by, especially for older participants potentially more exposed to the traditional Karoo concept.

5.2.5 Consumers' knowledge of selected production process claims and their willingness to pay a premium for fresh lamb or mutton

Slightly more than half of the respondents (55.8%) were prepared to pay more for lamb/mutton if the animal was never given hormones, while fewer than half was prepared to pay more if the animal was only grass-fed (45.4%), roamed freely (48.7%), or was never given routine antibiotics (47.3%), and only more than a third was willing to pay more for Karoo Lamb (39.7%). These findings are in line with previous studies suggesting that consumers generally perceive lamb/mutton to be less affordable than beef, pork and chicken (Cawthorn *et al.*, 2013; Vermeulen *et al.*, 2015). However, a willingness to purchase lamb or mutton could also be related to consumers' knowledge of specific animal production processes, consumers' perception of the healthiness of lamb or mutton (factors related to human health and nutrition), food safety perceptions, including the risks involved in animal production processes, perceptions of animal welfare, and demographic characteristics. For the purpose of this study only knowledge of production processes as such were measured and related to willingness to pay more.

A higher level of subjective knowledge about the specific claims had a positive impact on consumers' willingness to pay more for lamb/mutton, while objective knowledge was not related to willingness or intention to pay more. This finding could have implication for researchers in the sense that subjective knowledge could possibly be considered a better "measure" of consumers' willingness to purchase lamb/mutton than their objective knowledge. As subjective knowledge reflects self-confidence, subjective knowledge can influence the decision makers' perception of their ability to process information (Dodd *et al.*, 2005) and ultimately their decision to purchase lamb or mutton. In addition, how much target consumers think they know, rather than what they actually know about specific production process claims, can potentially impact the red meat industry's marketing strategy to promote and sell lamb or mutton products. Although the demand for lamb or mutton seems to be very price sensitive in theory (Vermeulen *et al.*, 2015; Kirsten *et al.*, 2017) there are various other factors that could play a role in consumers' willingness to purchase lamb or mutton.

5.3 CONTRIBUTION TO EXISTING THEORY

In a South African context, a range of consumer studies have been conducted over the past few years to understand the influence of food labels on South African consumers' purchasing behaviour, the specific factors influencing consumer decision making pertaining to pre-packaged red meat, and specifically consumers' perceptions about the Karoo region and Karoo Lamb, as well as consumers' willingness to pay for this product of origin. Extending these studies, the current study contributes to existing theory which broadens our understanding of consumers' subjective and objective knowledge of selected production processes associated with pre-packaged fresh lamb or mutton. Also the relationship between the demographic characteristics and the specific knowledge dimensions, the relationship between subjective and objective knowledge and the importance of specific evaluative criteria as well as the relationship between the knowledge dimensions and willingness to pay more for lamb or mutton with specific characteristics. The research specifically contributes to theory on consumer protection, focusing on the consumer's right to be informed. From a rational consumer decision-making perspective, informed consumers would be able to make informed decisions, and in the context of this study, specifically purchasing decisions pertaining to lamb or mutton with specific characteristics, and by implication to distinguish between truthful and misleading product claims.

5.4 IMPLICATIONS OF THE STUDY

In this study, higher levels of subjective knowledge of specific production process claims are linked to higher importance ratings pertaining to product label information (i.e. specific extrinsic product attributes or evaluative criteria), and to higher willingness ratings to pay more for lamb or mutton with specific characteristics. These findings suggest that the more confident respondents feel about their knowledge about the respective claims, the more important they would consider specific product label information, and the more willing they are to pay more for lamb or mutton. While objective knowledge of claims is not related to the importance of label information, including free range, hormone free and antibiotic free, objective knowledge about Karoo lamb is related to the importance attached to Karoo Lamb label information, as consumers probably possess more factual knowledge pertaining to Karoo lamb compared to hormone free, free range, antibiotic free as such due to increased media coverage on the topic of Karoo Lamb in recent years. However, objective knowledge about production processes is not related to willingness to pay more for lamb or mutton. It therefore appears that subjective knowledge could be a better indicator of consumers' importance rating of evaluative criteria pertaining to lamb or mutton and of their willingness to pay more for lamb or mutton than their objective knowledge. These findings have practical implications for researchers and other role players in the food industry, including marketers and retailers.

As such, researchers should distinguish between subjective and objective knowledge about production process and the possible different effects of the different knowledge dimensions on consumers' decision making and behaviour. In addition, marketers and retailers could develop promotional campaigns to stimulate consumers' confidence concerning their knowledge of production processes, which may lead to an increase in consumption rates among regular consumers, while it may also encourage less frequent consumers to purchase and become acquainted with lamb or mutton. As objective knowledge generally impacts consumers' subjective knowledge, the provision of production process information could increase consumers' confidence in lamb or mutton. Packaging labels and promotional activities such as advertising in newspapers, radio, television, magazines, online advertising and in-store promotions including food demonstrations should therefore be appropriate in terms of terminology used and could focus on the goodness of lamb or mutton in terms of production processes used. Although objective knowledge would not necessarily increase consumers' willingness to purchase lamb or mutton, it could help to boost consumers' confidence in specific production processes.

The results of the current study show that the respondents' were not as concerned about the production process claims as they were about price and date information provided on lamb or

mutton product labels. Bernués, Olaizola and Corcoran's (2003) study found that European consumers considered the origin/region of production and the deadline (consume by) information for beef and lamb the most important informational cues to appear on the label, while cues on the production processes, traceability of animals and products, and the quality controls put in place by the industry (quality assurance systems) were also highly relevant. When comparing the results of the two studies it is clear that South African consumers are not as production processes orientated as European consumers, who are generally concerned about the impact of intensive rearing methods on the environment, animal welfare and the safety of food products (Harrington in Bernués *et al.*, 2003). In the South African context, marketers could focus their promotional strategies on the specific production processes by emphasising the advantages of lamb or mutton in terms of sustainability issues pertaining to human health, animal welfare and the environment. This could help to increase consumers' knowledge of, and confidence with, lamb or mutton produced using specific processes based on the pillars of sustainability. As consumers are the end-users in the meat production chain, it is important that they are informed of the specific production processes and the associated benefits for human health, animal welfare and the environment.

