

**EXPLORING THE INFLUENCE OF EXTERNAL PRODUCT
ATTRIBUTES ON CONSUMERS' PERCEIVED ACCEPTANCE OF
PEA PROTEIN AS A PROTEIN SUBSTITUTE IN FOOD PRODUCTS**

by

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DEDICATION

To my aunt, Emma Quinn, who sadly passed away before she could see the final result of this study. She was so excited about this project and her support will never be forgotten.

DECLARATION

I, Tineke Quinn, declare that the dissertation, which I hereby submit for the degree of Master of Consumer Science at the University of South Africa, is my own work and has not previously been submitted by me for a degree at this or any other institution.

MRS. T QUINN:

Date: 3 July 2014

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SUMMARY

EXPLORING THE INFLUENCE OF EXTERNAL PRODUCT ATTRIBUTES ON CONSUMERS' PERCEIVED ACCEPTANCE OF PEA PROTEIN AS A PROTEIN SUBSTITUTE IN FOOD PRODUCTS

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The purpose of this study was to explore the influence of external product attributes on consumers' perceived acceptance of pea protein as a protein substitute in food products. The interest in pea protein as a possible protein source was investigated and the various advantages of consuming pea protein were highlighted. In previous studies, pea protein was identified as a possible substitute for red meat (Davies & Lightowler, 1998), but also as protein containing the amino acid profile which corresponds with the profile recommended for adults by the Food and Agriculture Organisation (FAO) (Swendseid, 1981). Additionally the nutritional and health benefits, the environmental benefits of growing pea protein as well as the non-allergen declaration accompanying pea protein were discussed.

The various factors that will influence the consumer's decision making process when introduced to a new and unfamiliar protein source such as pea protein were investigated in terms of the external product attributes as well as the factors indicated in the Theory of Reasoned Action (TRA) (Fishbein & Ajzen, 1975). The external product attributes were identified as the influence of price, marketing of the product, packaging attributes of new food products, branding importance of a product and new product education and knowledge perceived necessary for acceptability of a new food product. The additional factors which were investigated, as indicated by the TRA, included the influence of the subjective norms or significant others, as well as the consumers' personal attitude.

Due to the limited insight and understanding of the influences that external product attributes have on a consumer's perceived acceptance of pea protein as a protein substitute in food products, a qualitative exploratory research design was initiated. An exploratory research design was incorporated because this afforded the researcher the opportunity to gather thorough and comprehensive data or information and it also increased the richness and depth of explorations that could be researched (Key, 2002). The fact that an exploratory research design was incorporated, a non-probability sampling strategy was implemented. Additionally a convenient sampling strategy was also implemented because this type of sampling strategy represents sites or individuals from which data can easily be collected and where access is convenient (Cresswell, 2007).

The unit of analysis for this research was female shoppers, being the main grocery and food shoppers in the household, who were living in suburban areas. The participants of the research, therefore, resided mainly in the Johannesburg and Pretoria suburban areas, within the Gauteng province and were chosen because these are two of the major suburban cities in South Africa. The data were collected through means of a multi-method approach whereby different data collection instruments were applied. In this regard focus group interviews, sentence completion exercise and a vignette were used which addressed the objectives set out in the study.

From the findings of the study on the influence of external product attributes on consumers' perceived acceptance of new products in general and new products containing pea protein, it was found that there were not any noticeable differences between a new food product and a new food product containing pea protein. The consumer did not indicate a greater willingness to accept general new products in comparison to a pea protein product. On the contrary, the fact that a new product contained pea protein did not make any difference. For consumers external product attributes in general played a major role in their purchasing decision making process. The most important requirement that the consumers had was that additional information regarding the pea protein should be provided. It was indicated by the participants that they would be interested in the pea protein product and consider purchasing it and incorporating it into their daily diet, providing they knew more about the product and had sufficient background information about the new product. Furthermore, the importance of marketing of a new product was highlighted and the fact that the packaging of the new product should be attractive and eye-catching. Price competitiveness was mentioned, however, should a new and unfamiliar product be introduced by a well-known brand, this would lower the initial resistance to the new product.

One of the main limitations of this study is the relatively small sample size from a particular area in South Africa and, therefore, resulting in a very selective sample. The sample, therefore, remains one of convenience which limits the ability to generalize or transfer findings to a bigger group of consumers. Furthermore the study location was within a limited area, namely Gauteng. For this reason no assumptions were made nor were findings considered to be transferable to other population groups or consumer groups. Another limitation is that the topic of this study is very new and unfamiliar; there are, therefore, no previous studies with which to compare the findings. This study was exploratory in nature and the instruments were chosen specifically to explore a new and unfamiliar topic. The transferability of this study might be limited, but care was taken to describe the research context in as much detail as possible. In doing so, an attempt was made to enhance the transferability, should another researcher wish to duplicate the study.

From the findings of this study certain recommendation can be made as most participants were of the opinion that they would be interested in the pea protein product and consider purchasing it and incorporating it into their daily diet provided they knew more about the product and sufficient background information had been supplied. Furthermore, it was noted from the findings that these external attributes would influence the new product acceptability and, therefore, giving the research and developers as well as the marketing team of a manufacturing company the information necessary to understand the requirements from the consumers regarding the product containing pea protein better and how this product should be marketed as a healthy alternative to other vegetable protein sources. Further recommendations are that should a food manufacturing company wish to develop a pea protein product, they would need to promote the product beforehand and create an awareness of the advantages and benefits of pea proteins. This can be done by editorials in magazines as well as promotions in printed media. Additionally, the competition between products and brands is fierce and, therefore, manufacturing companies need to differentiate their products to keep consumers interested in their product or brand. Pea protein is a new and innovative product and can, therefore, add that differentiation and benefit to food products.

Future research that can be considered is that of a sensory study, to determine the actual viability of the pea protein products based on sensory evaluation. One of the main criteria indicated for the acceptability of a food product containing pea protein has been the taste. The present research was theoretical and exploratory in nature and, therefore, there were no actual products which the participants could taste.

Additionally, the inclusion criteria for this study was identified as female shoppers who are in charge of household grocery and food purchases and were, therefore, specifically recruited to participate in the research. However, based on a study done by Jensen (2011), it is recommended that further studies specifically include males because men are doing more of the household grocery shopping and they are not as brand loyal as females and would, therefore, be more willing to try and experiment with new food products. A study based on the gender differences of the acceptability of new products, could highlight different extrinsic attributes that would influence the purchasing decision.

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CHAPTER 1: INTRODUCTION

The aim of this chapter is to provide a brief overview of the study, outlining the interest in pea protein and the various factors that influence the consumer decision making process that results when consumers are introduced to a new and unfamiliar protein source such as pea protein, as well as the aim and objectives of this study.

1.1 Historic overview of peas and pea protein

The use of peas started in ancient times. Folklore tells that hot pea soup might have been one of the first takeout foods sold by street vendors in Ancient Athens (Schepers, 2008). The *Pisum sativum* or the garden pea primarily originated in the Middle East, although remains of the garden pea were also found in the Near East, Ethiopia and in Mediterranean countries (Encyclopedia Britannica 1970, sv Agarden pea@). Additionally, some of the earliest finds of garden peas came from Syria, Turkey and Jordan, whereas in Jericho, archeologists uncovered left-over meals of approximately 6000 years old, which contained garden peas (Christman, 2010). The original species, from which garden peas were developed, still grow wild in the eastern Mediterranean region which includes Turkey, Iran, Iraq and Syria (Christman, 2010).

The field pea, which used to be native to central Asia and the Middle East, is the forefather of the modern-day garden pea (Mateljan, 2013). According to Mateljan (2013), it is widely recognized that the green pea was one of the first food crops to be cultivated by humans. Initially the peas were consumed in dry form and only when the cultivation practices in Europe changed during the 16th century, were peas consumed as a fresh vegetable. In the 1800's, the pea vegetable was also of some importance when the Austrian monk, Gregor Mendel, studied and cross-bred pea plants in his garden at the monastery, giving rise to the modern study of genetics (Schepers, 2008). Likewise, in the 21st century, dry peas form a very important source of protein for both human and animal consumption (Owusu-Ansah & McCurdy, 1991). Peas, like many other legumes, are higher in protein than the average side dish. For instance, half a cup of dried peas contains more protein than a single egg (Schepers, 2008).

Today, *Pisum sativum* is grown either in a vegetable garden, or commercially, and eaten fresh or frozen (Frame, 2004; FAO, 2013). Worldwide the garden pea has also been cultivated for many years and is considered to be the greater of any other grain legume (Frame, 2004; FAO, 2013).



Garden pea (*Pisum Sativum*)

Picture from:

http://scienceblogs.com/pharyngula/wp-content/blogs.dir/470/files/2012/04/i-99cd1a6bda015f7a8ced014c4dd3c23e-pisum_sativum.jpeg

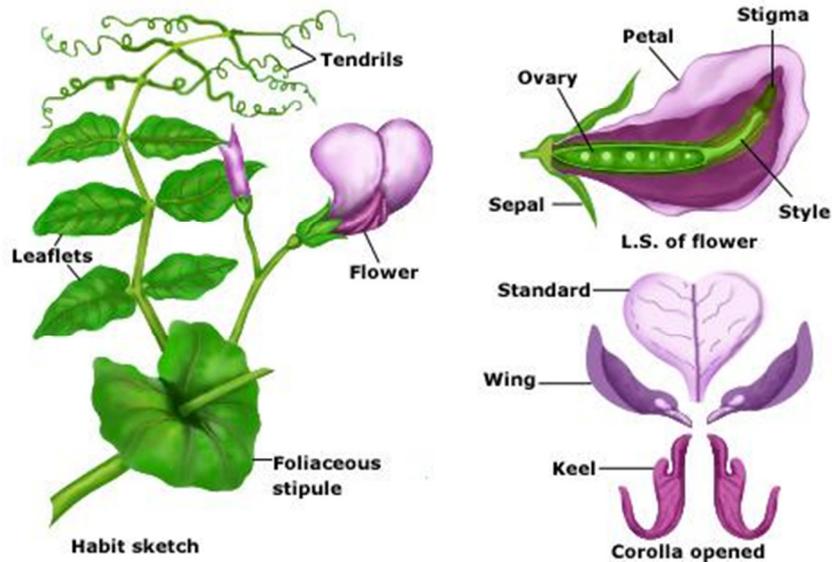


Split yellow peas (*Pisum Sativum*)

Picture from:

http://upload.wikimedia.org/wikipedia/commons/b/bc/Split_pea.jpg

This is due to the fact that the plant adapts easily and is not particular to any soil type (Mckay, Schatz & Endres, 2003; Oelke, Oplinger, Hanson, Davis, Putnam, Fuller & Rosen, 2014). The pea plant is autogamous or self-fertilizing and because of the butterfly shaped flowers, the pea plant does not need external pollen to be fertilized (Encyclopedia Britannica 1970, sv Agarden pea@). The pea plants, like all the plants in the legume family, are capable of drawing nitrogen from the air during rainy times and store it in their root system. This nitrogen is released into the earth when the plants dry out on the field before it is harvested (Encyclopedia Britannica 1970, sv Agarden pea@). The fact that these plants can draw nitrogen from the air makes them ecologically advantageous because there is no need for additional nitrogenous fertilizers (Roquette©.Freres, 2012). Furthermore, in crop rotation there is an even further advantage, should wheat for instance, be planted after peas, it reduces fertilization needs (Roquette©.Freres, 2012). Moreover, in comparison with other vegetable crops, the pea plant requires less water during the growth cycle, making it an environmentally friendly crop (Encyclopedia Britannica 1970, sv Agarden pea@). Often the plants are left on the fields to dry out. The dry peas, either *Pisum sativum* or *Pisum arvense*, are harvested and processed to obtain vegetable protein as an end product (Roquette©.Freres, 2012).



Butterfly Shaped Flowers (*Pisum Sativum*)

Picture from: <http://images.tutorvista.com/content/angiosperm-families/pisum-sativum-structure.jpeg>

Although the garden pea has been recognized for centuries, it remains a plant of great interest due to its high protein content and environmentally and ecologically friendly status. With the nutrition needs of the world population changing and increasing, a food product is required which has a high source of protein, can be cultivated and produced with ease and is less expensive than for instance animal protein. In the next section, the importance of protein and specifically the use of pea protein in the human diet will be discussed in more detail.

1.2 Interest in peas and pea protein

Gaman and Sherrington (1996) describe proteins as the main components of the cells of the body that are necessary for the development of enzymes, antibodies and some hormones. Furthermore, proteins are the basic material of every living entity and it is, therefore, essential to have an adequate amount of protein in the diet to maintain good health, normal growth and development (Roday, 2007). Amino acids are the essential building blocks of proteins and cells need amino acids to grow and heal (Diabetes India, 2009; Phillips, 2005). There are 22 amino acids commonly found in proteins, of which 8 are essential amino acids (Gaman & Sherrington, 1996; Roday, 2007; The Biology Project, 2003). The essential amino acids cannot be synthesized in the body and, therefore, needs to be supplemented through the diet. The non-essential amino acids can be synthesized by the body and is, therefore, not a dietary essential (Roday, 2007).

Each protein source is comprised of a different combination of amino acids. Although meat contains the most complete combination of essential amino acids, there are certain consumer groups, for example vegetarians, who cannot consume meat. These groups of consumers, therefore, have to consume alternative sources of essential amino acids. Alternative sources of essential amino acids include legumes and pulses like soya beans, peas, tree and ground nuts. Legumes and pulses are considered to be partially complete because they only contain certain essential amino acids and, therefore, a combination of legumes and pulses have to be consumed (Roday, 2007) in order to ingest all the necessary amino acids.

Pea protein has been identified as a possible substitute for red meat, which contains the most complete combination of essential amino acids (Davies & Lightowler, 1998). The amino acid profile of pea protein corresponds with the profile recommended for adults by the FAO (Swendseid, 1981). Pea protein stands out in particular on account of its richness in Lysine and its levels of branched amino acids, Glutamic acid and Arginine (Roquette©.Freres, 2012). Not only is the amino acid profile of pea protein of interest, but according to Siddiq and Pascall (2011), green peas contain about 5.42 g of protein per 100gr of raw vegetables or 20-25% protein on the dry basis, whereas meat contains 28-36% protein (Owusu-Ansah & McCurdy, 1991). The protein content of the green pea is, therefore, very similar to that of red meat. As mentioned, proteins are vital for human health and because pea protein is a natural, non-allergenic and non-GMO (genetically modified organism) product, it justifies further investigation into the product itself and the general impression consumers might have of pea protein as a protein substitute.

1.3 Product attributes influencing the acceptability of pea protein

As previously mentioned pea protein is an excellent source of amino acids and has the potential to be used as a protein substitute for animal proteins. Because pea protein is a relatively unfamiliar protein source, there are certain external product attributes which could influence the consumer's acceptability of a product containing pea protein. The attributes of interest are extrinsic which are defined as "*aspects that are related to the product, but are not physically part of it*" (Fandos & Flavián, 2006). It is also defined as "*any product characteristics that can be altered without influencing the objective nature of the product or service*" (Veale & Quester, 2009). Therefore, external product attributes are those influences outside of a product that have an effect on the product and which might influence the acceptability of the product where the consumer is concerned. Veale and

Quester (2009) state that although extrinsic attributes have no real effect on the quality of the product, they found that extrinsic attributes have a significant influence on consumer perception of product quality. These extrinsic attributes are identified by Veale and Quester (2009) as price, brand, retail outlet and country of origin. Additional extrinsic attributes include stamp of quality, price, packaging and production information (Espejel, Fandos & Flavián, 2007). Furthermore, Iop, Teixeira and Deliza (2006) identified certain extrinsic attributes which they believe have an influence on consumer preference or acceptance of food products. These extrinsic attributes include the effect of price, context, appropriateness, certification and production method, quality perception, origin and brand (Iop *et al.*, 2006). Therefore, numerous external product attributes exist which could influence a consumer's perceived acceptability of food products.

All the various external product attributes which could influence the acceptability of the product are important because the consumer first has to find the product acceptable before they can take action and purchase the product, which is the last step in the consumer decision making process. Therefore, apart from the product attributes that could influence the acceptability of the product for the consumers, there are additional factors which could also influence the consumers' decision to accept the product or not, which are related to the consumer decision making process a consumer follows.

1.4 Factors that influence the consumer decision making process

Lysonski and Durvasula (2013) describe consumers as having different personalities or mindsets, which influence the way the consumers make choices or the way their decision making process works. However, Viswanathan, Torelli, Yoon and Reimer (2010) explain that there are some external elements which will influence the consumers' decision making process, specifically when they enter a retail grocery shop. These elements include extrinsic attributes, such as the price spreading across products to choose from and the degree to which the product is in stock (Viswanathan *et al.*, 2010). According to the Theory of Reasoned Action (TRA), there are also influences from other people or significant others which will influence the consumer's decision making process.