Consumers' subjective and objective knowledge about specific production process claims and about the claim of origin varies by demographic characteristics. For example, Black consumers are generally less confident about the respective production process claims than Whites; White respondents and mature consumers respectively have more expert knowledge about Karoo Lamb than Black respondents and Millennials; consumers with a higher level of education are more confident about Karoo Lamb claims and hormone-free claims, and generally have more objective knowledge about hormone-free claims and free-range claims than consumers with only secondary schooling education; high-income consumers are more confident, and have more objective knowledge about free-range claims and hormone-free claims than middle-income consumers. Marketers should therefore target promotional information about lamb or mutton to specific demographic groups to improve consumers' knowledge about the production processes associated with these products, in order to build confidence. Marketers should also consider the lifestyle factors associated with the specific demographic groups. Marketers could, for example, focus on the status or luxury associated with Karoo Lamb as niche product to promote awareness and sales among the Black middle class, who are generally prone to use specific products as a symbol of upward mobility. In addition, a specific approach would be required to convey promotional messages to the different age groups. For example, mature consumers could be targeted by focusing on the nostalgia associated with Karoo Lamb, while Millennials could be targeted by focusing on the "novelty" and the "fun and enjoyment" associated with Karoo lamb, as Millennials are generally more open to new ideas and are generally hedonistically inclined (Duh & Struwig, 2015).

Information about consumers' evaluation of the importance of specific sustainability labelling claims, and in the context of this study specific production process claims, is important to the food industry (food producers and manufacturers, food marketers), policy makers, governmental agencies and independent consumer protection organisations. As several lamb or mutton characteristics are credence attributes, labelling can play an important role in increasing efficiency in consumer choice in the lamb or mutton market. Pre-packaged fresh lamb or mutton should be appropriately labelled to target specific consumer groups. However, to facilitate consumers' interpretation of label information, sound subjective and objective knowledge of specific production processes is needed. One way to achieve this is by using meat labels and advertising together to educate consumers on the various production processes and the various benefits in terms of human health, animal welfare and the environment (production of origin-based meat). Policy developers, farmers and ultimately marketers and retailers of pre-packaged lamb or mutton should take note of the differences in consumers' subjective and objective knowledge pertaining to production process claims in order to develop appropriate consumer education programmes as part of their social responsibility toward the consumer community. Information and promotion campaigns should be targeted at stimulating consumers' confidence in the goodness of lamb or mutton. The whole distribution channel should accept the responsibility to provide consumers with suitable information about specific production process claims by means of intentional marketing in popular media such as newspapers, television, radio, websites, leaflets and in-store by means of food demonstrations to facilitate informed consumer decision making; this could in the end lead to an increase in consumption rates among regular lamb or mutton consumers, while it may also encourage less frequent consumers to purchase and become acquainted with lamb or mutton.

5.5 LIMITATIONS OF THE STUDY

The current study measured respondents' subjective and objective knowledge about selected production processes associated with lamb or mutton. Although the respondents had a high level of objective knowledge pertaining to the concepts Karoo Lamb, hormone free and antibiotic free, it is not clear whether the respondents knew that the term *Karoo Lamb* encompasses free-range, hormone-free, antibiotic-free and grass-fed production processes. These production processes are also related to sustainability issues pertaining to human health, animal welfare and the environment. The items to measure objective knowledge about the respective production processes were only worded in terms of production processes as such. It is therefore not clear whether the respondents were knowledgeable about the health benefits for humans, benefits in terms of animal welfare and/or benefits to the environment.

The respondents in this study merely ranked the importance of specific claims. Although their responses provide a superficial indication of an importance ranking, the understanding of the reasons behind their importance ranking is lacking. Therefore, qualitative research focusing on an in-depth understanding of the reasons underlying consumers' importance ranking/rating pertaining to specific production process claims is needed. The importance ranking pertaining to free range could be included in subsequent studies.

The respondents in this study were more educated, received a higher monthly income and consisted of more White people, implying that these groups were over-represented. In addition, due to the convenience sampling technique, the findings of this study cannot be generalised to the wider South African population. However, despite these limitations, the implications of this study can still be of importance and should be acknowledged.

5.6 RECOMMENDATIONS FOR FUTURE RESEARCH

In light of the conclusions and limitations of the study, some recommendations and possibilities for future research are given below.

This study provides a platform for further application of the measurement knowledge pertaining to production process claims. While this study confirmed the usability of Flynn and Goldsmith's (1999) standardised scale to measure subjective knowledge, respondents' objective knowledge of selected production processes was measured by developing an objective test pertaining to specific production processes. Future qualitative studies could investigate consumers' objective knowledge about production processes in terms of the benefits associated with consumers' health, animal welfare and the environment, to refine the development of an objective knowledge test based on a wider range of questions pertaining to the production processes. In addition, the potential of eye tracking technology as a way of discerning what food label information consumers really look at rather than relying on what they say they look at when asked, for example in surveys or focus groups, could be explored. Eye tracking technology would also allow the researcher to determine to what extent different types of labelling information affect purchasing decisions.

The approach in this study to measuring consumers' subjective and objective knowledge about production processes could possibly be applied in other emerging contexts where consumers generally lack awareness of consumer protection with regard to specific food production processes.

5.7 CONCLUSION

Conclusions of the research findings are presented in this chapter of the study. The findings of the study broadens our understanding of consumers' subjective and objective knowledge about selected production processes associated with pre-packaged fresh lamb or mutton, of the relationship between the demographic characteristics and the specific knowledge dimensions, of the relationship between subjective and objective knowledge and the importance of specific evaluative criteria, and of the relationship between the knowledge dimensions and willingness to pay more for mutton or lamb with specific characteristics. The findings have practical implications for producers, retailers, marketers and policy makers. A number of limitations were identified and recommendations for future research were made.

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ADDENDUM A

Online questionnaire

This email contains images. Please remember to enable your browser and security/permission settings for it to display correctly.
To ensure email delivery, please add frontdesk@consultapanel.co.za to your address book.

Let's talk about ...

YOUR RIGHT TO INFORMATION

to make informed purchase decisions.



ConsultaPanel's latest questionnaire

Gautengers, do you know which information to look for on product labels?

Dear Jessica

With the promulgation of the Consumer Protection Act in April 2011, all consumers in South Africa are assured of their consumer rights, including the right to information.

For example, specific information should be provided on the labels of pre-packaged lamb or mutton products to allow consumers to make informed purchase decisions.

Due to the previous mislabelling of meat products in South Africa and the meat scandal that broke in Europe in 2012, specific rules and regulations have been put in place that South African food retailers as well as other role players in the red meat industry need to adhere to.

The importance of the labelling of pre-packaged lamb and mutton can therefore not be emphasized enough. In addition, the printed information provided on the labels and packaging of meat products would allow consumers to compare specific product claims when making purchase decisions.

In partnership with the University of Pretoria, ConsultaPanel would like to understand consumers' knowledge of the right to this information and what it means.

This questionnaire will only take 15 minutes of your time.

Please [click here](#) to participate.

The answers to the TRUE OR FALSE questions will be revealed at the end of this questionnaire.

Ciao for now
The ConsultaPanel Team



Chat to us [here](#)
Unsubscribe me from this specific project only
Unsubscribe me from the ConsultaPanel
Our Awards Policy and T's & C's

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Welcome to the "Your right to information" questionnaire.

Kindly note this is an academic study on behalf of the University of Pretoria.

Here are a few general tips and tricks before we start:

- Don't use your internet browser's, back, reload and forward buttons when participating in our questionnaires as this may cause unintended results.
- Maximise the survey window then you don't have to scroll as much.
- We recommend you finish the questionnaire in one go.

Enjoy the questionnaire!

Next

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Do you purchase pre-packaged lamb / mutton products at least once a month?

- Yes
 No

Next

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Where do you purchase your pre-packaged lamb / mutton products from?

- Food retailer
 Butchery
 Both food retailers and butcheries
 None of the above

Next

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Which of the following pre-packed fresh red meat products do you purchase more frequently at food retailers?

Please indicate by using a scale of 1 to 4, where "1" means "Least frequent" and "4" means "Most frequent".

	Least Frequent		Most Frequent	
	1	2	3	4
Lamb	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Mutton	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Beef	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Pork	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Next

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How often do you buy pre-packaged fresh lamb / mutton products at food retailers?

- Once a month
- Maximum 2-3 times a month
- Maximum once a week
- More than once a week
- Every day

Next

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How often do you purchase pre-packaged fresh lamb / mutton at the following retailers?

	Never	Rarely	Sometimes	Often	Always
Game	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Makro	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Pick & Pay	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Checkers	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Woolworths	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Spar	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Other	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>



Next

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Please specify the other retailers you purchase pre-packaged fresh lamb / mutton from:



Next

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Who does the lamb / mutton shopping in your household?

	Never	Rarely	Sometimes	Often	Always
I / myself	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
My spouse / partner	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Other	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Next

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Please specify who else does the lamb / mutton shopping in your household:

Next

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When you purchase pre-packaged fresh lamb / mutton, how often do you read the information printed on the product label and/or packaging material?

	Never	Rarely	Sometimes	Often	Always
How often do you read the information printed?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Next

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Using a scale from 1 to 5 where "1" means "Strongly disagree" and "5" means "Strongly agree", or any number in between 1 and 5 depending on how strongly you feel.

I generally read information provided on the label and/or packaging of pre-packaged lamb / mutton products to determine / validate the following:

	Strongly disagree				Strongly agree
	1	2	3	4	5
The name of the cut for example lamb rib chops, leg of lamb	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Whether the animal was raised on independently certified farms	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Nutrition information, for example the energy value (KJ), protein content, cholesterol, total fat	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Whether the animal was able to roam freely	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Whether the animal was given growth stimulants	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>



Next

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Please continue to rate:

Using a scale from 1 to 5 where "1" means "Strongly disagree" and "5" means "Strongly agree", or any number in between 1 and 5 depending on how strongly you feel.

I generally read information provided on the label and/or packaging of pre-packaged lamb / mutton products to determine / validate the following:

	Strongly disagree				Strongly agree
	1	2	3	4	5
The unit price, i.e. the price per kilogram (R/Kg)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Whether the animal was given routine antibiotics	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
In what country the animal was raised for example product of South Africa or Namibia	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
In what geographic region the animal was raised i.e. Karoo Lamb	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The price of the product	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Whether the animal was "grass-fed"	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The Sell-by date	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Use-by date (expiry date)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>



Next

The following statements will be focused on "Grass-fed":

Using a scale from 1 to 5 where "1" means "Strongly disagree" and "5" means "Strongly agree", or any number in between 1 and 5 depending on how strongly you feel.

Indicate the degree to which you agree / disagree with each of the following statements concerning your knowledge of the information provided on the labels / packaging of pre-packaged lamb / mutton products:

	Strongly disagree				Strongly agree
	1	2	3	4	5
I know what "Grass-fed" lamb / mutton means	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I do not feel very knowledgeable about "grass-fed" lamb / mutton	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Among my circle of friends I am the expert on "grass-fed" lamb / mutton	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Compared to most other people, I know less about "grass-fed" lamb / mutton	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
When it comes to "grass-fed" lamb / mutton, I really do not know a lot	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>



Next

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The following statements will be focused on "Free-range":

Using a scale from 1 to 5 where "1" means "Strongly disagree" and "5" means "Strongly agree", or any number in between 1 and 5 depending on how strongly you feel.

Please continue indicating the degree to which you agree / disagree with the following statements:

	Strongly disagree				Strongly agree
	1	2	3	4	5
I know what "free-range" lamb / mutton means	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I do not feel very knowledgeable about "free-range" lamb / mutton	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Among my circle of friends I am the expert on "free-range" lamb / mutton	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Compared to most other people, I know the less about "free-range" lamb / mutton	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
When it comes to "free-range" lamb / mutton, I really do not know a lot	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>



Next

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The following statements will be focused on "Antibiotic free":

Using a scale from 1 to 5 where "1" means "Strongly disagree" and "5" means "Strongly agree", or any number in between 1 and 5 depending on how strongly you feel.

Please continue indicating the degree to which you agree / disagree with the following statements:

	Strongly disagree				Strongly agree
	1	2	3	4	5
I know what "antibiotic free" lamb / mutton means	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I do not feel very knowledgeable about "antibiotic free" lamb / mutton	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Among my circle of friends I am the expert on "antibiotic free" lamb / mutton	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Compared to most other people, I know the less about "antibiotic free" lamb / mutton	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
When it comes to "antibiotic free" lamb / mutton, I really do not know a lot	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>



Next

The following statements will be focused on "Hormone free":

Using a scale from 1 to 5 where "1" means "Strongly disagree" and "5" means "Strongly agree", or any number in between 1 and 5 depending on how strongly you feel.

Please continue indicating the degree to which you agree / disagree with the following statements:

	Strongly disagree				Strongly agree
	1	2	3	4	5
I know what "hormone free" lamb/mutton means	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I do not feel very knowledgeable about "hormone free" lamb/mutton	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Among my circle of friends I am the expert on "hormone free" lamb/mutton	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Compared to most other people, I know the less about "hormone free" lamb/mutton	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
When it comes to "hormone free" lamb/mutton, I really do not know a lot	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>



Next

The following statements will be focused on "Karoo Lamb":

Using a scale from 1 to 5 where "1" means "Strongly disagree" and "5" means "Strongly agree", or any number in between 1 and 5 depending on how strongly you feel.

Please continue indicating the degree to which you agree / disagree with the following statements:

	Strongly disagree				Strongly agree
	1	2	3	4	5
I know what "Karoo Lamb" means	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I do not feel very knowledgeable about "Karoo Lamb"	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Among my circle of friends I am the expert on "Karoo Lamb"	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Compared to most other people, I know the less about "Karoo Lamb"	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
When it comes to "Karoo Lamb", I really do not know a lot	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>



Next

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This section aims to measure your knowledge of the information provided on the labels / packaging of pre-packaged lamb / mutton products.