In an attempt to understand further the thought and decision making processes that consumers go through before they make an actual purchase, the TRA as proposed by Fishbein and Ajzen (1975) is considered. The TRA states that a person's intention to perform a specific behaviour is a result of certain beliefs. The theory further explains that

these beliefs are about the behaviour itself, rather than the object of the behaviour. Fishbein and Ajzen (1975) state that a person's attitude could be influenced by some of these beliefs towards a behaviour specifically the attitude towards performing a specific behaviour, knowing that the behaviour will lead to certain consequences and the evaluation of these consequences. Therefore, this attitude towards behaviour is deemed as one of the foremost determining factors of a person's intention to perform the behaviour in question. Behavioural intention as described by the TRA (Fishbein & Ajzen, 1975) consists of two constructs, namely the personal attitude and social norms; both influencing the behavioural intention. According to the TRA, a person's attitude towards behavioural intention could be influenced by certain external elements. These extrinsic attributes have been identified as the perceived price of the product, the new product education and knowledge perceived necessary for acceptability, the perceived marketing of the product, the perceived packaging attributes of new food products and the perceived branding of a product. These extrinsic attributes will influence the way the person perceives the actual product, however, there are further external attributes which would also influence the person's intention to purchase a product.

The additional external attributes which influence the behavioural intent, is called the subjective norm. The subjective norm is generally where somebody, who is deemed as a referent or significant other, thinks that a person should or should not execute the behaviour in question. This opinion of the significant other will then influence the person's intention to purchase a product.

A conceptual framework, based on the TRA from Fishbein and Ajzen (1975) was adapted to illustrate the various external influences on the consumers' acceptability of unfamiliar food products and the decision making process consumers go through before the product is purchased. The conceptual framework and the various external influences are discussed in more detail in Chapter 3.

1.5 Problem Statement

In South Africa several scant studies have investigated consumer acceptability related to food products and historically the focus of most of the studies has either been on soy protein, due to the local production of the product or more from an agricultural viewpoint. For example, Vermeulen, Kirsten, Doyer and Schönfeldt (2005) looked at the attitudes and acceptance of South African urban consumers towards genetically modified (GM) white

maize and what the consumers' perception was towards GM food products. One of the objectives of this study was to establish the level of knowledge and the consumers' attitude towards GM maize and GM food products and what the acceptance of the different market segments will be towards these products.

Bouwer and Bosman (2008) in turn conducted research on HIV-positive and HIV-negative consumers' acceptance of instant soy maize porridge. These researchers wanted to assess whether there would be a preference or difference of acceptability by consumers between instant soy maize porridge and instant plain maize porridge. Furthermore, Mkanda (2007) researched consumer preferences towards sensory and physicochemical properties of dry beans. The main objective of this study was to compare the physicochemical properties and sensory quality attributes on consumer preference of six related dry bean varieties grown in two areas namely Mpumalanga and Free State in South Africa.

The main focus of research in South Africa regarding the subject of consumer acceptance, has, therefore, been on either GM products, soy products or dry beans indicating that research has not been focusing on the yellow pea or pea protein. Furthermore, the only study relating to the pea vegetable was from an agricultural viewpoint, by Woodward, Brink and Berger (1999) who investigated the application of plant biotechnology techniques in conjunction with conventional plant breeding and good crop management.

Internationally, several more studies on peas and pea protein can be found. Heng (2005) investigated the flavour aspects of peas and its protein preparations as being potential ingredients for novel protein food products. Swanson (1990) studied pea and lentil protein extraction and functionality in order to demonstrate that these products can be used as protein sources of flours, protein concentrates and isolates. Swanson (1990) found that pea protein concentrate could be used in ground meat and in beef patties to extend the product, reduce the fat content and make the beef products more succulent. Davies and Lightowler (1998) looked at plant-based alternatives to meat which included different sources like soya beans, wheat protein, pea and wheat protein. They compared the nutrient profile of meat with these protein sources to determine whether they were suitable substitutes.

Regarding the concept of acceptability of food products; Verbeke (2004) investigated determinants of acceptance of functional foods and how proteins could be included in the product development. Verbeke (2004) found that the health benefits of functional foods

compare positively to the acceptance of functional foods, even when there was a slight loss in taste. Additionally Siró, Kápolna, Kápolna and Lugasi (2008) found that consumers' acceptance of functional food is conditional to the taste of the product, but also product quality, price, convenience and trustworthiness of health claims. Siró *et al.* (2008) continue that consumers will evaluate functional foods as foods, therefore, although the health benefits are of importance, it cannot outweigh the sensory properties of the product. Furthermore, studies on the preference and acceptance of different food products have also been done. Kihlberg (2004) as well as Lampila and Lähteenmäki (2007) studied consumer perception and attitudes towards wheat bread, focusing on the effect of the production systems on the end quality of the bread and the effect of high pressure freezing of food. Rimal, Moon and Balasubramanian (2007) looked at soy food consumption and found that the consumption frequency will increase if the perceived beneficial health attributes in soyfood products are understood. Imram (1999) conducted a study on the role visual cues plays on the consumer perception and acceptance of a food product.

As mentioned, pea protein is a relatively new food ingredient, especially in terms of its availability to South Africa. Although pea protein or the pea plant has been the subject of various research studies, especially internationally, there is a scarcity of studies regarding the acceptability of the pea protein as an alternative protein source. This is especially true to South Africa because there have been no studies regarding the consumers' acceptability of pea protein as an alternative protein source. The interest in pea protein and the fact that it is GM free, a non-allergen and a possible replacement for meat protein has been mentioned. Furthermore, previous studies focused on the sensory or consumer preference of a product. These studies did not include the extrinsic attributes and the influence these extrinsic attributes might have on the acceptability of pea protein as an alternative protein source. These extrinsic attributes and the influence they have on the consumers' willingness to purchase a product, need further investigation.

1.6 Research Aim and Objectives

In light of the research problem stated above, the aim of this study is to explore the influence that external product attributes have on consumers' perceived acceptance of pea protein as a protein substitute in food products. In order to achieve this aim, the following objectives were formulated:

Objective 1

To determine the influence of perceived extrinsic product attributes on the acceptability of new food products in general in terms of:

- The perceived price of the product.
- The new product education and knowledge perceived necessary for acceptability.
- The perceived marketing of the product.
- The perceived packaging attributes of new food products.
- The perceived branding importance of a product.

Objective 2

To determine the influence of perceived extrinsic product attributes on the acceptability of food products that specifically contain pea protein, in terms of:

- The perceived price of the product.
- The new product education and knowledge perceived necessary for acceptability.
- The perceived marketing of the product.
- The perceived packaging attributes of new food products.
- The perceived branding importance of a product.

Objective 3

To explore consumers' attitude towards the unfamiliar product which has a high content of pea protein, in order to determine when the consumers will find such a product acceptable and their intention to purchase a product containing pea protein.

Objective 4

To identify the acceptability attributes that influence the intention to purchase a pea protein food product.

Objective 5

To propose a conceptual framework which identifies the influence that various extrinsic attributes have on new product acceptability and the influence these attributes have on consumer purchasing decision.

1.7 Methodology

A qualitative research paradigm was used to gain a deeper understanding of the reality and an experience of the consumer surrounding the key focuses of the objectives of this study through the use of focus group interviews. Focus group interviews are described by Krueger and Casey (2009) as “*people who possess certain characteristics, provide qualitative data in a focused discussion to help understand the topic of interest*”. As mentioned the research subject is quite new and unfamiliar and as Routio (2007) explains, with exploratory research it is meant that virtually nothing is known about the area under study when the project starts, therefore, an exploratory research design was adopted to be more flexible to inform the objectives. Bickman and Rog (1998) also described an exploratory design as a study which is undertaken to understand the nature of the problem better since very little previous information from other studies is available.

This study was conducted in the Gauteng Province, located in South Africa. Although Gauteng is the smallest province in South Africa, it is the second highest populated (South Africa Info, 2012), but the biggest metropolitan area in South Africa. Because of high population and diversity of the people, most new products, including food products are launched in Gauteng (South Africa Info, 2012). The participants included in this study were female shoppers, living in suburban areas of Pretoria and Johannesburg. Some of the inclusion criteria for the participants were that they had to be the main grocery and food shoppers in the household. The participants were required to be the main members of the household making the decisions about the menus and what will be prepared for the household. A snowball sampling strategy, as described by Liamputtong (2011) was implemented to recruit female participants for the focus groups. The snowball strategy was used by starting with one or two individuals and requiring them to refer other people who might fit into the inclusion criteria. A convenience sampling was also applied within the recruitment of the participants who resided in Gauteng, from where participants were recruited. Participants were also easily accessible to the researcher. The study commenced through the appointment of hostesses who would host a focus group. These individuals or hostesses were given a letter stating the objectives of the research as well as a short description of the inclusion criteria for other participants. A date and time was agreed upon for the focus group interviews. Furthermore, the focus group interviews had to take place after hours; it was, therefore, convenient to set up the meeting time for the participants that was suitable to them and also in an environment where they would be comfortable.

The research instruments used in this study included focus group interviews as well as a sentence completion task and a vignette. Therefore, a triangulation of methods was implemented, indicated by the more than one data gathering instruments applied. Triangulation is a method used to increase the validity of a qualitative study (Harris, Gleason, Sheean, Boushey, Beto & Bruemmer, 2009) and was applied to ensure the trustworthiness of the research is maintained. Lietz, Langer and Furman (2006) state that triangulation can be an important strategy in qualitative research where opposing viewpoints can bring an increased understanding of the data. Therefore, during the interviews the participants were asked certain questions to gain a better understanding of their opinion towards the introduction of new food products and specifically new food products containing pea protein. To clarify their meaning and attitude, the sentence completion and a vignette was also incorporated during the interview.

1.8 Data Analysis and Interpretation

Focus group interviews were digitally recorded after which the digital recordings were transcribed verbatim. The transcriptions produced typed A4 pages with the content of the transcripts. These transcriptions were analysed line by line in order to identify possible codes (Goulding, 2000). The collected data were analysed using open coding, which is described by Goulding (2000) as the process of breaking down the data into separate units of meaning. This analysis was followed until a recurring pattern was noted across data sets (Spiggle, 1994). Once the pattern was identified, the open coding stopped and the focus was shifted to a more focused axial coding (Law, Wong & Yip, 2012). Axial coding is described by Goulding (2000) as the grouping or clustering together of codes on the basis of their explanatory relationship to each other, which are then labelled to generate concepts. Goulding (2000) continues that these concepts are then grouped together to form descriptive categories. In order to ensure the appropriateness of coding, another researcher not involved in the collection of the data was asked to code the raw transcripts to identify themes (Law *et al.*, 2012) and these were discussed until a mutual consent was obtained.

Content analysis was, therefore, applied to each question to determine what the main themes were that were related to how the participants answered the questions. This resulted in each questions' answers being grouped into categories. Using the supporting quotes from the participants as evidence, the categories were divided into sub-categories. The categories highlighted what the participants from the various groups were saying and,

therefore, showing that they had similar opinions regarding the new products, as well as the new products containing pea protein.

In order to establish the trustworthiness of the qualitative research project, two additional data gathering methods were used to ensure the trustworthiness of the data. Lietz *et al.* (2006) describe a couple of threats to the trustworthiness of a research project, but also mention that in order to manage these threats, researchers can engage in a variety of strategies, including triangulation, member checking, audit trial etc. to describe the research findings in such a way which faithfully represents the implications as termed by the participants. The two additional methods used were a sentence completion and a vignette, where the participants were requested to complete both in a handwritten format. Content analysis was applied to each question and the main themes were identified. Thereafter, content was divided into categories and sub-categories. Once again the answers to the questions were used as evidence to support a particular sub-category.

Another strategy implemented to manage the threat to the trustworthiness of the research project was to do member checking. Member checking is described by Lietz *et al.* (2006) and Curtin and Fossey (2007) as the process where the findings from the research project are shared with the participants in order to allow them to review the findings from the data analysis. This will then give the participants the opportunity to either confirm or challenge the accuracy of the work and also to identify areas which may have been missed or misinterpreted. The member checking in this project involved sending the findings and discussions via email to the participants and asking them to evaluate the data.

1.9 Ethics

As described by Cresswell (2007), a researcher protects the identity of participants by assigning numbers or aliases to individuals. The participants in this study were verbally informed beforehand what the study is about. They were requested to sign consent forms which allow the research to use their information. They, therefore, participated completely voluntarily. In all data analysis their identities were not used, but a number was allocated to each participant, insuring their anonymity and privacy. Nowhere was reference made to any one person in particular and all information and opinions were kept in confidence. The participants were ensured that they may withdraw their participation at any point during the process. This research also received the approval of the Ethics committee of the College of Agriculture and Environmental Sciences, as per Appendix 1.

1.10 Chapter Layout

This dissertation is presented in seven chapters. A brief layout and description is as follows:

Chapter 1: Presents the introduction and background of the study where an overview is given regarding the origin of pea protein and the interest in the product. It also gives the layout of the problem statement, research aim and objectives and the methodology used. Finally this chapter mentions the ethical acceptance of this research project by the Ethics Committee.

Chapter 2: Presents a relevant literature review on pea protein. The chapter first discusses the background of pea protein and the interest of this product to the environment. It also takes a look at the commercial and health benefits, the nutritional and allergen statements. A comparison between pea protein and soya protein is then also discussed.

Chapter 3: The various extrinsic product attributes which have an influence on consumer acceptability of new or replacement food products are discussed. The Theory of Reasoned Action (TRA) is also introduced and a conceptual framework is proposed to understand further the decision making processes that consumers go through before they make an actual purchase of a possible new product.

Chapter 4: Provides the research methodology used for the study. It includes a description of the qualitative research paradigm, the exploratory research design, the sampling strategy, the data instruments and the data collection procedure. It also describes the data analysis and data interpretation process.

Chapter 5: This chapter presents the findings in accordance with the objectives set out in the study. It also discusses the themes, categories and sub-categories based on the participants' quotes with inclusion of figures and tables to assist with the interpretation of the findings

Chapter 6: Concludes the research through summarizing the findings and provides some interpretation of the findings in terms of the aim and objectives set out for this study. Recommendations are made and the limitations of the research are discussed. Future studies are also presented.

1.11 Summary

In this chapter a brief overview of the research and the process was presented. The introduction, background of this study as well as the problem related to the study were briefly explained. A brief overview of the aim and objectives was given as well as the methodology used and the method of data analysis used was described. The ethics approval and chapter layout of this dissertation is also mentioned. Chapter 2 will present a detailed literature review pertaining to pea protein and the importance of the pea protein as a protein substitute. The comparison between pea protein and soya protein is also discussed.

CHAPTER 2: LITERATURE REVIEW

This chapter describes the importance of protein in general and more specifically pea protein and compares the properties of pea protein to soy protein.

2.1 Introduction

The previous chapter introduced the research and gave a summary of the interest in pea protein, as well as the aim and objectives of the research. The chapter also included a synopsis of the research methodology used to address the objectives of the study. In Chapter 2 the importance of pea protein will be discussed and a comparison is presented of the properties of pea protein to soy protein. In Chapter 1 the importance of dry peas (*Pisum sativum*) as an important protein source for human consumption and animal feeding as confirmed by Owusu-Ansah and McCurdy (1991) was presented. In addition the importance of peas and pea protein to the environment is discussed in Chapter 2 and sustainability issues associated with animal proteins are also explored. The awareness of the amino acid profile and the benefit to human health and the nutritional value of peas are highlighted and the significance of the pea protein's non-allergen status is emphasized. Although pea protein concentrates and isolates have been produced commercially, the principal restriction to the sales of these products has been the difficulty in contending with the well-established, multipurpose soy protein products that dominate the protein ingredient market (Owusu-Ansah & McCurdy, 1991). However, the way in which the soy protein products were introduced to the consumers and the lessons that can be learned from this process is discussed, in view of introducing pea protein to the consumer market.

2.2 Background

Today, *Pisum sativum* is grown either in a vegetable garden, or commercially, and eaten fresh or frozen (Frame, 2004; FAO, 2013). There are generally three types of peas that are commonly eaten: garden or green peas (*Pisum sativum*), snow peas (*Pisum sativum* var. *macrocarpon*) and snap peas (*Pisum sativum* var. *macrocarpon* ser. cv.) (Mateljan, 2013). The garden pea has been grown for many years and all over the world (Frame, 2004; FAO, 2013). It is considered to be greater than any other grain legume (Frame, 2004; FAO, 2013).

Approximately 3 million tons of peas are grown annually. Currently Canada is the world's largest producer and exporter of peas, followed closely by France, China, Russia and India (Mateljan, 2013).

The pea plant adapts easily and is not fussy about the type of soil it is planted in. (Mckay *et al.*, 2003; Oelke *et al.*, 2014). The Department of Agriculture of Kwazulu Natal (Vegetable production in Kwazulu Natal, 2005) compiled several documents providing farmers with information on various crops. According to the Department of Agriculture, the *Pisum sativum* is an annual plant which produces best in cool weather; the plants can withstand fairly cold conditions, but the flowers and young pods are sensitive to even relatively light frosts. The pea plant grows at its optimum temperature of between 13°C and 18°C (Siddiq & Pascall, 2011).

A study by Swanson (1990) proposed that both lentils and peas can be used as protein sources. However, compared to lentils, pea protein is relatively cost effective to extract, plant and harvest and can be planted and grown in a variety of regions (Swanson, 1990). Thus various studies have been done regarding the viability of growing peas and consumer education has focused on educating farmers about the advantages of cultivating peas; not only as a vegetable, but as a commercial source of protein. (Vegetable production in Kwazulu Natal, 2005). Many different cultivars are available and grown for different reasons. Some are grown for processing while others are mainly fresh garden peas of which only the young tender seeds are eaten. Cultivars like the mange tout are edible podded peas, grown for its edible pods and harvested when the pods are fully developed, but before the young seeds start swelling (Vegetable production in Kwazulu Natal, 2005; Siddiq & Pascall, 2011). Often the plants are left on the fields to dry out. The dry peas, either *Pisum sativum* or *Pisum arvense*, are harvested and processed to obtain vegetable protein as an end product (Roquette©.Freres, 2012; Siddiq & Pascall, 2011).

2.2.1. Environmental Benefits of growing pea plants

As mentioned before, the pea plant, *Pisum Sativum*, is a legume and, therefore, part of the plant family Leguminosae, which does not require nitrogen-rich fertilizers in the overall harvesting process. As described by Mateljan (2013), “nitrogen fixing” crops, crops that do not need additional nitrogen fertilizer, are advantageous, because with the help of bacteria in the soil, peas and other legume crops are able to take the nitrogen gas from the air and convert it into a more complex and usable form. Legumes uses self-fertilizing or self-

pollination, where the pollen is transferred to the stigmas of the same flower or the stigma of a different flower on the same plant (Mateljan, 2013). It is, therefore, more reliable, especially if there are no other plants nearby (Introduction to genetics, 2010). Mateljan (2013) continues to describe the pea plant as having a relatively shallow root system which assists with the prevention of soil erosion and once the pods have been picked, the remaining plant tends to break down easily and can be used as soil replenishment.

Most of the peas planted in Europe are also free from genetic modification (Roquette©.Freres, 2012). A genetically modified organism (GMO) is an organism of which the DNA has deliberately been altered. These alterations will improve the organism's resistance to pests and increase the yield and quality of the crop (Good Environmental Choice Australia, 2005). According to Nganje, Wachenhiem and Lesch (2009), the main opposition to genetically modified (GM) foods is predominantly motivated by concerns about food safety and certain possible environmental threats related with their use.

Furthermore, during the processing of pea protein from the protein plant, no chemical solvents are used in order to maintain the functional properties of the pea protein and to obtain the best nutritional value (Mercola, 2014). Mercola (2014) describes the processing of the pea protein as a dry process which produces pea flour which is then hydrated. Starch and fibre separation take place next whereafter the coagulation of the pea protein follows (Mercola, 2014). Finally the pea protein is purified and dried in a multi-stage dryer. No chemical solvents are used during this process which only enhances the environmental friendly status of the pea plant and pea protein (Mercola, 2014; Roquette©.Freres, 2012).

These environmentally friendly aspects of pea production add to the great benefits to use pea protein, since most pea plants, and consequently the protein extracted from them, are GMO-free and safe for human consumption, but the pea crop also plays a beneficial part in an environmentally sustainable and ethical process (Roquette©.Freres, 2012).

2.2.2. Sustainability issues associated with animal proteins

Over recent years, animal proteins and their substitution with vegetable proteins has been the subject of great interest. There are growing concerns regarding the sustainability of animal proteins. In a study by Davies and Lightowler (1998), they discuss the fact that animal protein is expensive and limited in quantity and, therefore, discuss plant-based

alternatives to meat protein. The market for vegetarian foods has increased dramatically during the last half of the century. Phillips (2005) states that the number of vegetarians in the UK has increased since the Second World War and that 0.2% of the population claimed to have been vegetarian in the 1940 and they estimate that in the year 2000 between 3-7% of the population would have been vegetarian. However, over recent years, the demand for high-protein products has increased, not only from vegans and vegetarians, but also from general consumers. AIDP Inc. Plant Proteins (2013) states that according to Mintel, new high-protein product launches have tripled in the past five years, which in 2012 was 260% more than in 2008. The statistics further show that the growth is in snacks, yoghurt and prepared meals (AIDP Inc. Plant Proteins, 2013). Scott-Thomas (2013) furthermore confirms that new products positioned as high protein have nearly tripled from 12% of the category in 2010 to 35% in 2012. Furthermore, according to Scott-Thomas (2013), the high-protein claims on products in Europe are only just starting with the most common product categories being the snacks, cereals and bars categories.

In a similar study done by Craig and Mangels (2009) in the USA, they found, based on a nationwide poll, that approximately 2.3% of the US adult population followed a vegetarian diet and about 1.4% of the US adult population was vegan. According to AIDP Inc. Plant Proteins (2013), food manufacturers have been responding to consumer's demand for high-protein products. AIDP Inc. Plant Proteins (2013) states that in the USA snack food leads the category by accounting for 20% in the high protein food and drink new product launches for 2012, followed by fortified drinks at 17% and spoonable yoghurt at 15%. High-protein claims in meal replacement and sport beverages showed a respectable 37% growth in the past five years before 2012 (AIDP Inc. Plant Proteins, 2013).

Currently in South Africa, companies like Biovea® (Biovea, 2014) and Faithful to Nature® (Faithful to Nature, 2014) sells a range of retail protein powder products through their online stores. These products are marketed as protein supplements for sport nutrition in the form of smoothies as well as enhancing the protein content of any other dish, by adding the pea protein powder. Although these retail powder products are primarily imported, it has been observed that product development on similar sport nutrition products is underway in South Africa by various food manufacturing companies. Even though there is no current scientific source, it has been observed that food manufacturing companies have shown a strong interest in the development of snack and high protein bars. Additionally, for example, a company called Martinnaise® (Martinnaise, 2014) is using pea protein as an egg replacer in the manufacture of mayonnaise aimed at the vegan and vegetarian markets.

Furthermore, because vegetable protein is more cost effective and the yield is so much higher, it is, therefore, environmentally friendlier (Proteins and Derivatives, 2013). Although the demand for vegetarian food is one of the fastest growing sectors of the food industry, the challenge facing the industry has been to substitute meat with proteinaceous food products which simulate the characteristics, consistency and flavour of meat (Davies & Lightowler, 1998). According to Owusu-Ansah and McCurdy (1991), the use of pea protein has mainly been restricted to reconstituted meat products such as meat patties, hamburgers and sausages, mainly due to the functional capabilities of pea protein. Furthermore, during recent years many new products, both for the vegetarian market and to replace meat products specifically, have been introduced into the market, however, due to pea protein's unfamiliar taste and texture, but also being unfamiliar with the pea protein product, the consumers have been reluctant to purchase these products. It is, therefore, important to introduce the health and nutritional benefits of pea protein to consumers in order to increase the use of pea protein in various food applications, as will be discussed at a later stage in this chapter.

2.2.3. Amino Acid Profile of Pea Protein

As mentioned previously, proteins are large, complex molecules which are described as an essential nutrient that play many essential roles in the body, for example it helps build parts of the body including muscle, bone, skin and blood (Genetics Home Reference, 2014). Additionally, the proteins also perform most of the work in the cells and are critical for the structure, function and regulation of the body's tissues and organs (Genetics Home Reference, 2014). According to Owusu-Ansah and McCurdy (1991), the nutritional quality of protein from a specific source depends on the quantities of essential amino acids present and the bioavailability of those amino acids to the organism that ingests the protein. The bioavailability of the amino acids is dependent on how well the human body is able to digest the protein and absorb the different amino acids (Owusu-Ansah & McCurdy, 1991). According to Owusu-Ansah and McCurdy (1991), pea protein was found to have a true digestibility of 88%, where the true digestibility of the individual essential amino acids varied between 82% and 93%. It, therefore, indicates that the bioavailability of the essential amino acids in pea protein is reasonably high, which increases the nutritional value of pea protein.

According to Medline Plus (2014), the nine amino acids that the human body cannot produce, due to a lack of the necessary enzymes required for the biosynthesis of the amino acids, and, therefore, considered as essential amino acids are: histidine (which are

essential for children more than for adults), isoleucine, leucine, lysine, methionine, phenylalanine, threonine, tryptophan, and valine. The non-essential amino acids are: alanine, asparagine, aspartic acid and glutamic acid (Medline Plus, 2014). Medline Plus (2014) furthermore, lists conditional amino acids, which are usually not essential except in times of illness or stress and these include arginine, cysteine, glutamine, tyrosine, glycine, ornithine, proline, and serine. Plants are able to produce all the amino acids, however, most plants will lack one amino acid (Phillips, 2005). For instance, according to Phillips (2005), cereals lack lysine. It is, therefore, recommended to consume grains with legumes, for example rice and lentils, in order to ingest all the essential amino acids which are important to the human body.

The amino acid profile of pea protein corresponds with the protein profile recommended for adults by the FAO (Swendseid, 1981). Pea protein stands out in particular on account of its richness in lysine and its levels of branched amino acids, glutamic acid and arginine (Roquette©.Freres, 2012). According to Daniells (2013), pea protein is the richest source of arginine at about 8.7% on a protein weight basis. Arginine is a very important amino acid because it assists with the building of a lean and muscular body, but is also an important energy source that improves athletic performance (Daniells, 2013). Daniells (2013) continues to argue that pea protein is, therefore, an extremely good source of amino acids and can be used in various applications, especially sport nutrition products.

2.2.4. Health Benefits of Pea Protein

During the last number of years, medical studies have been undertaken to understand the impact of protein and amino acid needs better to achieve optimal health (Millward, Layman, Tomé & Schaafsma, 2008). Proteins in general have certain nutritional advantages and are described by Roquette©.Freres (2012) as promoting muscle maintenance and development, helping to prevent osteoporosis, and contributing to satiety, which assists with weight management. In a study conducted in Canada, Dr. Rotimi Alokun Ph.D investigated the possibility that protein from peas may reduce blood pressure and improve kidney health (Ajfand, 2013). This study involved the feeding of small doses of protein to laboratory rats with polycystic kidney disease. The researchers found that after eight weeks the protein-fed rats with the kidney disease showed a 20% decrease in blood pressure compared to the rats on the normal diet. The final results have not been published, but clinical trials on mildly hypertensive human volunteers were on the way (Ajfand, 2013).

Other studies have mentioned that the yellow pea might be able to assist in lowering

blood pressure (Adams, 2013). Barron (2013) further describes the advantages of yellow pea protein to assist with hypertension and kidney disease. A study by Hernandez-Ramirez, Galvan-Portillo, Ward, Agudo, Gonzalez, Onate-Ocana, Herrera-Goepfert, Palma-Coca and Lopez-Carrillo (2009) showed a reduced risk for gastric cancer associated with the higher consumption of several polyphenols, including the cinnamic acids secoisolariciresinol and coumestrol. They found that sources for the cinnamic acids included pinto beans, pears and mangos, where sources of secoisolariciresinol were pinto beans, carrot and squash and those of coumestrol were legumes like pinto beans, broad beans and green peas. These studies, therefore, indicate that peas, pea extract and pea protein have potential medical benefits as well as nutritional advantages.

2.2.5. Nutritional Benefits of Pea Protein

Pea protein is extremely nutritive and highly digestible (Proteins and Derivatives, 2013). As a slowly-digested protein source, it has a positive impact on satiety (Proteins and Derivatives, 2013). This source further mentions that because protein will increase the feeling of satisfaction and help with the overall health of human cells, it is possible to increase the protein content of food products supplied to feeding schemes. Therefore, peas and products containing pea protein might be an aid in alleviating the world-wide epidemic of malnutrition, which definitely has an impact on South Africa as well. The protein content of pea ranges between 85 and 87 percent and is, therefore, an excellent source of protein (Proteins and Derivatives, 2013).

More recently another nutritional benefit, the exceptionally low fat content of the green pea is discussed by Mateljan (2013) where the author mentions that pea protein contains about one third of the total fat per 250ml. Moreover, according to Mateljan (2013), recent research has revealed that the green pea is a reliable source of omega-3 fats in the form of alpha-linolenic acid (ALA). Mateljan (2013) indicates that in 250ml of green peas, there will be approximately 30 milligrams of ALA and approximately 130 milligrams of omega-6 fatty acid and linoleic acid. Green peas are, therefore, a good source of important fat-soluble nutrients, also including beta-carotene and small but valuable amounts of Vitamin E (Mateljan, 2013).

According to Pea Protein Innovations (2006), worldwide more and more commercial products are being launched which make protein claims. These include sport nutrition as well as food products. They continue to mention that 28 products with a protein claim were released worldwide in 2002. In 2005 this number increased to 73 products, which is an

increase of over 260% (Pea Protein Innovations, 2006). Scott-Thomas (2013) furthermore mentions that during 2012 in the United States, high protein foods and drinks accounted for 19% of overall new product launches presenting “high-protein” claims. However, in Europe it appears that high protein claims are more commonly associated with the snacks, cereals and bars category, with products positioned as “high-protein” in this category having nearly tripled from 12% in 2010 to 35% in 2012 (Scott-Thomas, 2013). Therefore, in order to keep up with the increasing desire for “high-protein” products from consumers, pea protein is a possible answer.

Not only is pea protein rich in protein content and delivers high nutritional value, it is also important to consider the fact that pea protein is allergen free when considering pea protein as a protein source, which will be discussed in the next section.

2.2.6. Allergen-free quality of Pea Protein

According to the Food Allergen Labeling and Consumer Protection Act (FALCPA) of the United States, which falls under the Food and Drug Administration (FDA), there are eight major food allergens which include milk, egg, fish, Crustacean shellfish, tree nuts, wheat, peanuts and soybeans. These eight major foods or food groups account for 90 percent of food allergies (Food Allergens Labeling). According to Codex Alimentarius, which is a collection of internationally recognized standards, codes of practice, guidelines and other recommendations relating to foods, food production and food safety, of various different countries for instance the USA, Australia/New Zealand, Canada and the European Union, the presence of pea protein does not trigger allergen labeling in any of the above mentioned legislations (Codex Alimentarius, CAC/GL, 4-1989).

Because pea protein is a non-allergen, consumers may find food products containing pea protein acceptable, compared to products containing soy protein. A study done by Rimal *et al.* (2007) discusses the changes in soy based food consumption between 2001 and 2007. According to Rimal *et al.* (2007), although households in the USA consuming soy products increased from 2001 to 2007, the frequency of consumption declined considerably. Rimal *et al.* (2007) suggest the reason for this decline is that a large percentage of American consumers avoid soyfood due to unfavourable perceptions about its taste. Although soy based products are healthy and, therefore, attractive to informed consumers, many still steer clear of the consumption of soy based products due to the allergens associated with it.

In South Africa soy is still widely used as a cost effective protein alternative to red meat

(Bosman, Ellis, Bouwer, Jerling, Erasmus, Harmse & Badham, 2009). Although soy protein had a difficult path to consumer acceptability, it is now at a stage where most consumers know what it is and what to expect of the product. Because pea protein can be used as a soy protein substitute, it is believed that certain lessons can be learned from soy protein's road to consumer acceptance.

2.3 Comparing Pea Protein to Soy Protein

As per the discussion above, pea protein is a product of numerous benefits and although it is indicated to be a good product to use, the product may be unfamiliar to consumers. It was also mentioned that pea protein is from a legume, which is the same source as soy protein, which is also from a legume. Therefore, the protein products produced either from pea protein or soy protein will have many similar characteristics and ultimately the possibility exists of a similar taste profile. However, as unfamiliar as pea protein is, so well-known is soya or soy protein to consumers. Unfortunately, soya was not always viewed in a positive light and it has taken many years before consumers have accepted soy protein as an alternative protein source and have found the soy products acceptable. Therefore, when investigating the introduction of pea protein products to consumers, it has to be planned carefully in order to avoid the same mistakes soy protein products made when initially introduced to the consumers. Wansink, Sonka, Goldsmith, Chiriboga and Eren (2005) describe the initial introduction of the soy protein to the consumers as less than smooth, because the product was still unrefined and the taste was unfamiliar. These lessons learned from soy protein regarding the successful introduction of unfamiliar products to consumers, will be discussed and mention will be made of possible improvements that can make the introduction of pea protein products to consumers as smooth as possible. Wansink *et al.* (2005) is used as the main source for the following section because of the sequence of steps that they have emphasized and discussed, which are extremely relevant to the introduction of soy protein products and which can be extrapolated to pea protein products.

2.3.1. Background on soy beans and soy protein

It is believed that the soybean, which originated in Asia, was introduced to North America in 1765 (Gardner & Payne, 2003). Gardner and Payne (2003) state that the soybean was originally used as a vegetable and forage crop until the early 20th century, when the soybean was transformed into the dominant global crop it is today. This was due to the developments in plant breeding and industrial processing (Gardner & Payne, 2003).

Bosman *et al.* (2009) mention that although there is an increased appreciation for the functional and nutritional benefits of soy proteins, it has taken a while for consumers to change their negative view of soy products which was caused by many products introduced after the Second World War and during the 1970s. In the years just before and after the United States' involvement in World War II, much of the available meat in the country was shipped overseas to feed the soldiers and allies (Wansink *et al.*, 2005). This resulted in the concern that the United States would be left starved for protein, and, therefore, the search for an alternative protein source or substitute was initiated. In the 1940's several studies were undertaken by a war stricken United States, to determine the strategy the USA government used to introduce American families to eat a variety of meats and meat substitutes during the rationing periods (Wansink *et al.*, 2005). The negative attitude of consumers towards soy products was mainly due to bad experiences by consumers regarding the taste of earlier developed soy based products (Wansink *et al.*, 2005).