Please select true or false for each of the statement below.

The term "Grass-fed" indicates the following:

	Select option	
	True	False
Animals have been fed a diet that is natural to the animal	<input type="radio"/>	<input type="radio"/>
Animals have been raised on a diet almost exclusively of indigenous grass	<input type="radio"/>	<input type="radio"/>
Animals have been raised on a diet of indigenous grass as well as grain from a feedlot (a confined area where animal are fed mainly grain to reach a certain target weight)	<input type="radio"/>	<input type="radio"/>



Next

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Please select true or false for each of the statement below.

The term "Free range" indicates the following:

	Select option	
	True	False
Animals were allowed to roam freely in large pastures for their entire lives prior to slaughtering	<input type="radio"/>	<input type="radio"/>
Animal were not fed from a feedlot (a confined area where animals are fed mainly grain to reach a certain target weight)	<input type="radio"/>	<input type="radio"/>
Animals had ready access to the outdoors, fresh water and a natural diet to maintain full health and vigour	<input type="radio"/>	<input type="radio"/>
Meat classified as "Age Class A"	<input type="radio"/>	<input type="radio"/>



Next

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Please select true or false for each of the statement below.

The term "Antibiotic free" indicates the following:

	Select option	
	True	False
Animals were not given routine antibiotics	<input type="radio"/>	<input type="radio"/>
Animals may have received routine antibiotics	<input type="radio"/>	<input type="radio"/>

Please select true or false for each of the statement below.

The term "Hormone free" indicates the following:

	Select option	
	True	False
No hormones were given when raising the animal	<input type="radio"/>	<input type="radio"/>
Animals may have received hormones during raising	<input type="radio"/>	<input type="radio"/>



Next

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Please select true or false for each of the statement below.

The term "Country of origin" indicates the following:

	Select option	
	True	False
When describing from which country the meat product comes (i.e. South Africa/Namibia)	<input type="radio"/>	<input type="radio"/>

Please select true or false for each of the statement below.

The term "Geographic Region" indicates the following:

	Select option	
	True	False
To describe the specific region where the meat product comes from	<input type="radio"/>	<input type="radio"/>



Next

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Please select true or false for each of the statement below.

The term "Karoo Lamb" indicates the following:

	Select option	
	True	False
The animal was raised in the Karoo	<input type="radio"/>	<input type="radio"/>
The animal was not allowed to roam freely	<input type="radio"/>	<input type="radio"/>
The animal was given routine antibiotics	<input type="radio"/>	<input type="radio"/>
The animal was fed in a feedlot (a confined area where animals are fed mainly grain to reach a certain target weight) before slaughter	<input type="radio"/>	<input type="radio"/>
The animal grazed on specific Karoo bushes, contributing to the unique taste of Karoo lamb.	<input type="radio"/>	<input type="radio"/>



Next

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Using a scale from 1 to 5 where "1" means "Not at all important" and "5" means "Extremely important", or any number in between 1 and 5 depending on how strongly you feel.

When reading the information on the label or packaging material of pre-packaged lamb/mutton, how important is the following information to you?

	Not at all important	1	2	3	4	Extremely important
Hormone free		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Free range		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Antibiotic free		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Sell-by date		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Price per Kg		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Organic		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Country of origin		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Use-by date (expiry date)		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Price		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Fatness		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Karoo Lamb		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>



Next

Lightshot
Screenshot is saved to Scr
open in the folder.

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Select the information that you consider to be most important when reading the information on the label or packaging material of pre-packaged lamb / mutton before purchasing the product at food retailers.

Rank the **four** most important items, please do not try ranking more than four items.

In order to rank the items, please drag and drop each item from the left-hand side of the the screen to the box in the right-hand side of the screen.

Available Choices:

Hormone free	Free range
Antibiotic free	Sell-by date
Price per Kg	Organic
Country of origin	Use-by date (expiry date)
Price	Fatness
Karoo Lamb	

Drag choices here to rank them:

Drag here



Select the information that you consider to be the least important when reading the information on the label or packaging material of pre-packaged lamb / mutton before purchasing the product at food retailers.

Rank the **three** least important items, please do not try ranking more than three items.

In order to rank the items, please drag and drop each item from the left-hand side of the screen to the box in the right-hand side of the screen.

Available Choices:

Hormone free	Free range
Antibiotic free	Sell-by date
Price per Kg	Organic
Country of origin	Use-by date (expiry date)
Price	Fatness
Karoo Lamb	

Drag choices here to rank them:

Drag here



Using a scale from 1 to 5 where "1" means "Not confident at all" and "5" means "Very confident", or any number in between 1 and 5 depending on how strongly you feel.

How confident are you that consumers can trust the information provided on labels and / or the packaging of pre-packaged lamb and mutton?

Please indicate your level of confidence for each of the following statements:

	Not confident at all			Very confident	
	1	2	3	4	5
Sell-by date	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Nutritional information	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Production process claims "hormone free"	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Production process claims "free range"	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Production process claims "antibiotic free"	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Production process claims "hormone free"	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Use-by date (expiry date)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Claims of geographic region "Karoo Lamb"	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Claims of country of origin	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>



Next

Using a scale from 1 to 5 where "1" means "Strongly disagree" and "5" means "Strongly agree", or any number in between 1 and 5 depending on how strongly you feel.

How willing are you to pay more for pre-packaged lamb / mutton products if:

	Strongly disagree				Strongly agree
	1	2	3	4	5
The animal was only grass-fed	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The animal roamed freely	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The animal was never given hormones	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The animal was never given routine antibiotics	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
If the animal was raised in the Karoo region	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>



Next

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Demographics

You're almost at the end. Please do not skip this section, our researchers live for statistical data and it is very important to us that we get to know you better.

Besides, there is more to look forward to at the end of this questionnaire. When you reach the end, the answers to the TRUE AND FALSE questions will be revealed.

Demographics are used for statistical purposes only, under no circumstances will your personal details be shared with any third party.

Please complete / confirm your demographics below.

Please specify your gender:

- Female
 Male

Which age category applies to you?

Please select the option that contains your current age.