The modern day soy companies have made it their goal not only to reposition their products, but also to change the preconceptions of the consumers. Wansink *et al.* (2005) mention that one of the first and most important issues is the positioning of the soy-based product as an alternative to traditional protein sources. Wansink *et al.* (2005) continue to say that traditionally consumers have had a resistance and negative attitude towards soy based products, thus influencing their purchasing decision. According to Bosman *et al.* (2009), soy is not a new or unfamiliar product to the South African market and it is readily available as an ingredient and, therefore, it is widely used in products in South Africa.

2.3.2. The significance of bioengineered soybeans

Although most of the world's soybean production is now considered GM products, or bioengineered, it remains an important crop and product for the world population (Gardner & Payne, 2003); not only for the vegetable oil production, but also because of its high protein content and the fact that it can be used as an alternative to meat protein (Davies & Lightowler, 1998) and various other food products.

Soybeans are the major source of vegetable oil and protein in products like food, animal feed and even in industrial applications (Conner, Hamer Paschal, Barero & Johnson, 2004). Soybeans are grown in many parts of the world and as the world's population increases, the demand for protein and edible oil also increases, therefore, the production of soybeans has to increase (Conner *et al.*, 2004). Conner *et al.* (2004) continue to state

that unfortunately, there are a variety of pests, including weeds, insects, fungi, nematodes and viruses, that have a devastating effect on the agronomics and economics of soybean production. These pests affect the yield and quality of the grain and seed (Conner *et al.*, 2004). Because of this, manufacturers and farmers have started to look at bioengineering of various products (Muth, Mancini & Viator, 2002). According to Muth *et al.* (2002), soybeans, corn, cotton and canola are some of the crops that were first looked at. Most bioengineered technology was developed on farm-level (Muth *et al.*, 2002). Muth *et al.* (2002) continue to describe the advantages of bioengineered crops including traits like fungal resistance, herbicide tolerance and insect resistance. They also describe the processing level traits that reduce processing requirements, therefore, less energy or labour or that it can eliminate the need for a particular ingredient. According to Muth *et al.* (2002) there are also consumer level traits that are improved and these include improved nutritional value, extended shelf life and improved or novel sensory attributes. Therefore, according to Gardner and Payne (2003), a new crop and industry was developed through science and technology and through which soybean shows an outstanding accomplishment.

2.3.3. Introducing soy and soy products to the consumer

Markets are changing and the consumers' demands for alternative, innovative products are increasing and shifting towards a healthier diet and the use of functional foods (Gray, Armstrong & Farley, 2003). The market for vegetarian and vegan foods are one of the fastest growing sectors in the food industry (Davies & Lightowler, 1998; AIDP Inc. Plant Proteins, 2013; Scott-Thompson, 2013). According to Davies and Lightowler (1998), the greatest challenge has been to find a substitute to meat which can mimic the eating characteristics, texture and flavour of meat. Because soy products have been around since 1979 (Bosman *et al.*, 2009), it is known by the consumer; at the very least consumers have heard of soy products and are familiar with it. In addition, Rimal *et al.* (2007) mention the importance of promoting soyfood products as being tasty and convenient as well as being nutritious. During a study by Rimal *et al.* (2007), they found that there are two groups of consumers. The one group uses soy products on a regular basis because of the health and nutritional benefits. The other group prefers soy products because of the taste. The latter group, many times are unaware of the health benefits. Rimal *et al.* (2007) is, therefore, of the opinion that the soyfood industry needs to invest in food technology which will make soyfood taste better. In addition to the health, nutrition and taste, consumers prefer products that are convenient to plan, shop, prepare, cook and clean (Rimal *et al.*, 2007).

Some of the applications of soy are already available on the market that include soy milk, tofu, patties, cheese spread and textured vegetable protein (Roday, 2007). The author explains that through an extrusion process good quality meat analogues can be produced from textured vegetable proteins. Fuller (2005) mentions that soy products are especially popular in ethnic cuisine, for example Japanese miso and Chinese chiang, which are fermented soy bean curd products used as flavouring. The author also mentions Tempeh, which is mould-fermented soy beans that have been used as a meat substitute.

Although there are already many different soybean products on the market, the usage and frequency of use could be increased. Wansink *et al.* (2005) conducted a study where they highlight various steps on how to introduce soy products to consumers and the marketing activities that need to be considered. The steps of positioning the soy-based products as described by Wansink *et al.* (2005) are; increasing the availability, increasing the substitutability, comparing similarities and contrasting differences. These steps are also called the product life cycle when associated with a specific product. Each product which is ever launched onto the consumer market follows similar steps in its life cycle (Kardes, Cline & Cronley, 2011).

Kardes *et al.* (2011) emphasize the importance of developing appropriate entry strategies for introducing a new product into the market. Kardes *et al.* (2011) call this process the diffusion of innovation or the rate at which the new product is accepted into the marketplace or the rate at which the new product spreads. According to Kardes *et al.* (2011), diffusion is influenced by various factors, but mainly the advantage that the new product has over the old product. Recounting the steps of how to introduce unfamiliar protein sources to consumers includes the increase in the availability of the new product (Wansink *et al.*, 2005). In order to stimulate the consumer's interest in a product, it is important to increase the food availability and food accessibility. According to Wansink *et al.* (2005) the availability of food refers to the supply of foods from production to the supermarkets and convenience stores. Wansink *et al.* (2005) continue to state that it is important that the soy-based foods are available but also accessible. Traditional protein products such as meat are many times quite expensive and, therefore, not accessible to the lower income families, but in contrast, soy-based products can be priced lower, which makes them more accessible (Wansink *et al.*, 2005).

Another important factor, according to Kardes *et al.* (2011), is the compatibility of new product with the consumer's beliefs, opinions and lifestyles. In this regard Wansink *et al.*

(2005) state that the second step is to increase the substitutability between different product categories for instance soy-based and non-soy based foods. It is, therefore, important to point out similarities and differences between the soy-based and non-soy based foods (Wansink *et al.*, 2005). Advertising can be used as a tool to convey the message of the substitutability; initially indicating the similarities of the soy-based product compared to the non-soy food (Wansink *et al.*, 2005).

It is generally understood that soy-based products can serve as a substitute for certain traditional foods (Wansink *et al.*, 2005). Wansink *et al.* (2005) continue that it is important to create consumer perception that the soy-based food has similar properties to a traditional food with regards to the attributes that are important to the consumer. For example soy milk is acceptable as a substitute for cow milk because it renders the same nutritional value (Bosman *et al.*, 2009). One of the key elements that needs to be taken into consideration is which attribute in a food is imperative to the consumer. In the case of milk it is the nutritional value, i.e. the calcium. Once this attribute has been established, the similarities and substitutability can be conveyed to the market (Wansink *et al.*, 2005). Trialability, or the ease with which a consumer can try or use a product, will also increase the diffusion rate (Kardes *et al.*, 2011). Therefore, should the consumer be able to test a sample, they might be more interested in the product later on.

According to Wansink *et al.* (2005), the last step in how to introduce unfamiliar protein sources to consumers is to contrast two products. For example, as with the soy milk, not only should the similarities be mentioned, but also the differences, i.e. the fact that soy consumption can prevent heart conditions (Wansink *et al.*, 2005). They continue to say that should there be a negative attribute that traditional foods hold, and the soy product has a different or opposite effect, those differences should be mentioned and emphasized.

As mentioned before, some studies have been done regarding the consumers' opinions of soy products and mention was made to the steps Wansink *et al.* (2005) suggest to follow in introducing unfamiliar protein sources to the consumers. The next section will take a closer look at the consumer's specific opinions regarding soy and soy products.

2.3.4. Consumers' opinions regarding soy and soy products

Soy and soy products have been used for centuries in Eastern Asia for their high nutrition and variety of health benefits (Bosman *et al.*, 2009). However, it is still widely overlooked due to its sensory drawback, namely the beany aroma, bitter taste, chewy texture and

other off-flavours and aromas (Wu, Molaison, Pope & Reagan, 2005). Due to these drawbacks and consumers' concerns regarding the safety of the product, despite evidence of an increase in consumption and a better understanding of the benefits of the products, there are still many consumers who will refrain from using soy (Wu *et al.*, 2005). Bosman *et al.* (2009) mention that it might be quite difficult to overcome the acceptance of an unfamiliar food and to a large extent it will depend on its consistency with cultural opinions and perception as well as consumption patterns.

In a study done by Wu *et al.* (2005), various yoghurt samples were tested by students. Some of the samples were made with soymilk and other samples were made from traditional yoghurt. Although the overall texture of the soymilk yoghurt was less acceptable, the aroma of the soymilk product was rated significantly higher than the traditional products. The findings of this study indicated that the overall acceptance of the soymilk yoghurt was increased when the consumer believed it was beneficial to their health. These results, therefore, reiterated the findings of Rimal *et al.* (2007) regarding the taste of soy products and their perceived health benefits.

2.3.5. Comparing soy protein and pea protein products

Both soybeans and peas have been described as legumes with high protein content and an amino acid profile that is beneficial to the health of humans. Although soy is better known as a vegetable protein than pea, it was mentioned that soy still faces some challenges. One of the main challenges faced by soy is the taste, because it has a distinctive beany note (Rimal *et al.*, 2007). Unfortunately due to the history of soy protein and possible unforgotten bad product experiences the consumer still considers soy to be like it was in the past to be recognized as a bad tasting product. Fortunately, due to new technology, the pea protein producers have been able to extract the "beany" notes and, therefore, have a better, cleaner tasting protein that can be used in a variety of end products (Roquette©.Freres, 2012). However, the consumers are unfamiliar with the new developments and consumers have to be educated and convinced that it is good tasting and beneficial to their health.

Pea protein is furthermore considered as an alternative to soy protein mainly due to its non-GMO and allergen free status (Roquette©.Freres, 2012). Additionally, when comparing a pea protein product to a soy protein product, the clean taste, non-GMO status and allergen free attributes can be highlighted (Roquette©.Freres, 2012). However, it is imperative that the consumers' first exposure to the food product should be a positive

one, because this will influence the consumer's belief and their consequent opinion of the product (Bosman *et al.*, 2009). In the same way as soy protein, pea protein is of vegetable origin and, therefore, a healthy alternative to the traditional foods (Roquette©.Freres, 2012). Furthermore, due to the extraction process of the pea protein, it is one of the cleanest, most neutral proteins around (Roquette©.Freres, 2012) and, therefore, the consumer's first experience should be positive. If a product looks and tastes similar to the traditional food product, not only will the consumer assess the substitute once, but should the taste be acceptable and outstanding, their purchasing frequency might have changed (Wansink *et al.*, 2005).

According to a study done by Swanson (1990), pea protein is relatively cost effective to extract, plant and harvest and can be grown in a variety of regions. As a result, there is a possibility that the pea protein based products will be more cost effective than its counterparts. Swanson (1990) continues that pea protein is considered a healthy alternative to animal protein. This was confirmed by a study done by Davies and Lightowler (1998) where various plant-based alternatives to meat were investigated. The findings were that Arrum, a product from pea protein and wheat protein, were the newest meat replacers on the market. According to Davies and Lightowler (1998), the Arrum product looked and tasted better than any other meat-substitute on the market. It also contained a higher percentage of protein and a lower percentage of fat.

It is critical to position a new alternative or replacement product in such a way that it is perceived as neither too similar nor too different from the traditional food product, or any product used as the standard to which the new product is compared (Wansink *et al.*, 2005). Wansink *et al.* (2005) continue to reiterate the importance of changing the consumers' view point in order for them to increase the consumption of the soy-based food.

In an attempt to influence the consumers' point of view regarding new food products, it is imperative to understand firstly the criteria of a food product that the consumer finds acceptable.

2.4 Summary

In this chapter it was indicated that pea protein, although being a relatively new product, is definitely a product worth investigating. The importance of this product as an environmentally friendly crop, a possible substitute for animal proteins, its health and nutritional benefits and the fact that it is allergen and GMO free was discussed. Pea protein was compared to soy protein and although the products are very similar and one can substitute the other, the fact that pea protein is allergen and GMO free has a definite advantage. This is especially important since consumers are becoming more educated and their demands on foods and food stuffs are changing towards more natural products. In the next chapter, the specific product attributes which could possibly influence a consumer's decision making process to consider a protein substitute product or replacement product will be discussed in depth.

CHAPTER 3: PRODUCT ATTRIBUTES INFLUENCING FOOD ACCEPTABILITY AND THE CONSUMER DECISION MAKING PROCESS

In this chapter the various extrinsic product attributes which have an influence on consumer acceptability of new or replacement food products are discussed. The Theory of Reasoned Action (TRA) is also introduced and a conceptual framework is proposed to understand further the decision making processes that consumers go through before they make an actual purchase of a possible new product.

3.1 Introduction

The preceding chapter discussed the significance of pea protein as well as the interest in introducing the product to consumers. In the present chapter, consumer's perceived acceptability of pea protein as a protein substitute in food products is discussed to understand better what a consumer is looking for in a new food product and what attributes they might find acceptable in a food product. Imram (1999) mentions the importance of appearance attributes on consumer perception and food product acceptance by stating that "*the first taste is almost always with the eye*". Imram (1999) continues that, visual sensations, amongst other things, might contribute to the consumer's acceptance of a food product since the first encounter is often visual and might, therefore, affect the subsequent willingness to accept a product. Therefore, the extrinsic attributes that influence the acceptability of food products will be discussed separately and in more detail in this chapter. These extrinsic attributes have been identified as the packaging and branding of a product, marketing, price, consumer education and knowledge. These product attributes could in turn have an influence on the decision making process that consumers go through before finally purchasing a new product. The decision making process of a consumer regarding the acceptability of a product and the consumers' willingness to purchase an unfamiliar product is argued in terms of the Theory of Reasoned Action (TRA) as proposed by Fishbein and Ajzen (1975). The TRA is also discussed to understand further the decision making processes that consumers go through before they make an actual purchase. This theory is in turn presented as part of a conceptual framework that addressed the influence of the key concepts in this study on consumers' decision to purchase. The conceptual framework is also presented in more detail in this chapter.

3.2 Consumer acceptability of new or replacement food products

The concept of consumer acceptability of food is described by Meiselman and MacFie (1996) as:

“In scientific terms, food acceptance is best classified as a hypothetical construct. Over the years and among different researchers, it has been referred to by such terms as palatability, hedonic tone, liking/disliking, food preference and pleasantness/unpleasantness”.

Meiselman and MacFie (1996), therefore, suggest that food acceptance is an abstract idea that everyone understands but there might be some difficulty to measure directly the concept. For that reason, as described by Meiselman and MacFie (1996), the term food acceptance has been referred to in various different ways, although it seems that the main focus of this particular description seems to be on the intrinsic attributes describing the sensory qualities of palatability, liking/disliking, food preference etc. In addition to the description of Meiselman and MacFie (1996), Imram (1999) continues that the concept of consumer acceptability is a complex term which will involve many interdisciplinary disciplines to understand fully the intricacy of the concept. Imram (1999) describes the study of consumer acceptability as follows:

“Complex and interdisciplinary, encompassing scientific disciplines including food science and technology, nutrition, psychology, physiology, marketing and hospitality”.

From these descriptions it appears that the concept of consumer acceptability is a complex concept and although an understanding exists of the meaning of the term, it might be difficult to measure the acceptability of a product. Therefore, a comprehensive scientific approach is necessary to determine the contribution of the various influences on consumer acceptability. In order to gain a better understanding of consumer acceptability, a more detailed examination will be done on previous studies and how they viewed the concept of consumer acceptability. Although many studies regarding consumer acceptability have been done over the years, each testing a different aspect of acceptability, each study has found different criteria influencing the consumers' acceptability. However, there are similarities within the definitions of acceptability as the following couple of examples will show.

Lampila and Lähteenmäki (2007) conducted a study, where they wanted to measure consumers' attitudes towards high pressure freezing of foods. Lampila and Lähteenmäki

(2007) found that the consumers accepted the end product with greater ease once they were informed that the new technological innovations will have a reduced environmental impact or would result in a reduction of price on food products. Lampila and Lähteenmäki (2007) came to the conclusion that consumer acceptance of this new processing method, was related to the consumer's attitude towards the benefits, possible benefits or risks that might be associated with this processing method. Lampila and Lähteenmäki (2007) also concluded that innovative consumers, those who are willing to try something new, and those consumers with a positive attitude towards technological development in general are more willing to accept the new processing method and, therefore, the new food product.

In another study, conducted by Bogue, Delahunty, Henry and Murry (1999), to determine market-oriented methodologies to optimise consumer acceptability of Cheddar-type cheeses, the authors identified additional factors that could influence consumer acceptability. Their study involved various research methods including focus group interviews, consumer questionnaires and sensory analysis. Their conclusion was that consumer choice and acceptability is extremely complex because it is influenced by many aspects of the food, the consumer and the consumer's environment. According to Bogue *et al.* (1999), these influencing aspects included people aspects such as age, education and nutritional knowledge. It also included environmental influences such as marketing variables, growth in snacking, convenience foods and size of the household. Lastly it included intrinsic sensory influences such as flavour, texture and appearance. These attributes can, therefore, be classified as intrinsic and extrinsic attributes.