- < 18 Years Old
 Between 18 Years and 25 Years Old
 Between 26 Years and 35 Years Old
 Between 36 Years and 45 Years Old
 Between 46 Years and 55 Years Old
 Between 56 Years and 65 Years Old
 > 65 Years Old

Please specify your ethnicity:

- African
 Asian
 Coloured
 Indian
 White
 Other
 Prefer not to say

Please specify your highest level of education:

- No education
 Some primary schooling
 Complete primary schooling (passed grade 7/standard 5)
 Some secondary schooling
 Complete secondary schooling (passed grade 12/standard 10)
 Undergraduate (currently busy with after school graduate studies)
 Graduate (Degree or Diploma)
 Honours Graduate
 Masters graduate
 Doctors graduate
 Unclassified

Please specify your monthly household income before deductions:

- R1 - R1000
 R1001 - R2500
 R2501 - R4000
 R4001 - R6000
 R6001 - R8000
 R8001 - R11000
 R11001 - R16000
 R16001 - R25000
 R25001 - R40000
 R40001 - R60000
 R60001 - R100000
 R100001 and more
 Prefer not to answer

In which municipal area do you currently reside?

- City of Johannesburg Municipality (Joburg)

- City of Cape Town Municipality (Cape Town)
- eThekweni Municipality (Durban)
- Ekurhuleni Municipality (Germiston)
- City of Tshwane Municipality (Pretoria)
- Nelson Mandela Bay Metro Municipality (Port Elizabeth)
- Mangaung Municipality (Bloemfontein)
- Buffalo City Municipality (East London)
- eGaneni District Municipality (Nelspruit)
- Bojanala Platinum District Municipality (Rustenburg)
- Vhembe District Municipality (Tlokoeng)
- Capricorn District Municipality (Polokwane)
- Frances Baard District Municipality (Kimberly)
- Other, please specify
- I do not know the name of the municipal area that I reside in

Please specify the name of the suburb you live in.

Please specify:

Submit

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Thank you for your insight and participation!
[Click here](#) to see the answers to the TRUE OR FALSE quiz.

Ciao for now,
 The ConsultaPanel Team

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A true or false quiz!

Let's talk about ...

YOUR RIGHT TO INFOMATION

to make informed purchase decisions.



Thank you for participating in the "Your right to information" questionnaire. Here are the answers to the true or false quiz.

If you did not participate in the survey, take the quiz now!

The purpose of this quiz is to test your knowledge of the information provided on the labels of pre-packaged lamb / mutton products.

Why is this important? With the promulgation of the Consumer Protection Act in April 2011, all consumers in South Africa are assured of their consumer rights, including the right to information.

For example, specific information should be provided on the labels of pre-packaged lamb or mutton products to allow consumers to make informed purchase decisions.

Due to the previous mislabelling of meat products in South Africa and the meat scandal that broke in Europe in 2012, specific rules and regulations have been put in place that South African food retailers as well as other role players in the red meat industry need to adhere to.

ConsultaPanel coins: Your last challe...

Small Business Index - The story of th...

This is what drives customer decision...

What's in a name?

Here's a free online community where...

What you told us

Employee Research Panels

The importance of the labelling of pre-packaged lamb and mutton can therefore not be emphasized enough. In addition, the printed information provided on the labels and packaging of meat products would allow consumers to compare specific product claims when making purchase decisions.

Let's see how much you know...

TRUE OR FALSE?

The term "Grass-fed" indicates the following:

- a.) Animals have been fed a diet that is natural to the animal.
- b.) Animals have been raised on a diet almost exclusively of indigenous grass.
- c.) Animals have been raised on a diet of indigenous grass as well as grain from a feedlot (a confined area where animal are fed mainly grain to reach a certain target weight).

a= true, b= true, c= false

The term "Free range" indicates the following:

- d.) Animals were allowed to roam freely in large pastures for their entire lives prior to slaughtering.
- e.) Animal were not fed from a feedlot (a confined area where animals are fed mainly grain to reach a certain target weight).
- f.) Animals had ready access to the outdoors, fresh water and a natural diet to maintain full health and vigour.
- g.) Meat classified as "Age Class A".

d= true, e= true, f= true, g= false

The term "hormone free" indicates:

- j.) No hormones were given when raising the animal.
- k.) Animals may have received hormones during raising.

j= true, k= false

The term "Country of origin" is used:

- l.) When describing from which country the meat product comes (i.e. South Africa / Namibia).

l= true

The term "Geographic region" is used:

- m.) To describe the specific region where the meat product comes from.

m= true

The term "Karoo lamb" means:

- n.) The animal was raised in the Karoo.
- o.) The animal was not allowed to roam freely.
- p.) The animal was given routine antibiotics.
- q.) The animal was fed in a feedlot (a confined area where animals are fed mainly grain to reach a certain target weight) before slaughter.
- r.) The animal grazed on specific Karoo bushes, contributing to the unique taste of Karoo lamb.

n= true, o= false, p= false, q= false, r= true

Note from community manager: *"I got 16/18 correct, how did you do? Were any of these statements news to you? - Thanks again for your insight!"*

The importance of the labelling of pre-packaged lamb and mutton can therefore not be emphasized enough. In addition, the printed information provided on the labels and packaging of meat products would allow consumers to compare specific product claims when making purchase decisions.

Let's see how much you know...

TRUE OR FALSE?

The term "Grass-fed" indicates the following:

- a.) Animals have been fed a diet that is natural to the animal.
- b.) Animals have been raised on a diet almost exclusively of indigenous grass.
- c.) Animals have been raised on a diet of indigenous grass as well as grain from a feedlot (a confined area where animal are fed mainly grain to reach a certain target weight).

a= true, b= true, c= false

The term "Free range" indicates the following:

- d.) Animals were allowed to roam freely in large pastures for their entire lives prior to slaughtering.
- e.) Animal were not fed from a feedlot (a confined area where animals are fed mainly grain to reach a certain target weight).
- f.) Animals had ready access to the outdoors, fresh water and a natural diet to maintain full health and vigour.
- g.) Meat classified as "Age Class A".

d= true, e= true, f= true, g= false

The term "hormone free" indicates:

- j.) No hormones were given when raising the animal.
- k.) Animals may have received hormones during raising.

j= true, k= false

The term "Country of origin" is used:

- l.) When describing from which country the meat product comes (i.e. South Africa / Namibia).

l= true

The term "Geographic region" is used:

- m.) To describe the specific region where the meat product comes from.

m= true

The term "Karoo lamb" means:

- n.) The animal was raised in the Karoo.
- o.) The animal was not allowed to roam freely.
- p.) The animal was given routine antibiotics.
- q.) The animal was fed in a feedlot (a confined area where animals are fed mainly grain to reach a certain target weight) before slaughter.
- r.) The animal grazed on specific Karoo bushes, contributing to the unique taste of Karoo lamb.

n= true, o= false, p= false, q= false, r= true

Note from community manager: *"I got 16/18 correct, how did you do? Were any of these statements news to you? - Thanks again for your insight!"*

ADDENDUM B

Paper-based cover letter and questionnaire



Faculty of Natural and Agricultural Sciences
Department of Consumer Science

Dear Respondent,

With the promulgation of the Consumer Protection Act in April 2011 all consumers in South Africa are assured of their consumer rights, including the right to information. For example, specific information should be provided on the labels of pre-packaged lamb or mutton products to allow consumers to make informed purchase decisions.

Due to the previous mislabelling of meat products in South Africa and the meat scandal that broke in Europe in 2012, specific rules and regulations have been put in place that South African food retailers as well as other role players in the red meat industry need to adhere to. The importance of the labelling of pre-packaged lamb and mutton can therefore not be emphasized enough. In addition, the printed information provided on the labels and packaging of meat products would allow consumers to compare specific product claims when making purchase decisions.

I am currently conducting research on consumers' knowledge of the information provided on the labels of pre-packaged fresh lamb or mutton products purchased at food retailers. This research forms part of my Master's studies in Consumer Science. To take part in this study, you must reside in the Tshwane region and must purchase pre-packaged lamb or mutton products at least once a month at a food retailer such as Checkers, Spar, Woolworths or Pick & Pay. The research could contribute to food retailers' understanding of the information that consumers regard as important when purchasing pre-packaged lamb or mutton products.

It will take approximately 15 minutes of your time to complete the questionnaire. Please answer the questions carefully and give your honest opinion throughout. There are no right and wrong answers; your opinion and experience would be vital for the outcome of my study. Your anonymity will be respected and your information will therefore be treated highly confidential.

Should you have any questions about the questionnaire or the study, please feel free to contact me on the number below.

Kind regards
Ina Wilken-Jonker
0832689071

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Fakulteit Natuur- en Landbouwetenskappe
Lefapha la Disaense tsa Tihago le Temo

Questionnaire

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SECTION A: PLEASE TELL US MORE ABOUT YOURSELF. ANSWER EVERY QUESTION AND MARK EVERY RELEVANT ANSWER WITH AN X.

1. What is your gender?

Male	1
------	---

Female	2
--------	---

V1

2. What is your age?

--	--

 years

V2

--	--

3. What is your highest level of education?

Lower than grade 10	1
Grade 10 or 11	2
Grade 12	3
Grade 12 + Degree/Diploma	4
Post-graduate	4

V3

4. What is your approximate total monthly HOUSEHOLD INCOME?

Less than R5000	1
R5000 to R9999	2
R10000 to R14999	3
R15000 to R24999	4
R25000 or more	5

V4

5. What population group do you belong to according to the SA Population Equity Act?

White	1
Black	2
Indian	3
Coloured	4
Other (please specify)	5

V5

6. What is the name of the suburb where you live in Tshwane? *Please specify.*

V6

SECTION B: GENERAL PRE-PACKED FRESH LAMB/MUTTON SHOPPING

7. Which of the following pre-packed fresh red meat products do you purchase more frequently at food retailers? (Please indicate by means of 1 to 4 – 4 being the most frequent and 1 being the least frequent.)

7.1	Lamb	1
7.2	Mutton	2
7.3	Beef	3
7.4	Pork	4

V7.1

V7.2

V7.3

V7.4

8. How often do you buy pre-packaged fresh lamb/mutton products at food retailers? (Mark one option only.)

Once a month	1
Maximum 2-3 times a month	2
Maximum once a week	3
More than once a week	4
Every day	5

V8

9.	How often do you purchase pre-packaged fresh lamb/mutton at the following retailers:	Always	Often	Sometimes	Rarely	Never
9.1	Game	1	2	3	4	5
9.2	Makro	1	2	3	4	5
9.3	Pick & Pay	1	2	3	4	5
9.4	Checkers	1	2	3	4	5
9.5	Woolworths	1	2	3	4	5
9.6	Spar	1	2	3	4	5
9.7	Other retailers (please specify)	1	2	3	4	5

V9.1

V9.2

V9.3

V9.4

V9.5

V9.6

V9.7

10.	Who does the lamb/mutton shopping in your household? Please mark with X on the appropriate numbered option.	Always	Often	Sometimes	Rarely	Never
10.1	I/myself	1	2	3	4	5
10.2	My spouse/partner	1	2	3	4	5
10.3	Other (please specify)	1	2	3	4	5

V10.1

V10.2

V10.3

11. In general, when you purchase pre-packaged fresh lamb/mutton, how often do you read the information printed on the product label and/or packaging material?

Always	1
Often	2
Sometimes	3
Rarely	4
Never	5

V11

12.		Please mark X on the appropriate option for each statement.						
I generally read information provided on the label and/or packaging of pre-packaged lamb/mutton products to determine/validate the following:		Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly Agree		
12.1	The name of the cut for example lamb rib chops, leg of lamb	1	2	3	4	5	V12.1	<input type="checkbox"/>
12.2	Whether the animal was raised on independently certified farms	1	2	3	4	5	V12.2	<input type="checkbox"/>
12.3	Nutrition information, for example the energy value (KJ), protein content, cholesterol, total fat	1	2	3	4	5	V12.3	<input type="checkbox"/>
12.4	Whether the animal was able to roam freely	1	2	3	4	5	V12.4	<input type="checkbox"/>
12.5	Whether the animal was given growth stimulants	1	2	3	4	5	V12.5	<input type="checkbox"/>
12.6	The unit price, i.e. the price per kilogram (R/Kg)	1	2	3	4	5	V12.6	<input type="checkbox"/>
12.7	Whether the animal was given routine antibiotics	1	2	3	4	5	V12.7	<input type="checkbox"/>
12.8	In what country the animal was raised for example product of South Africa or Namibia	1	2	3	4	5	V12.8	<input type="checkbox"/>
12.9	In what geographic region the animal was raised i.e. Karoo Lamb	1	2	3	4	5	V12.9	<input type="checkbox"/>
12.10	The price of the product	1	2	3	4	5	V12.10	<input type="checkbox"/>
12.11	Whether the animal was "grass-fed"	1	2	3	4	5	V12.11	<input type="checkbox"/>
12.12	The Sell-by date	1	2	3	4	5	V12.12	<input type="checkbox"/>
12.13	Use-by date (expiry date)	1	2	3	4	5	V12.13	<input type="checkbox"/>

SECTION C: KNOWLEDGE OF PRODUCTION PROCESS CLAIMS (subjective knowledge)