Davel, Bosman and Webb (2003) investigated the effect of electrical stimulation of carcasses from Dorper sheep with two permanent incisors on the carcasses, on the consumer acceptance of mutton. Davel *et al.* (2003) reported on the effect that electrical versus non-electrical stimulation will have on the mutton's acceptability by the consumers. The measurement criteria used was the juiciness, tenderness, flavour and overall acceptability, of which there was no noticeable differences between the two methods. Davel *et al.* (2003), therefore, focused on the sensory acceptability of the product.

Bouwer and Bosman (2008) furthermore conducted a study on HIV-positive and HIV-negative consumers' acceptance of instant soy maize porridge compared to instant plain maize porridge. The objective was to assess consumer acceptability, preference and consumption intent of the instant soy maize porridge. The findings showed no definite preference between the two products and both were found acceptable. However, some of

the consumers, especially the HIV-positive consumers indicated that they will increase their consumption of the soy maize product because of the high protein content which should have a better effect on their health.

In a study done by Vermeulen *et al.* (2005), the attitudes and acceptance of South African urban consumers towards genetically modified white maize were investigated. They used conjoint and cluster analyses and the research was mainly done among urban consumers of white maize. Their conclusion was that about one third of the respondents were completely against GM foods, but the necessity of appropriate consumer GM education was clearly evident from the research findings.

Nyanzi, Jooste, Abu and Beukes (2010) examined consumer acceptability of a symbiotic version of the maize beverage mague, where they wanted to convert traditional mague into a health-promoting and affordable alternative to probiotic dairy products. They did this by adding various different cultures and then determining the acceptability of the finished product. The acceptability of the product was mainly determined by sensory methods; both by a trained panel as well as a consumer panel. Nyanzi *et al.* (2010) mentioned that they purposefully did not inform the consumers of the health benefits of the product because the authors are of the opinion that health benefits are often a foremost determinant of food product acceptability.

A further study by Simela, Webb and Bosman (2008) on the acceptability of chevon from indigenous South African goats compared to mutton, indicated that the chevon will be acceptable to consumers, provided that the meat is from goats of about two years of age or younger. The authors continue that in their opinion, trained sensory panels function as laboratory instruments and, therefore, their deductions will often match the results of instrumental evaluations. Although laboratory methods can provide particular and consistent information regarding the technical attributes of the chevon quality, only “untrained” consumers can provide information on the acceptability of the meat. For this reason, Simela *et al.* (2008) used sensory evaluation of chevon samples, conducted by consumer panels in order to determine the acceptability of chevon from indigenous South African goats. It was concluded by the authors that the level of consumer education was the most influential factor, both on the acceptance of the sensory attributes and consumption intent. The authors continue that this factor might be due to the level of income and possibly the degree of exposure to various types of foods. The findings of this study implied that highly educated consumers are more specific about accepting sensory attributes than groups with a lower level of education.

Hoban (1999) conducted a study on the consumer acceptance of biotechnology in the United States and Japan, based on general food products which have been genetically modified. Hoban (1999) found that both Japanese and American consumers' acceptance increased as soon as they were given an explanation regarding the nature of the changes to the crop, seeds or end products through biotechnology. These consumers were willing to accept the product as long as the food is safe and nutritious and if they could see an advantage to themselves or the environment. Additionally, in a study done by Afolabi, Oguntona and Fakunmoju (2001) on the acceptability and chemical composition of bread from beniseed composite flour, the authors found that sensory acceptable bread, with a higher nutritional value can be produced from beniseed composite flour.

As is evident from these studies, various factors were found that influence consumer acceptability of new or changed food products. These factors include the importance of increased consumer education, an understanding of the positive effect any product or production changes might have on the environment, food safety and a requirement for products to be nutritious and healthy to the consumers. Consumer education was clearly evident from the research findings where an increase of consumer acceptability was found of changed end products once they were informed that new technological innovations will have a reduced environment impact and it would result in a reduction of price. Additionally consumers' acceptance increases as soon as they were given an explanation regarding the nature of the changes to the crop, seeds or end products through biotechnology. Moreover, it was found that intensification in suitable consumer education on genetic modification (GM) crops and food will increase the consumer acceptability. Furthermore, consumers were willing to accept a changed food product as long as the food is safe and nutritious and if they could see an advantage to themselves or the environment, therefore, environmentally friendly. Likewise, health benefits were found often to be a foremost determinant of food product acceptability. All these factors have been identified as extrinsic attributes which will influence the consumers' perceived acceptability of a food product. These and other extrinsic attributes will be discussed in more detail in this chapter.

Further evidence from these studies suggests that sensory evaluation, therefore, intrinsic attributes, have an important impact on consumer acceptability of food products. The measurement criteria used during the sensory evaluation included juiciness, tenderness, flavour, texture and appearance and overall acceptability of the food product.

Considering pea protein as new and relatively unfamiliar source of vegetable protein, it is important to understand how this product can be introduced to consumers and what will influence the consumers' acceptability of pea protein as a vegetable protein source. It is critical for the development of a new product to understand what will convince the consumer that the new product is priced correctly, is a healthy alternative, and is a good tasting alternative product to what the consumer is familiar with. As is evident from the findings from other studies that there are various extrinsic and intrinsic product attributes which might influence the consumer decision making process, both before and after purchasing the product. In order to convince a consumer to purchase the product, there are certain extrinsic attributes which have been identified that will influence the consumer's decision making process. These attributes include marketing, packaging and labeling, product branding, new product education and knowledge, and the price. As described by the Theory of Reasoned Action (TRA), once the purchasing decision has been made, the intrinsic attributes, therefore, the sensory experience will play a role in convincing the consumer to repeat the purchase. The intrinsic and extrinsic attributes that will play a role in the acceptance of a new product will be described and discussed in the next section.

3.3 Product attributes influencing food acceptability

There are various factors that influence the consumer's acceptability of a food product. The two main cues are intrinsic and extrinsic attributes. According to Veale and Quester (2009), consumers use these attributes or cues to form their estimation regarding the anticipated experience or quality of the product. Additionally, Imram (1999) mentions that certain acceptability expectations for products can be created by attributes such as packaging, labelling, product information and stereotypes, therefore, extrinsic attributes. Imram (1999) continues that the perception of food products can also be influenced by factors such as taste, odour, information on labelling and images, attitudes, price, nutritional content, health belief and familiarity and brand loyalty.

3.3.1. Intrinsic Product Attributes

The intrinsic attribute of a product is defined as the attributes or quality that the product or items have "*in itself,*" or "*for its own sake,*" or "*as such,*" or "*in its own right.*" (Stanford Encyclopedia of Philosophy, 2010). Another definition of intrinsic attribute states "*belonging to a product or item by its very nature*" (Dictionary.com, 2010). Veale and Quester (2009) continue to describe intrinsic attributes as "*product attributes inherent to*

the objective nature of the product itself". These intrinsic attributes include taste, colour, flavour, texture, smell or aroma and appearance (Espejel *et al.*, 2007; Bogue *et al.*, 1999; Iop *et al.*, 2006) of a product. Most of the intrinsic attributes listed can be summarised as sensory attributes and can be detected by sensory analysis.

Sensory attributes have been known to play a significant role in the overall perception and acceptance of a food product (Imram, 1999). Imram (1999) also states that it has been well established that the level of pleasantness or unpleasantness of a food product is affected by the intensity of food-related sensory attributes. The fact that consumers expect the food product to taste nice remains one of the main requirements (Fuller, 2005) of an acceptable food product. Furthermore, consumers expect that the product's sensory attributes associated with a particular product are met as per the expectations created by the advertisements and various other extrinsic attributes (Fuller, 2005). Kennedy, Stewart-Knox, Mitchell and Thurnham (2004) found that consumers use the intrinsic attribute of appearance when purchasing chicken. Based on this attribute, the consumer will make a decision regarding the meat quality as the appearance projects the freshness, as well as to reflect sensory and health related properties (Kennedy *et al.*, 2004). Through a study done by Iop *et al.* (2006), the authors found that the intrinsic attributes of food products, such as colour, aroma, flavour and texture, play a very important role in the acceptance and choice of the product.

However, additionally there are extrinsic attributes which also play a very important role in the acceptance, preference, choice and intention to purchase food products. Veale and Quester (2009) found that although the intrinsic attributes are extremely important in the decision making process, they found that the consumers were more reliant on extrinsic attributes such as price and country of origin when very little other information regarding the product was available. Veale and Quester (2009) found that although their study was based on sensory evaluation, the consumers relied greatly on the extrinsic attributes even when the intrinsic attributes were available for evaluation. These extrinsic attributes include brand name, stamp of quality, price, country of origin, store, packaging and production information (Bernués, Olaizola & Corcoran, 2003) on which the acceptability of the product was based.

3.3.2. Extrinsic Product Attributes

Extrinsic attributes are defined as being “*outside a product or item; outward or external; operating or coming from without: extrinsic influences*” (Dictionary.com, 2010). It is also defined as “*not forming an essential or inherent part of a product or item, and originating from the outside*” (The Free Dictionary, 2010). Veale and Quester (2009) describe extrinsic attributes as any product characteristic which can be transformed without altering or influencing the objective nature of the product. Iop *et al.* (2006) identified extrinsic attributes such as brand, price and context to be among several extrinsic attributes to influence consumer behaviour regarding food purchases. These aspects include the production method, nutritional information, protected denomination of origin/certification, ethical, environmental, social and health (Iop *et al.*, 2006). Iop *et al.* (2006) believe that all these factors are important variables in food choice. Extrinsic attributes are further described by Espejel *et al.* (2007) as not only including brand as Iop *et al.* (2006) suggest but also include the designation of origin and image of a traditional product.

Even though various extrinsic attributes are mentioned in the different studies, it was decided to combine the attributes into five main groups because it is believed that most of the attributes can be associated with one of the main groups. The main groups are, therefore, as follows: price in relation to value for money, packaging design, product marketing, product branding and consumer loyalty and an increase in consumer education and knowledge. These attributes will be discussed in more detail in the following sections.

3.3.2.1. Price in relation to value for money

Consumers often have very little or no information available about the quality of a product (East, 1997). They, therefore, have to judge whether a product is of good value or not and whether they should buy it or not, based on the apparent value of the price (East, 1997). Therefore, East (1997) states that the price is used as one of the indicators to assess quality and in turn value for money. Acceptability of a particular product is associated with the willingness to purchase the product (Chem, Rickertsen, Tsuboi & Fu, 2002). Chem *et al.* (2002) make an assumption that as long as the benefits are good enough, consumers will be willing to pay a higher price. If the consumer can see some benefit in the change, whether environmental or a health benefit, it may be acceptable to them and they might even be willing to pay a higher price for it (Chem *et al.*, 2002).

In the study done by Veale and Quester (2009), the authors found that price was unmistakably considered the most significant attribute contributing to the perception of product quality. Through their analysis they found that a higher price was associated with a higher quality product and a lower price was linked to lower quality perceptions. However, consumers connect the perception of quality with purchase intention, therefore, the findings of this study indicated an increase of purchase intention towards the mid-price ranged product, having an acceptable quality (Veale & Quester, 2009). Cronje, Du Toit, Motlatla & Marais (2004) discuss price decisions and that in many cases the price is linked to the perceived exchange value and benefit of a product; how much the consumer is willing to pay for a product with a predetermined idea of benefit and value. The value of a product or service is determined by the benefit to the consumer and the sacrifice required in terms of money and effort to obtain the product (Cronje *et al.*, 2004).

As indicated by East (1997), consumers associate price with quality. Therefore, when introducing a new product into the market, it is important to position the product in such a way to give the impression of a high quality product, but within a perceived acceptable price range. A product with a too low price might cause the consumers to question the quality of the product. One of the methods of conveying the message of quality of the products, via an extrinsic attribute, as well as draw the consumer's attention, is to consider the quality and design of packaging.

3.3.2.2. Packaging design

When consumers walk into a supermarket, they are usually not looking for new products, so their attention needs to be drawn and focused on the new product. This is done by the design, shape and type of packaging (Cronje *et al.*, 2004). Cronje *et al.* (2004) describe packaging as "*the group of activities concerned with the design, production and filling of a container or wrapper with the product item in such a way that it can be effectively protected, stored, transported and identified, as well as successfully marketed*". Fuller (2005) mentions that great advances have been made in the food packaging science and that materials such as tin-free steel, new plastics, coated paperboard, composites of aluminium, plastic and paper and even edible food containers are now available. These new types of packaging are now microwavable, edible, biodegradable and recyclable (Fuller, 2005).

Besides the actual materials the packaging is made of, the significance of the use of packaging attributes, including colours, designs, shapes, symbols and messages, is to

invite and sustain attention (Silayoi & Speece, 2004). Silayoi and Speece (2004) continue that the importance of packaging design is to use it as a form of communication and to increase brand awareness. Cronje *et al.* (2004) also mention that one of the most important attributes of the packaging should be to promote product sales, and secondly for the consumer to be able to identify the packaging standing on the shelf and distinguish it from all the other competitive products. Not only should the design of the packaging be distinctive and eye catching by using bright colours and striking designs, but it can also be used to impart important information (Cronje *et al.*, 2004; Silayoi & Speece, 2004).

According to Cronje *et al.* (2004) and Silayoi and Speece (2004) there are certain criteria regarding the packaging that have to be taken into consideration even during the product development phase. Cronje *et al.* (2004) and Silayoi and Speece (2004) list these criteria as the packaging design, graphics and colour, what kind of packaging will be used, the type of packaging materials and the packaging size and shape.

Although the packaged product standing on the shelf affects the consumer decision making process, the process has become more complex (Silayoi & Speece, 2004). Silayoi and Speece (2004) explain that, on the one hand the consumers are paying more attention to the label the more health conscious they become resulting in consumers who know what products they are looking for and what information they need displayed on the packaging. The consumers mainly use the label information to assist with their decision making process (Silayoi & Speece, 2004). On the other hand though, modern consumers are constantly looking for ways to reduce the time spent shopping and preparing food. These consumers are, therefore, time pressured and will spend less time on the detailed consideration of the package elements (Silayoi & Speece, 2004).

As mentioned, the nutritional value of the product should be visible on the packaging; therefore, the label serves as a carrier of important information (Cronje *et al.*, 2004). Although according to the study by Silayoi and Speece (2004), the consumers wanted the label information to be simplified. Silayoi and Speece (2004) also mention that the biggest challenge that researchers face is how to integrate the product packaging into an effective purchasing decision model. This can be done when the researchers understand that packaging elements are important communication tools that can be used to convey marketing and nutritional messages (Silayoi & Speece, 2004).

3.3.2.3. Product Marketing

Although packaging and branding can be used as marketing tools, there are other ways needed to increase consumer awareness of a new product or line extension, and this can be done by product marketing (Cronje *et al.*, 2004). Cronje *et al.* (2004) describe marketing communication as the process of informing, persuading and reminding the consumer of the various products and the benefits of any new products. By having a good marketing strategy, companies can hold onto their existing customers but also create new ones by developing competitor markets (Vranešević & Stančec, 2003). Furthermore, with the competing markets becoming fiercer, companies need to differentiate their products by having an innovative marketing campaign (Vranešević & Stančec, 2003). Marketing strategies need to be based on research to understand the consumers' needs and also to understand the marketplaces in which these consumers are to be found; therefore, the company needs to understand their target market (Fuller, 2005). Fuller (2005) continues that once the target market has been identified, suitable sales and promotional materials have to be designed. For example, certain marketing campaigns or product labels are specifically aimed at children (Colby, Johnson, Scheett & Hoverson, 2010; Hebden, King, Kelly, Chapman & Innes-Hughes, 2011; Kunkel & McKinley, 2007; Soldavini, Crawford & Ritchie, 2012).

Lampila and Lähteenmäki (2007) conducted a study on the acceptability of high pressure freezing of food, thus changing the manufacturing process of food. They mention that generally consumers are not focused on processing methods themselves, but rather on the benefits or risks to themselves. Therefore, when a new processing method is applied, consumer acceptance of the new product is an important issue for the success of a new product in the market (Lampila & Lähteenmäki, 2007). Furthermore, when marketing a product, which has been manufactured using a new method, the advantages can be highlighted. Therefore, the new improved acceptability and convenience of the new product as well as high sensory and nutritional quality can be achieved and thus used to promote the product (Lampila & Lähteenmäki, 2007).

Marketing of products is aimed at influencing consumers' food purchasing and consumption behaviour (Colby *et al.*, 2010). Colby *et al.* (2010) continue that television used to be the dominant marketing tool for food or beverage products and although it is still widely used, there are other forms of marketing that are now used. These other forms include nutrition information on food labels and also a strategy called embedded marketing where products are subtly placed in television shows, movies, games or magazines. Colby *et al.* (2010) furthermore states that "word of mouth" marketing is used

more often, sales promotions, including coupons and catalogues, co-branding where different companies create one new product, cross-promotion where a new product is sold or introduced with an existing product, marketing tie-ins for example where restaurants use movie promotional material, premiums where toys or giveaways are given with the product purchase, on-line promotions for example with games or targeted e-mailing, event and location marketing at schools or sporting events and wireless marketing via cell phones, personal digital assistant (PDA's) and pagers. Marketing of a new product may also include the use of television, the Internet, magazines, outdoor billboards/posters and food packaging as suggested by Hebden *et al.* (2011).