13.		Indicate the degree to which you agree/disagree with each of the following statements concerning your knowledge of the information provided on the labels/packaging of pre-packaged lamb/mutton products. Please mark X for each of the statements below.						
		Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly Agree		
13.1 "grass-fed"								
a	I know what "Grass-fed" lamb/mutton means	1	2	3	4	5	V13.1a	<input type="checkbox"/>
b	I do not feel very knowledgeable about "grass-fed" lamb/mutton	1	2	3	4	5	V13.1b	<input type="checkbox"/>
c	Among my circle of friends I am the expert on "grass-fed" lamb/mutton	1	2	3	4	5	V13.1c	<input type="checkbox"/>
d	Compared to most other people, I know less about "grass-fed" lamb/mutton	1	2	3	4	5	V13.1d	<input type="checkbox"/>
e	When it comes to "grass-fed" lamb/mutton, I really do not know a lot	1	2	3	4	5	V13.1e	<input type="checkbox"/>
13.2 "free-range"								
a	I know what "free-range" lamb/mutton means	1	2	3	4	5	V13.2a	<input type="checkbox"/>
b	I do not feel very knowledgeable about "free-range" lamb/mutton	1	2	3	4	5	V13.2b	<input type="checkbox"/>
c	Among my circle of friends I am the expert on "free-range" lamb/mutton	1	2	3	4	5	V13.2c	<input type="checkbox"/>

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d	Compared to most other people, I know the less about "free-range" lamb/mutton	1	2	3	4	5	V13.2d	<input type="checkbox"/>
e	When it comes to "free-range" lamb/mutton, I really do not know a lot	1	2	3	4	5	V13.2e	<input type="checkbox"/>
13.3	"antibiotic free"							
a	I know what "antibiotic free" lamb/mutton means	1	2	3	4	5	V13.3a	<input type="checkbox"/>
b	I do not feel very knowledgeable about "antibiotic free" lamb/mutton	1	2	3	4	5	V13.3b	<input type="checkbox"/>
c	Among my circle of friends I am the expert on "antibiotic free" lamb/mutton	1	2	3	4	5	V13.3c	<input type="checkbox"/>
d	Compared to most other people, I know the less about "antibiotic free" lamb/mutton	1	2	3	4	5	V13.3d	<input type="checkbox"/>
e	When it comes to "antibiotic free" lamb/mutton, I really do not know a lot	1	2	3	4	5	V13.3e	<input type="checkbox"/>
13.4	"hormone free"							
a	I know what "hormone free" lamb/mutton means	1	2	3	4	5	V13.4a	<input type="checkbox"/>
b	I do not feel very knowledgeable about "hormone free" lamb/mutton	1	2	3	4	5	V13.4b	<input type="checkbox"/>
c	Among my circle of friends I am the expert on "hormone free" lamb/mutton	1	2	3	4	5	V13.4c	<input type="checkbox"/>
d	Compared to most other people, I know the less about "hormone free" lamb/mutton	1	2	3	4	5	V13.4d	<input type="checkbox"/>
e	When it comes to "hormone free" lamb/mutton, I really do not know a lot	1	2	3	4	5	V13.4e	<input type="checkbox"/>
13.5	"Karoo Lamb"							
a	I know what "Karoo Lamb" means	1	2	3	4	5	V13.5a	<input type="checkbox"/>
b	I do not feel very knowledgeable about "Karoo Lamb"	1	2	3	4	5	V13.5b	<input type="checkbox"/>
c	Among my circle of friends I am the expert on "Karoo Lamb"	1	2	3	4	5	V13.5c	<input type="checkbox"/>
d	Compared to most other people, I know the less about "Karoo Lamb"	1	2	3	4	5	V13.5d	<input type="checkbox"/>
e	When it comes to "Karoo Lamb", I really do not know a lot	1	2	3	4	5	V13.5e	<input type="checkbox"/>

SECTION C: KNOWLEDGE OF PRODUCTION PROCESS CLAIMS (Objective knowledge)

14	Your knowledge of the information provided on the labels/packaging of pre-packaged lamb/mutton products. Please mark true/false for each of the statement below.	True	False	
14.1	The term "Grass-fed" indicates the following:			
a	Animals have been fed a diet that is natural to the animal	1	2	V14.1a <input type="checkbox"/>
b	Animals have been raised on a diet almost exclusively of indigenous grass	1	2	V14.1b <input type="checkbox"/>
c	Animals have been raised on a diet of indigenous grass as well as grain from a feedlot (a confined area where animal are fed mainly grain to reach a certain target weight)	1	2	V14.1c <input type="checkbox"/>
14.2	The term "Free range" indicates the following:			
a	Animals were allowed to roam freely in large pastures for their entire lives prior to slaughtering	1	2	V14.2a <input type="checkbox"/>
b	Animal were not fed from a feedlot (a confined area where animals are fed mainly grain to reach a certain target weight)	1	2	V14.2b <input type="checkbox"/>
c	Animals had ready access to the outdoors, fresh water and a natural diet to maintain full health and vigour	1	2	V14.2c <input type="checkbox"/>
d	Meat classified as "Age Class A"	1	2	V14.3a <input type="checkbox"/>
14.3	The term "Antibiotic free" indicates:			
a	Animals were not given routine antibiotics.	1	2	
b	Animals may have received routine antibiotics	1	2	V14.3b <input type="checkbox"/>

14.4	The term "hormone free" indicates:		
a	No hormones were given when raising the animal	1	2
b	Animals may have received hormones during raising	1	2
14.5	The term "Country of origin is used :		
a	when describing from which country the meat product comes (i.e. South Africa/Namibia)	1	2
14.6	The term "Geographic region" is used:		
a	To describe the specific region where the meat product comes from	1	2
14.7	The term "Karoo lamb" means:		
a	The animal was raised in the Karoo	1	2
b	The animal was not allowed to roam freely	1	2
c	The animal was given routine antibiotics	1	2
d	The animal was fed in a feedlot (a confined area where animals are fed mainly grain to reach a certain target weight) before slaughter	1	2
e	The animal grazed on specific Karoo bushes, contributing to the unique taste of Karoo lamb.	1	2

V14.4a

V14.4b

V14.5a

V14.6a

V14.7a

V14.7b

V14.7c

V14.7d

V14.7e

SECTION C: IMPORTANCE OF SPECIFIC INFORMATION PROVIDED ON LABELS WHEN PURCHASING PRE-PACKAGED FRESH LAMB/MUTTON

15.	When reading the information on the label or packaging material of pre-packaged lamb/mutton, how important is the following information to you? Indicate with an X the option you choose in every instance.	Not at all important	Slightly important	Moderately important	Very important	Extremely important
		1	2	3	4	5
15.1	Hormone free	1	2	3	4	5
15.2	Free range	1	2	3	4	5
15.3	Antibiotic free	1	2	3	4	5
15.4	Sell-by date	1	2	3	4	5
15.5	Price per Kg	1	2	3	4	5
15.6	Organic	1	2	3	4	5
15.7	Country of origin	1	2	3	4	5
15.8	Use-by date (expiry date)	1	2	3	4	5
15.9	Price	1	2	3	4	5
15.10	Fatness	1	2	3	4	5
15.11	Karoo Lamb	1	2	3	4	5

V15.1

V15.2

V15.3

V15.4

V15.5

V15.6

V15.7

V15.8

V15.9

V15.10

V15.11

16. Select the information that you consider to be most important when reading the information on the label or packaging material of pre-packaged lamb/mutton before purchasing the product at food retailers. (Select no more than four.)