Marketing campaigns will use many of these strategies in combination in order to reach the maximum number of consumers. As mentioned, marketing is used as a tool to introduce a new product to consumers or to convey a special message regarding the product to the consumers (Cronje *et al.*, 2004). For example, Colby *et al.* (2010) and Soldavini *et al.* (2012) identify the importance of nutrition information on food labels and mention that nutrition marketing can be defined as any type of marketing, including advertisements on television, radio or food labels of the food or beverage, but that nutritional information exceeds the minimal requirements. Therefore, as the health-consciousness of consumers increases, it creates an opportunity for food manufacturers and brand owners to target new markets and by understanding what motivates a consumer to purchase a particular product that provides a solid growth strategy for a brand (Kemp & Bui, 2011).

3.3.2.4. Product branding and consumer loyalty

Product branding is described by Cronje *et al.* (2004) as: "The brand is a mark that is unique to the product items or ranges produced and marketed by a particular business, which is chosen to distinguish them from similar competing products". A brand comprises predominantly a brand name and/or a logo, a design or a symbol, but it can also be any other element or activity which the manufacturer assigns to a particular product and this is mainly done to differentiate the product and to highlight the uniqueness of the product (Vranešević & Stančec, 2003). Furthermore, the brand can be a word, a letter or a group of words and can be distinguished either by the writing or by a specific emblem that is unique to that product (Cronje *et al.*, 2004; Erdem & Swait, 2004).

Some of the reasons why branding is important is because it imparts certain messages of comfort, known values, quality and security to consumers (Fuller, 2005). According to

Kemp and Bui (2011), consumers buy products and brands which are consistent with their physical, ethical and moral perspectives. Consumers will also believe in the brand credibility which is defined by Erdem and Swait (2004) as the believability of an object's purpose to have both trustworthiness and expertise. Therefore, the consumers will perceive that the brand has the ability and willingness to continuously deliver that which has been promised (Erdem & Swait, 2004). Furthermore, a brand is an entity that offers the consumer added value, over and above the products' functional characteristics, because a credible brand will increase consumer confidence and minimize risk (Knox, 2004). Additionally branding facilitates decision making because consumers will easily recognise the brands they normally buy and it also serves as a warning against products that might not meet the requirements set by the consumer (Cronje *et al.*, 2004).

The more the consumers are comfortable with the brand and the more they trust the brand, the more they are loyal to the brand (Duffy, 2003). This loyalty is a feeling that the consumer has towards a brand and there are certain advantages to having this loyalty (Duffy, 2003). Using brands in the marketing process has certain advantages. Consumers associate certain values and quality attributes with brands, thus promoting brand loyalty (Cronje *et al.*, 2004). Brand loyalty makes it difficult for retail companies to substitute it with other products which the consumer might deem as inferior (Cronje *et al.*, 2004). East (1997) also states that brand loyalty raises profits because consumers will buy specific brands in preference over other brands and usually for prolonged periods of time, thus the manufacturers benefit from the profit. Because consumers will recognise the brand and in so doing they are reassured of a certain quality standard they can depend on and the brand also offers a certain degree of protection for the consumers since the brand can be associated with a specific producer or manufacturer and this could lead to an influence in their action to purchase the product (Cronje *et al.*, 2004). Brand loyalty is also important when a new product is launched because the manufacturer capitalizes on existing consumer buying tendencies (East, 1997).

Over the past few decades, companies have used brand extensions as the vehicle for launching new products; in so doing cutting down on the cost of launching and marketing a completely new range (Buil, Chernatory & Hem, 2009). When it comes to expansion of an existing range, the brand can facilitate this expansion because the consumer will be far more willing to test a new product associated with an existing, well-known brand, than with an unknown, untrustworthy brand (Cronje *et al.*, 2004). In the study that Buil *et al.* (2009) conducted, they identified the influence that three key factors could have on brand extensions. These key factors are the supposed fit between the parent brand and the

extension, the category of brand used to launch the extension and the culture of the country where the extension is launched. Their findings showed that the extension which had a close fit to the parent brand had no influence on the consumers' acceptability. Likewise with the category of brand there was no significant effect on the consumers' evaluations. The biggest effect was the culture of the country where the extension was launched and this was mainly due to cultural difference between consumers.

Therefore, an assumption can be made that having a strong brand can facilitate the launch of an unfamiliar product, provided that the consumer education and increase in knowledge is stimulated by marketing.

3.3.2.5. Increase in consumer education and knowledge

During a study done by Saulais, Doyon, Ruffieux and Kaiser (2012) where they investigated the level and quality of knowledge of consumers from France, Canada and the USA, regarding dietary fats, Saulais *et al.* (2012) found that the level and quality of knowledge is associated with the foundation of the informational background. Saulais *et al.* (2012) furthermore found that a wider availability of information such as nutrition facts had a positive effect on the general level of knowledge. They concluded that information seems to achieve its role of growing consumer's awareness and knowledge of nutrients.

Altintzoglou, Nøstvold, Carlehög, Heide, Østli and Egeness (2012) conducted a study where consumers evaluated the sensory difference between fresh cod and thawed cod. Initially the consumers were asked to evaluate the cod fish fillets without any information and they all preferred the thawed cod fillets. Afterwards, as soon as the products were labeled "thawed" the consumers became unconvinced and less positive about the freshness and quality of the fish products. The researchers found that part of the uncertainty originated from the lack of knowledge of who was responsible for labeling of the products. As soon as more information was given and the consumers had a better understanding, their uncertainty lessened. The consumers, therefore, showed a preference for more information about the freezing process.

Furthermore, over the past couple of years, consumers have become increasingly more aware of their health and the types of food they eat which forces manufacturers to align the composition and promotion of their products to include the dietary objectives (Sibbel, 2012). Gray *et al.* (2003) reiterate this point by stating that in the Western world consumers are becoming more knowledgeable about food and food ingredients and,

therefore, consumer behaviour is becoming less predictable and more demanding of natural and nutritive products. According to Fuller (2005), although consumers have become more interested in their health and the role their diet and nutrition plays on their health, there is also an increase in the association between food and the prevention of disease. Gracia, Loureiro and Nayga (2007) also found that knowledge about the content of nutritional labels is clearly associated with the use of nutritional labels. During another study by Petrovici, Fearne, Nayga Jr. and Drolias (2012) regarding the nutritional knowledge, nutritional labels and health claims on food, they found a clear correlation between the sources of nutrients and the credibility of nutrition facts information and health claims.

Therefore, Altintzoglou *et al.* (2012), are of the opinion that informed consumers will be able to identify with information about product processing and make informed decisions based on the realistic quality expectations of the food products. It also seems that information achieves its role in increasing consumers' awareness and knowledge of nutrients (Saulais *et al.*, 2012). The consumers, furthermore, seem to require broader information regarding the processing methods (Altintzoglou *et al.*, 2012), the origin of the food or more specifically the country of origin and the processing procedure (Saulais *et al.*, 2012). Petrovici *et al.* (2012) also found during their study of supermarket shoppers in the South East of England regarding the nutritional knowledge, nutritional labels and health claims on food that the credibility of any nutritional claims is of the utmost importance. Consumers also require a greater emphasis to be placed on providing information that is easy to read, simple to understand and science based. This will give consumers greater confidence in the reliability of any health or nutritional claims on the product (Petrovici *et al.*, 2012).

3.4 The Theory of Reasoned Action

The Theory of Reasoned Action as proposed by Fishbein and Ajzen (1975) states that a persons' intention to perform a specific behaviour is a result of certain beliefs and these beliefs are about the behaviour itself, rather than the object of the behaviour. Fishbein and Ajzen (1975) continue that a person's attitude could be influenced by some of these beliefs towards a behaviour specifically the attitude towards performing a specific behaviour, knowing that the behaviour will lead to certain consequences and the evaluation of these consequences.

Therefore, as indicated in Figure 3.1, this attitude towards behaviour is deemed as one of the foremost determining factors of a person's intention to perform the behaviour in question. Furthermore, Fishbein and Ajzen (1975) explain that there are other beliefs that are relevant for behavioural intention and these beliefs are of a normative nature, as per Figure 3.1, where somebody, who is deemed as a referent, thinks that a person should or should not execute the behaviour in question. This person, in return, may or may not be motivated to conform to the behaviour which was advised by a referent. Fishbein and Ajzen (1975) continue that normative pressures are then the result based on the person's normative beliefs and motivation to comply. Fishbein and Ajzen (1975) determined that the person's subjective norm, or the attitude toward the behaviour, is seen as the major determining factor of the intention to perform the behaviour in question.

Finally, as indicated in Figure 3.1, Fishbein and Ajzen (1975), conclude that a person's behavioural intention is viewed as a result of two factors: his attitude toward the behavior and his subjective norm. Therefore, this intention is viewed as the immediate contributing factor of the resultant behavior.

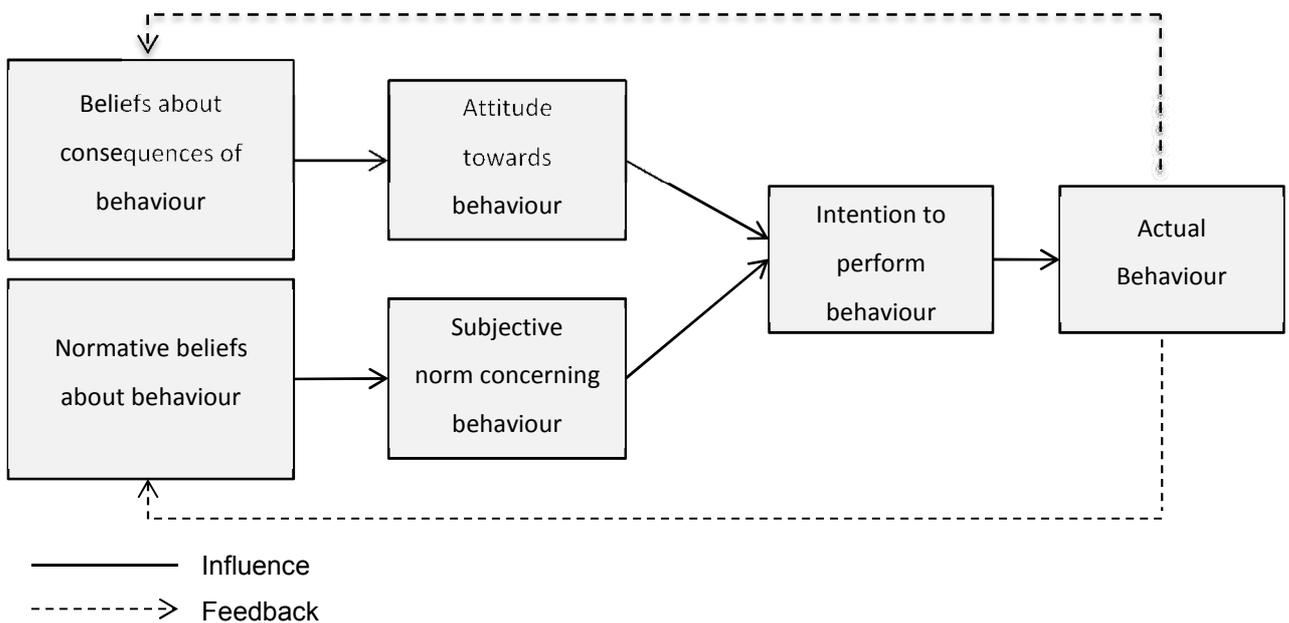


Figure 3.1 Schematic presentation of conceptual framework for the prediction of specific intentions and behaviours from Fishbein and Ajzen (1975)

In order to clarify the different concepts of the TRA, various authors have described or defined the concepts. When considering attitude in relation to TRA, Vijayasathy (2004) defines attitude as a personal view of something or an opinion; it is a person's inclination to exhibit a certain response or a general feeling about something or towards a concept or

object. On the other hand Marshall, Akoorie, Hamann and Sinha (2009) describe “subjective norms” as the forerunner for social pressure. The subjective norm describes whether a person perceives social pressure from other people they deem important. Subjective norms can also be predicted by normative beliefs, which is what specific people or groups of people think the person should or should not perform the behaviour, multiplied by the motivation to comply with their wishes (Towler & Shepherd, 1992; Brewer, Blake, Rankin & Douglass, 1999).

In order to gain a better understanding of the application of TRA in terms of the various external influences that will have an impact on the attitude towards a specific behaviour as well as the influence the subjective norm will have towards the intention to perform a specific behaviour and ultimately the performance of the actual behaviour, a couple of studies are presented.

Towler and Shepherd (1992) used the TRA to predict the consumption of high-fat foods, in particular, chips. In their study they used not only the TRA, but also the measure of habit and perceived behavioural control. According to Towler and Shepherd (1992), attitudes (as indicated in the TRA) have been important indicators and forecasters of the future eating patterns for a number of food stuffs. Towler and Shepherd (1992) furthermore mention that the TRA states that behaviour is anticipated by a conscious decision to perform the behaviour i.e. behavioural intention. Towler and Shepherd (1992) clarify that behavioural intention is divided into two components, the personal attitude towards the behaviour, in other words whether the behaviour is perceived as good-bad or pleasant-unpleasant and a second component, the subjective norm, in other words whether a person perceives social pressure from important others to perform the behaviour. The findings from their study, based on the standard components of the TRA, showed good prediction of the frequency of eating chips and they found that attitude was more important in determining intention than was subjective norm.

The TRA was further implemented by Marshall *et al.* (2009) in a study they conducted regarding the environmental practices in the wine industry. They used both the TRA as well as the stakeholder theory. In this study, Marshall *et al.* (2009) used the TRA to examine the managerial attitudes and subjective norms to understand better managements’ motivations for implementing environmental practices. Marshall *et al.* (2009) continue that the TRA consists of two main constructs, the personal attitude (behavioural beliefs) and social or subjective norms (normative beliefs). According to

Marshall *et al.* (2009), these constructs influence the formation of behavioural intention. In other words, it captures a person's positive or negative assessment of performing a particular behaviour. The second construct, the subjective norm, is mainly concerned with social pressures. Marshall *et al.* (2009) state that subjective norms are often measured by asking respondents to indicate whether "important others" will approve or disapprove of a certain behaviour. The findings of their study included that the influence the subjective norm has, was overwhelming compared to the other factors of the theories used.

Rehman, McKemey, Yates, Cooke, Garforth, Tranter, Park and Dorward (2007) used the TRA to identify and understand various factors influencing the uptake of new technologies on dairy farms in England. Rehman *et al.* (2007) explain that a person's intention to behave in a certain way consists of two factors. The first factor is the "attitude" or disposition or considered feeling toward a particular behaviour, whereas the second factor is the individual's perception of the social pressures to behave in a certain way. The TRA model was expanded by Rehman *et al.* (2007), as indicated in Figure 3.2, to include internal variables and external variables which have an influence on the attitude and subjective norm. In the expanded model Rehman *et al.* (2007) included beliefs that specific behaviour could lead to certain outcomes and that the evaluation of the outcomes will have an influence on the attitude. Rehman *et al.* (2007) furthermore expanded the TRA model and stated that there are beliefs that specific referents would think what a person should or should not perform the behaviour and the motivation to comply with the specific referents to influence the subjective norm, as per Figure 3.2. The findings of this study were that the TRA was confirmed and that the findings indicated the importance of attitudes in the successful adoption of technology.

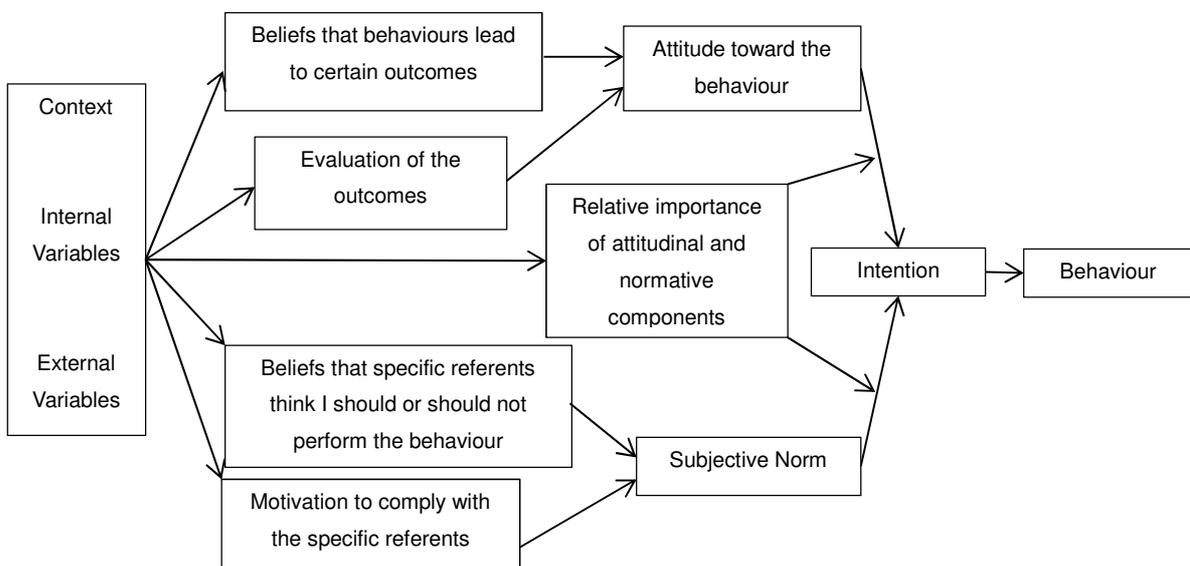


Figure 3.2 Components of Fishbein and Ajzen's theory of reasoned action from Rehman *et al.* (2007)

A further study done by Booth-Butterfield and Reger (2004) on *“The message changes belief and the rest is theory: the “1% or less” milk campaign and reasoned action”*, they investigated the results of the mass media campaign regarding the “1% or less” low-fat milk with regards to the nutritional strategy to reduce saturated fat in the diet. In this study, Booth-Butterfield and Reger (2004) used the data collected to connect the behaviour analysis with the TRA. According to Booth-Butterfield and Reger (2004), the TRA is one of the most extensively accepted and used behaviour change theories in the social sciences. Booth-Butterfield and Reger (2004) continue to describe the TRA as the intention to behaviour and this intention has two constructs namely attitude toward behaviour and the subjective norm. In turn, each of these constructs consists of two factors, where the attitude is formed through the behavioural beliefs and the evaluation of those beliefs (Booth-Butterfield & Reger, 2004). Furthermore the subjective norm is formed through normative beliefs and the impulse to conform to those beliefs. Booth-Butterfield and Reger (2004) stated that one of the strongest features of the TRA is its ability to function as a practical guide to indicate behaviour change. Ultimately the theory predicts and explains that to change behaviour, individuals will have to change either their personal attitude (behavioural beliefs) or their social norms (normative beliefs). According to Booth-Butterfield and Reger (2004), an assumption is made that once beliefs are adapted, the intention will be altered and the desired behaviour change realized.

Additional studies, using the TRA have focused and applied the different constructs of the theory of reasoned action. A study done by Rajagopal (2011) regarding the determinants of shopping behaviour of urban consumers, the author focused more on the subjective norm where the shopping behaviour is influenced by individuals or group behaviour of fellow consumers. Abdul-Muhmin’s (2011) study on the repeat purchase intention in online shopping, the author states that the intention to perform behaviour is important because it is the forerunner to the actual behaviour. Abdul-Muhmin (2011) continues that the online purchase intentions are believed to be the important forerunner to the actual online purchase. Therefore, a substantial amount of research effort has been devoted to ascertaining the elements of online purchase intentions (Abdul-Muhmin, 2011). In addition, Espejel *et al.* (2007) states that the best predictor of behaviour is the intention; and in turn the intention could be predicted for the attitudes towards the behaviour. Hansen, Jensen and Solgaard (2004) mention that the TRA predicts intention to perform behaviour by assessing the consumers’ attitude towards the behaviour rather than the consumer’s attitude towards the product or service.

Although these studies all addressed different concepts, they all used the TRA to discuss various influences on the attitudes of either consumers or decision makers towards the intention to perform certain behaviour. These studies also took the influence that subjective norms could have on the intention to perform a certain behaviour into consideration. Depending on the subject of the different studies, the resulting action was different. Furthermore, the studies also indicated which of the influences, either the personal attitude or the subjective norms, played a bigger role in the ultimate actual behaviour. These studies, therefore, showed that there are several external factors which could influence the consumer's decision making process before the actual behaviour.

3.5 Conceptual Framework of consumer decision making process

As Fishbein and Ajzen (1975) concluded in the TRA, a person's behavioural intention is as a result of two factors: his attitude toward the behavior and his subjective norm. Therefore, this behavioural intention is viewed as the immediate contributing factor of the resultant behaviour. However, in order to determine the person's attitude or the subjective norm's influence towards the behaviour or decision making process, an understanding of the various factors influencing the personal attitude and subjective norms has to be formed. As mentioned, consumers go through a process of decision making before performing the actual behaviour and there are various factors which will influence this process.

In order to include the internal variables and external variables which could possibly have an influence on the attitude and subjective norm, an expansion to the TRA is proposed in the form of a conceptual framework of consumer decision making process. As indicated in Figure 3.3, there are numerous extrinsic attributes of a product which could influence the acceptability of a product. Although there are numerous attributes which have been mentioned and included in various studies, it is believed that the most important attributes can be combined into five main attributes. These attributes include price in relation to value for money, packaging design, product marketing, product branding and consumer loyalty and an increase in consumer education and knowledge. A consumer's personal attitude towards a new product is influenced by these product attributes or extrinsic attributes. Should a consumer find these extrinsic attributes to be acceptable, as indicated by Figure 3.3, a consumers' attitude might be influenced and, therefore, the behavioural intent could become positive and turn into the actual behaviour.

Through the application of TRA, it is suggested that the exploration of the influence of external product attributes on consumers' perceived acceptance of Pea Protein as a protein substitute in food products, will assist the researcher to examine the attitude of a person towards a new product when they are introduced to a different and unfamiliar product. If a person believes that the product is good or healthy etc., will their attitude be changed and then once the attitude is positively changed, will the intention to perform a specific behaviour also change? As mentioned by Towler and Shepherd (1992), the attitudes are important indicators and forecasters of the future eating patterns. However, in order to influence or change the person's attitude, the various stimuli to cause the transformation need to be identified. The last and most critical step is to understand what will change the person's behavioural intent to the actual behaviour of purchasing the product.

The present study, as indicated in Figure 3.3 will, therefore, endeavour to understand what the personal attitude or view will be when more product information is given and the product is described in detail; whether this will have an influence on the consumer's opinion about a new product. The role that external attributes or influences have on the extrinsic qualities of a product and, therefore, in turn the influence on the personal attitude will be examined. As mentioned, various factors which might influence consumers' intention to purchase a new product have been identified. These external attributes, which have been discussed in detail in a previous section, include the marketing, packaging and labeling, product branding, price in relation to value for money and new product education and knowledge. It is believed that these external attributes will have an influence on the new product acceptability. Should the consumer firstly find a product acceptable, they then need to make a decision, based on their personal attitude or the subjective norms, whether they have the intention to purchase the product and then ultimately whether they will actually purchase the product.

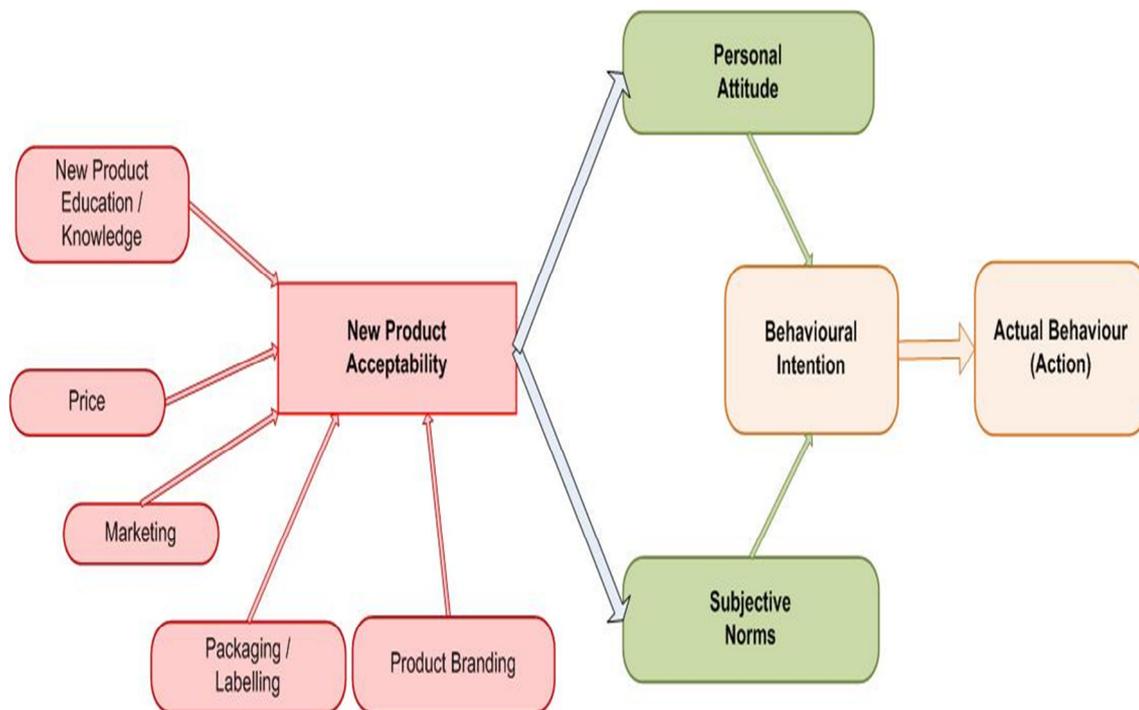


Figure 3.3 Schematic presentation of the conceptual framework, adapted from Fishbein & Azjen's TRA (1975), for studying various external attributes influencing new product acceptability, influences on personal attitude, behavioural intention and ultimately actual behaviour.

An additional influence that was identified is the subjective norm or significant other who can influence a person's beliefs and, therefore, influence the behavioural intention of the person, as indicated in Figure 3.3. The significant others, or people who a person holds in high regard, will easily influence a person's behaviour because the significant other's opinion is trusted and, therefore, effortlessly believed. Although the external attributes of the product will also have an influence on the subjective norm's personal attitude. This significant other will in turn share their attitude with the person and in doing so; influence the behavioural intent, whether positive or negative and subsequently influence the actual behaviour or action. Their opinion to approve or disapprove certain behaviour might influence the behavioural intent.

Ultimately the TRA predicts and explains that to change behaviour, individuals will have to change either their personal attitude (behavioural beliefs) or their social norms (normative beliefs). Booth-Butterfield and Reger (2004) make an assumption that once beliefs are altered, the intention will be transformed and the desired behaviour change realized.

3.6 Summary

Consumer's acceptability of new or replacement food products was discussed in this chapter and also how the various product attributes influence the food acceptability. A closer look was taken at the intrinsic attributes, mainly sensory evaluation as well as the extrinsic attributes. The extrinsic attributes that were discussed in more detail, were mainly the price and what consumers regard as value for money, the influence that the packaging design has on the acceptability as well the product marketing. The product branding and consumer loyalty was also discussed and the effect that increased consumer education and knowledge of nutritional foods has on the decision making process of the consumers. Furthermore, the Theory of Reasoned Action was discussed from the viewpoint of Fishbein and Ajzen (1975), to describe the theoretical aspect of the theory. Various existing studies were examined for a more in depth understanding of the different concepts and their application to research topics. Lastly the conceptual framework was proposed to understand further or explain the thought and decision making processes that consumers go through before they make an actual purchase. The research methodology, research aim and design as well as the various methods of data collection used in this study will be discussed in detail in the next chapter

CHAPTER 4: RESEARCH METHODOLOGY

This chapter identifies the research design and research methodology in accordance with the objectives of the study.

4.1 Introduction

The preceding chapters have highlighted the theoretical background of this study on the importance and interest in pea protein. Furthermore the influence that external product attributes have on consumer's perceived acceptance of pea protein as a protein substitute in food products was explored. An examination will follow reasoning that the research methodology that was used, was the most suitable to address the objectives set out for this research. This chapter presents the detailed description of the research methodology followed for this study. The research design and the methods used to achieve the research aim and objectives are discussed and justified, and each method is described and justified. Additionally, the reasoning for using a qualitative and explorative research design is explained. Moreover the location for the study, data collection techniques, sampling strategy, selection of participants and data analysis is discussed in detail. Finally, the measures taken to ensure the objectivity and trustworthiness of the study are specified in the final section of this chapter.

The aim and objectives of this study are recapped in the next section, to familiarize the reader with the chosen research design and the data gathering methods.

4.2 Research Aim and Objectives

As mentioned in the previous chapters, there is limited research information available on consumers' acceptability of pea protein as an alternative protein source. Therefore, the aim of this study was to conduct an exploratory study of the influence that external product attributes have on consumers' perceived acceptance of pea protein as a protein substitute in food products. In order to achieve this, the following objectives were formulated:

Objective 1

To determine the influence of perceived extrinsic product attributes on the acceptability of new food products in general in terms of:

- The perceived price of the product.
- The new product education and knowledge perceived necessary for acceptability.
- The perceived marketing of the product.
- The perceived packaging attributes of new food products.
- The perceived branding importance of a product.

Objective 2

To determine the influence of perceived extrinsic product attributes on the acceptability of food products that specifically contain pea protein, in terms of:

- The perceived price of the product.
- The new product education and knowledge perceived necessary for acceptability.
- The perceived marketing of the product.
- The perceived packaging attributes of new food products.
- The perceived branding importance of a product.

Objective 3

To explore consumers' attitude towards the unfamiliar pea protein product in order to determine what the consumers will find acceptable and what their purchase intent of this product will be.

Objective 4

To identify the acceptability attributes that influence the intention to purchase a pea protein food product.

Objective 5

To propose a conceptual model which identifies the influence that various extrinsic attributes have on new product acceptability and its influence on consumer purchasing decision.

4.3 Research Design

The limited insight and understanding of the influences that external product attributes have on a consumer's perceived acceptance of pea protein as a protein substitute in food products initiated a qualitative exploratory research design. Because qualitative research is described as any type of research that produces findings not derived from standard statistical procedures or any other means of quantification (Golafshani, 2003; Harris *et al.*, 2009), it is used to explain people's experiences, behaviours, interactions and social contexts (Fossey, Harvey, Mcdermott & Davidson, 2002). Qualitative research was further described by Neill (2007) and (eResearch Methods, 2013) as a study that involves analysis of data for instance using words from interviews, pictures or objects. Due to the fact that the qualitative research offers the researcher various options to gather data, it is deemed to be of value when formulating an exploratory study (Neill, 2007). Curtin and Fossey (2007) promoted the use of qualitative research because according to them this type of research focuses on a person's own point of view, experiences and opinions. It usually occurs in a natural, un-manipulated and non-bias environment; this promotes the ongoing process of exploration and discovery of new and promising results and provides the opportunity for a close working relationship between the participants and the researcher to develop (Curtin & Fossey, 2007). Consequently it was the most appropriate research paradigm to apply to gain a better understanding of the consumers' attitudes towards the research subject. Qualitative research furthermore seeks understanding, enlightenment and extrapolation to similar situations (Golafshani, 2003). The purpose of a qualitative research design is to develop a more comprehensive understanding of people's interpretation (Key, 2002) of new and unfamiliar situations. Qualitative research design, therefore, gave the researcher the opportunity to construct an in-depth inquiry into the consumers approach towards new food products and their decision making process.

As mentioned in the problem statement, the concept of pea protein as a protein substitute in food products is relatively new and unfamiliar. The goal of the study was not to generalize the findings, but rather to develop an understanding of the issue. It was, therefore, necessary to explore the participants' initial view or sense towards the concept. In order to achieve a better understanding and to have the opportunity to explore the view point, the qualitative paradigm and the implementation of an exploratory research design was incorporated during the design of the methodology for this study. This afforded the researcher the opportunity to gather thorough and comprehensive data or information and it also increased the richness and depth of explorations that could be researched (Key, 2002). Qualitative research allows the researcher to deal with explanatory concepts and is

best used for problems requiring insight and understanding (Robson, 1989). The opportunity and setting is, therefore, created to allow people to explain their opinion and how they perceive a certain idea. Moreover exploratory research is described by Bickman and Rog (1998) as conducted to understand better and to provide a familiarization with the topic under study. An explorative study is undertaken when not much is known about the subject and no previous study information was available (Bickman & Rog, 1998). According to Routio (2007), an explorative study is done when no earlier model is available and hardly any information is available on the outset of the research to be used as the basis of a study, which is particular of the current study. Using a qualitative and exploratory research design allowed the researcher to investigate and explore the participant's opinions and attitudes by using various data gathering instruments. In the case of pea protein, limited previous information on the influence that external product attributes have on consumers' perceived acceptance of pea protein as a protein substitute in food products, is available, which supports the argument for the use of a qualitative paradigm in which an exploratory research design is implemented.

4.4 Unit of Analysis and inclusion criteria

The unit of analysis for this research was identified as female shoppers, being the main grocery and food shoppers in the household, living in suburban areas. According to Liamputtong (2011), participants for a qualitative research are specifically chosen because it is believed that they will provide the best possible information on the topic of the research and to address particular questions the researcher might have. Some of the qualifying criteria the participants had to adhere to was that they had to be in charge of household grocery and food purchases. One of the main reasons for these criteria is that the female shoppers are generally the persons who decide what their families should be eating. They have to make the decisions about the menus and what will be prepared for the household. Specific age groups and cultural diversity were not considered for this study as it was exploratory in nature and general consumer opinions were important.

The sampling strategy and the way in which the female shoppers were recruited are discussed in detail in the next section.

4.5 Sampling Strategy

Due to the fact that a qualitative and exploratory research design was followed to establish the influence that external product attributes have on consumers' perceived acceptance of pea protein as a protein substitute in food products, a non-probability sampling strategy was implemented. In qualitative and exploratory research, it is often difficult to identify beforehand who might fall into the category of interest (Hall & Hall, 1996). Therefore, the non-probability sampling strategy specifically consisting of purposeful and convenient sample strategy was followed and the snowball recruiting method was used.