Rank the four most important items, indicating first most important = 1, second most import = 2, third most important = 3, and fourth most important = 4.

16.1	Hormone free	1	
16.2	Free range	2	
16.3	Antibiotic free	3	
16.4	Sell-by date	4	
16.5	Price per Kg	5	
16.6	Organic	6	
16.7	Country of origin	7	
16.8	Use-by date (expiry date)	8	
16.9	Price	9	
16.10	Fatness	10	
16.11	Karoo Lamb	11	

V16.1	
V16.2	
V16.3	
V16.4	
V16.5	
V16.6	
V16.7	
V16.8	
V16.9	
V16.10	
V16.11	

17. Select the information that you consider to be the least important when reading the information on the label or packaging material of pre-packaged lamb/mutton before purchasing the product at food retailers. (Select no more than three.)

Rank the three least important items, indicating first least important = 1, second least important = 2, and third least important = 3

17.1	Hormone free	1	
17.2	Free range	2	
17.3	Antibiotic free	3	
17.4	Sell-by date	4	
17.5	Price per Kg	5	
17.6	Organic	6	
17.7	Country of origin	7	
17.8	Use-by date (expiry date)	8	
17.9	Price	9	
17.10	Fatness	10	
17.11	Karoo Lamb	11	

V17.1	
V17.2	
V17.3	
V17.4	
V17.5	
V17.6	
V17.7	
V17.8	
V17.9	
V17.10	
V17.11	

18.	How confident are you that consumers can trust the information provided on labels and/or the packaging of pre-packaged lamb and mutton. Indicate with an X the option you choose in every instance.	Not confident at all	Doubtful	Unsure	Somewhat confident	Very confident
18.1	Sell-by date	1	2	3	4	5
18.2	Nutritional information	1	2	3	4	5
18.3	Production process claims "hormone free"	1	2	3	4	5
18.4	Production process claims "free range"	1	2	3	4	5
18.5	Production process claims "antibiotic free"	1	2	3	4	5
18.6	Production process claims "hormone free"	1	2	3	4	5
18.7	Use-by date (expiry date)	1	2	3	4	5
18.8	Claims of geographic region "Karoo Lamb"	1	2	3	4	5
18.9	Claims of country of origin	1	2	3	4	5

V18.1	
V18.2	
V18.3	
V18.4	
V18.5	
V18.6	
V18.7	
V18.8	
V18.9	

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19.		Strongly disagree	Disagree	Neither agree or disagree	Agree	Strongly agree
19.1	I am willing to pay more for pre-packaged lamb/mutton products if: the animal was only grass-fed	1	2	3	4	5
19.2	the animal roamed freely	1	2	3	4	5
19.3	the animal was never given hormones	1	2	3	4	5
19.4	the animal was never given routine antibiotics	1	2	3	4	5
19.5	If the animal was raised in the Karoo region	1	2	3	4	5

V19.1

V19.2

V19.3

V19.4

V19.5

Thank you for your participation

ADDENDUM C

Ethics approval letter



UNIVERSITEIT VAN PRETORIA
UNIVERSITY OF PRETORIA
YUNIBESITHI YA PRETORIA

Faculty of Natural and Agricultural Sciences
Ethics Committee

E-mail: ethics.nas@up.ac.za

Date: 9 June 2016

ETHICS SUBMISSION: LETTER OF APPROVAL

Dr S Donoghue
Department of Consumer Science
Faculty of Natural and Agricultural Sciences
University of Pretoria

Reference number: EC160413-015R

Project title: Consumers knowledge of selected claims associated with fresh lamb or mutton

Dear Dr Donoghue,

The submission conforms to the requirements of the NAS ethics committee.

You are required to submit annual progress reports no later than two months after the anniversary of this application as indicated by the reference number. The progress report document is accessible on the NAS faculty's website: Research/Ethics Committee.

You are also required to notify the NAS ethics committee upon the completion or ending of the project using the form Project Completed. Completion will be when the data has been analysed and documented in a postgraduate student's thesis or dissertation, or in a paper or a report for publication.

The digital archiving of data is a requirement of the University of Pretoria. The data should be accessible in the event of an enquiry or further analysis of the data.

If you want to submit an amendment to the current project, please use the Amendment form accessible on the NAS faculty's website: Research/Ethics Committee.

Yours sincerely,

A handwritten signature in black ink, appearing to be 'S. Donoghue'.

Chairperson: NAS Ethics Committee

ADDENDUM D

Plagiarism declaration

DECLARATION OF ORIGINALITY UNIVERSITY OF PRETORIA

The Department of CONSUMER SCIENCE places great emphasis upon integrity and ethical conduct in the preparation of all written work submitted for academic evaluation.

While academic staff teach you about referencing techniques and how to avoid plagiarism, you too have a responsibility in this regard. If you are at any stage uncertain as to what is required, you should speak to your lecturer before any written work is submitted.

You are guilty of plagiarism if you copy something from another author's work (eg a book, an article or a website) without acknowledging the source and pass it off as your own. In effect you are stealing something that belongs to someone else. This is not only the case when you copy work word-for-word (verbatim), but also when you submit someone else's work in a slightly altered form (paraphrase) or use a line of argument without acknowledging it. You are not allowed to use work previously produced by another student. You are also not allowed to let anybody copy your work with the intention of passing it off as his/her work.

Students who commit plagiarism will not be given any credit for plagiarised work. The matter may also be referred to the Disciplinary Committee (Students) for a ruling. Plagiarism is regarded as a serious contravention of the University's rules and can lead to expulsion from the University.

The declaration which follows must accompany all written work submitted while you are a student of the Department of CONSUMER SCIENCE No written work will be accepted unless the declaration has been completed and attached.

Full names of student: Hendrina Johanna Wilken-Jonker

Student number: 20223902

Topic of work: CONSUMERS' KNOWLEDGE OF SELECTED CLAIMS ASSOCIATED WITH FRESH LAMB AND MUTTON PRODUCTS

Declaration

1. I understand what plagiarism is and am aware of the University's policy in this regard.
2. I declare that this THESIS (eg essay, report, project, assignment, dissertation, thesis, etc) is my own original work. Where other people's work has been used (either from a printed source, Internet or any other source), this has been properly acknowledged and referenced in accordance with departmental requirements.
3. I have not used work previously produced by another student or any other person to hand in as my own.
4. I have not allowed, and will not allow, anyone to copy my work with the intention of passing it off as his or her own work.

SIGNATURE 