The purpose of a non-probability purposeful sampling strategy is to identify specific groups of people who possess a specific characteristic and who are deliberately selected to reflect particular features relevant to the research subject (Mays & Pope, 1995; Ritchie, Lewis & Elam, 2003; Harris *et al.*, 2009). These people were identified as female shoppers who are in charge of household grocery and food purchases and were, therefore, specifically recruited to participate in the research. Purposeful sampling is, furthermore, described as sampling done in a methodical and planned way to find these specific research participants that fit within the inclusion criteria (Harris *et al.*, 2009).

Furthermore, the convenient sample strategy was also implemented because this type of sample strategy represents sites or individuals from which data can easily be collected and where access is convenient (Cresswell, 2007), but also because people can be chosen based on whoever happens to be around at a given time (Hall & Hall, 1996). The participants of the research, therefore, resided mainly in the Johannesburg and Pretoria suburban areas and the reasoning for choosing these areas is further explained in section 4.5.1.

In addition to the non-probability purposeful and convenient sampling strategy, the snowballing recruiting method was applied. Snowball sampling or recruiting is where one participant is selected and asked to identify other similar individuals who can take part in the research (Seidman, 2006; Harris *et al.*, 2009). Furthermore, snowball recruiting is described as a process where participants identify others with direct knowledge relevant to the research being conducted (Fossey *et al.*, 2002). The researcher, therefore, identified family members, friends and colleagues who conformed to the unit of analysis, being female shoppers who are in charge of household grocery and food purchases. Originally five individuals were identified and contacted with the request to act not only as

participants, but also as hostesses. The initial contact was made either in person or telephonically. These hostesses were given a brief introduction and explanation regarding the subject of the research. The introduction was kept brief as to prevent the hostesses from being biased during the actual data gathering processes. Upon agreement to act as hostesses, they were given a recruiter guideline, stating the objectives of the research, which she could share with other potential participants, as well as a short description of the inclusion criteria for potential participants (see Appendix 2 - Recruiter Guideline). The hostesses were requested to contact various other individuals who conformed to unit of analysis and to extend an invitation to participate in the research on a voluntary basis. The individuals contacted by the hostesses were acquaintances, family member, friends, neighbours or colleagues. Thereafter, arrangements were made for a meeting date, time and venue for when the data collection would take place and their participation for the study would be required. Although the data collection procedures will be discussed in further detail in a later section, it is worth mentioning that for the main study, the snowball sampling method was adopted extensively for focus groups and is called the “word-of-mouth” technique, because many times potential participants would be more willing if they were invited by somebody they know and who will also be participating (Liamputtong, 2011).

One of the biggest challenges faced by using the non-probability sampling, incorporating the purposeful and convenient sampling strategies, is the possibility of the sample being biased (Hall & Hall, 1996). The initial informants or hostesses may choose participants that fall into their social standing and have the same interests, rendering the sample a non-representative one. However, because this research was exploratory in nature and the general consumer opinions were important, having participants from the same social standing was not considered to have an influential effect on the findings of the study.

A further challenge could have been that the participants may be given the wrong information about their part in the study and they might, therefore, have the wrong expectations beforehand. In order to overcome some of these objections, it was suggested by Krueger (1994) that during the screening or invitation process of potential participants, the hostesses refrain from using the term focus groups. Participants were rather invited to discuss or share their ideas with other people, in this way conveying the idea that the discussion will be informal (Krueger, 1994). The hostesses were also informed, via the recruiter guideline, what information they could provide to the participants. During the introduction of the data gather process, the study and the intention of the study was explained again.

4.5.1 Study location

As mentioned in the previous section, in order to implement the convenient sample strategy, which is described by Cresswell (2007) as sites or individuals from which data can easily be collected and where access is convenient, the hostesses who were approached to participate all resided in the Gauteng province. The Pretoria and Johannesburg areas, within the Gauteng province were chosen because these are two of the major suburban cities in South Africa. The hostesses in turn, invited participants who also resided in these areas.

Although Gauteng is South Africa's smallest province, it is the country's most populated province with over 12 million residents. Up to 97% of this population lives in the urban centres of Gauteng (South Africa Info, 2012). According to South Africa Info (2012), most of South Africa's research and development takes place in Gauteng, where many leading research institutions are based. These institutions include the Council for Scientific and Industrial Research (CSIR) and the Agricultural Research Council (ARC), that focus mainly on biotechnology and food technology. Because of the high population of Gauteng, many new food product launches takes place in this region, exposing the residents to a variety of new products. Gauteng was, therefore, the most desirable province in which to start the research, but the research can be expanded to other areas and provinces to determine other opinions.

The aim and objectives of the research have been briefly recapped and the research design described in detail. Moreover the unit of analysis was defined and sampling strategy and study location was discussed. In the following section the methods by which the data were collected will be discussed in a thorough and comprehensive manner.

4.6 Methods of Data Collection

Data instruments are data collection methods used to gather specific information (Oppenheim, 1996). There are various instruments available and the most appropriate method or methods for a particular study need to be chosen carefully. A combination of various study methods, materials and perspectives, adds a better understanding and depth into any investigation (Fossey *et al.*, 2002). Therefore, a multi-method data collection approach was taken which allowed the researcher to use different data collection instruments for the study to improve the legitimacy and dependability of the research or assessment of the findings. In this regard focus group discussions, a

sentence completion exercise and a vignette were used as each instrument dealt with specific objectives set out in the study on the influence that external product attributes have on consumers' perceived acceptance of pea protein as a protein substitute in food products. Each of these data collection instruments will be discussed in detail in the following sections.

4.6.1 Focus groups

Focus groups are described by Fossey *et al.* (2002) as "*facilitated group discussions that make use of the group interaction as the means to explore the research issue being studied*". According to Krueger and Casey (2009), focus group interviews typically have five characteristics, which include "(1) people who (2) possess certain characteristics, (3) provide qualitative data (4) in a focused discussion (5) to help understand the topic of interest". A focus group interview, which is also considered an exploratory interview, is described by Oppenheim (1996) as one that is used to develop ideas and research hypotheses rather than to accumulate data and statistics. Focus group interviews are also used when the researcher is more concerned with trying to understand how ordinary people think and what their opinions are regarding the specific topic of research (Oppenheim, 1996).

Other advantages of focus group interviews as stated by Marvasti (2004), are that they can be very stimulating and, therefore, the participants will not become bored. The participants have the opportunity to elaborate on each other's answers and, therefore, produce richer and more in-depth data. Ghauri, Grønhaug and Kristianslund (1995) explain that the major difference between focus group interviews and for instance in-depth interview is that, not only is there an interaction between the interviewer and respondent, but during the group interview there is also interaction between the other respondents or participants. The focus group interview is also a relatively cheap and convenient way of gathering information from several respondents in a short time (Ghauri *et al.*, 1995). Robson (1989) mentions that group behaviour differs from individual behaviour and it also differs according to the size and the life of the group. A group takes on a life of its own and has an influence back onto the individual, therefore, what was said in the group relates to the experiences of the individual; it is, therefore, an excellent way of revealing people's ways of thinking (Robson, 1989). In light of these advantages, the use of focus group interviews were a very useful tool used to gather data on the influence that external product attributes have on consumers' perceived acceptance of pea protein as a protein substitute in food products.

Regarding the size of the focus groups, most studies agree that a smaller group with about five to seven participants is the optimum number (Krueger & Casey, 2009; Oppenheim, 1996; Webb, 1992). It is small enough to allow for greater and more equal participation of all members, it leads to a higher level of agreement after discussion and provides more contentment for group members (Krueger & Casey, 2009). In larger groups, with more than seven participants, people might contribute less equally and feel that their groups were unmanageable and an ineffective use of their time (Krueger & Casey, 2009). Group discussions are also described by Webb (1992) as a small group of respondents who engage in discussions regarding a specific topic. According to Webb (1992), small groups consist of between six to ten participants and the interaction between the individual group members is of great interest. Oppenheim (1996) and Krueger and Casey (2009) confirm the typical composition of a focus group as between five to seven participants, selected because they have been identified as having certain criteria in common that relate to the subject of the focus group. The focus group interviews of this study consisted altogether of twenty four women and each group was comprised of between three and five participants who matched the inclusion criteria.

According to Seidman (2006), there are two criteria the researcher can use to confirm that enough focus groups were held with enough responses from the participants. The one is sufficiency and the other is saturation of information. Sufficiency would be reached when there is a sufficient number of participants to represent the range of participants and sites so that the people outside of the study will have a possibility to connect or relate to the findings of the study. The second criterion is the saturation of information. Although it is extremely difficult to pin point the exact moment when saturation is reached (Seidman, 2006), the focus groups were repeated several times, with different people until a point of saturation is reached and no new information is available (Oppenheim, 1996; Krueger, 1994). An interview guide was compiled which included all the questions to be posed to the participants (Appendix 5 – focus group interview guide). This controlled format allowed the researcher to guarantee question consistency between different group interviews. It was, therefore, evident, when no new information came to light during the interviews and the same opinions were raised, that a point of saturation was reached. A repetition of the information started to appear from focus group four and, therefore, two further focus group interviews were held to confirm that the information and opinions were indeed being repeated. For this reason, no more than six focus groups were held, each group comprised of between three and five participants, totaling twenty four women.

Another essential characteristic of a focus group interview to take into consideration is the location of where it is held. It is stated by Liamputtong (2011) that having the group interview in a familiar setting will decrease the influence the researcher might have on the participants and it should be held in an environment where the participants feel at home and can be themselves. Consequently the focus group interviews were held in the hostess' homes which were familiar to all the participants and where they felt comfortable in a neutral and relaxed environment. The exception was the pilot study group as well as the first focus group interview, which were held at an office in Midrand, Johannesburg. The participants all worked at the office and were, therefore, familiar with the environment and hence were comfortable with the venue.

In order to explore objective 1, the participants were asked six different questions, each addressing a different element of the extrinsic product attributes of new food products, as per Table 4.1 below.

Objective 1

To determine the influence of perceived extrinsic product attributes on the acceptability of new food products in general in terms of:

Table 4.1 Focus group interview questions addressing Objective 1

Objective 1	Question Asked
Question 1	“When you walk into a grocery store, what is your opinion about a new product? Any product that you see, how do you notice them? How do you feel when you see a new product on the shelf, grocery wise?”
Question 2	“The price of the product? How would the price affect you? At what price would you feel that you can buy this product? What is your connection with price and a new product?”
Question 3	“Is there any specific information regarding nutrition or health aspects or things that would really entice you?”
Question 4	“Were are you confronted with new products? Where do you notice new products?”
Question 5	“What about the packaging will make it interesting for you?”
Question 6	“Regarding branding, how important is a brand for you?”

These questions were further explored by the researcher by asking probing questions to gain a deeper understanding of the participants' opinions and their response to the questions. Ekey (2011) describes probing questions as questions which are intended to help the participants think more deeply about the issue at hand, in order to extend the participant's knowledge and to encourage their explanations (Sahim & Kulm, 2008). The questions stated in Table 4.1 were specifically asked to address the influence of perceived extrinsic product attributes on the acceptability of new food products in general in terms of the participants' opinions about a new product, the perceived price, the branding, packaging, marketing and product knowledge or specific information that the participants would like to know about a product.

The focus group discussions were, furthermore, used to explore Objective 2, by asking the participants the same questions as for Objective 1; however, these questions were related to new food products which specifically contains pea protein. The researcher gave a short description of pea protein and the participants were given the opportunity to ask

clarifying questions regarding the actual product. The answers given were kept short as not to give any leading clues to the participants seeing that the aim was to gain a deeper understanding of their opinions regarding a new and unfamiliar protein product.

Objective 2

To determine the influence of perceived extrinsic product attributes on the acceptability of food products that specifically contains pea protein, in terms of:

Table 4.2 Focus group interview questions addressing Objective 2

Objective 2	Question Asked
Question 1	“The idea is that when you walk into a grocery shop and you are confronted with a product that says, contains pea protein, what would your reaction be? A new product, new launch, have a bit of information on there, what would make you consider it?”
Question 2	“Would you be willing to pay a premium for it?”
Question 3	“Would you need to know what the other value is? Knowing a little more about it, if you have more knowledge or education about it?”
Question 4	“Where would you typically find that information?”
Question 5	“On the packaging it gives you all the benefits. You know the packaging looks nice. Would you try it? “
Question 6	“If it is a well-known company, with a specific brand which brings out a new product, would that convince you to buy that product?”

Once again, probing questions were asked to make certain that the researcher correctly understands the comments made and the opinions raised by the participants regarding the influence of perceived extrinsic product attributes on the acceptability of food products that specifically contains pea protein. In order to clarify further the participants’ attitude towards an unfamiliar protein product but also to attempt to understand their purchase intent of a new food product containing pea protein, as second research instrument, called a sentence completion exercise, was used.

4.6.2 Sentence Completion Exercise

The second data instrument used was a sentence completion technique where the respondents were requested to complete a series of sentences (Adams & Schvaneveldt, 1991). This technique has proven to be useful in the assessment of personality and it is, therefore, assumed that the respondents are supplying important information about themselves, or their perceptions of a situation when they respond to the sentence stimuli (Adams & Schvaneveldt, 1991).

Sentence completion technique is also described by Schlackman (1989) as another very useful technique in market research and which originated from clinical and psychological work. Schlackman (1989) described the technique as giving the respondent a very limited clue in relation to the theme about the research. The respondent is then encouraged to write down the first thing that comes to mind in relation to this very vague clue regarding the research topic. The idea behind this particular technique is to stimulate the most dominant ideas which are, according to the respondent, related to the topic. Most often the responses obtained from this technique are very similar to those obtained from a non-directive interview (Schlackman, 1989). Another important characteristic of this technique is that it lends itself effortlessly to qualitative coding procedures (Schlackman, 1989). According to Gordon and Langmaid (1988), an interview can be a threatening environment for many participants and so, by using projective techniques the participants will be more relaxed. Techniques such as word association, sentence completion etc. all require very little practice, are not particularly threatening and, therefore, suitable. Gordon and Langmaid (1988) state that this method is often used by an interviewer to get to responses which are lying just below the surface of the participant. It is primarily useful when time is limited and depth of feeling still needs to be tapped (Gordon & Langmaid, 1988). Webb (1992) states that it is important to take note of the beginning part of the question; which should not be leading but should allow the participants to answer in their own way.

The utilization of the sentence completion technique in the study on the influence that external product attributes have on consumers' perceived acceptance of pea protein as a protein substitute in food products, was to ascertain the participants' opinions or feelings towards a new product containing pea protein that will be introduced to them. What will their immediate reaction be and what influences will prompt them to buy or not buy the product? The sentence completion exercise was used to answer Objective 3 of the study.

Objective 3

To explore consumers' attitude towards the unfamiliar pea protein product in order to determine what the consumers will find acceptable and what their purchase intent of this product will be.

Table 4.3 Sentence completion exercise addressing Objective 3

Objective 3	Question Asked
Question 1	"I will find a product which has a high content of pea protein acceptable if... "
Question 2	"I intend to purchase a product which has a high content of pea protein when..."

The participants were given two questions which needed to be completed in written format, giving three reasons for each point. There was no time constraint for the completion of the task. An example of the sentence completion from can be seen in Appendix 6. Upon the written completion of this task, the forms were handed back to the researcher. The answers to these questions were analysed and interpreted, as will be discussed in further detail in the next chapter.

4.6.3 Vignette

The third data gathering instrument applied in this research was a vignette. Schoenberg and Ravdal (2000) describe a vignette as a methodological tool that entails the crafting of a short, descriptive sketch of an incident, depicting a real life situation and representing it to the participants to draw out their opinions and reactions to its contents. The vignette is essentially a very short story that when carefully constructed and pre-tested, simulates real life experiences (Schoenberg & Ravdal, 2000). Alexander and Becker (1978) define vignettes as "*short descriptions of a person or a social situation which contain precise references to what are thought to be the most important factors in the decision-making or judgment-making processes of respondents*".

The vignette needs to be designed in such a way that it will elicit focused responses from the participants (Hughes, 1998). Participants are usually asked to describe how they would react in a specific situation or how they think a third person would react (Hughes, 1998). Rapport, Wainwright and Elwyn (2005) classify the use of vignettes under arts based methodology where displacement techniques are used. Rapport *et al.* (2005)

mention that these techniques are used to shift the attention away from the research participants to an unknown other. Therefore, the question was not directed at the person directly and a hypothetical situation was created where the participant was asked to imagine a situation and then describe how they or somebody else would react in that situation (Rapport *et al.*, 2005). The whole experience then becomes non-threatening and the participant will be more honest and open in their responses (Rapport *et al.*, 2005). Although the purchase intention of a new food product containing pea protein was touched on during the sentence completion exercise, the vignette was used to prompt the participants to identify the acceptability attributes that would influence their purchasing decision.

According to Schoenberg and Ravdal (2000), there are usually a couple of follow-up questions to obtain the participants' responses and opinions. The story telling nature of the vignette is relaxing, enjoyable and interesting and will put the participants at ease and they will not have the feeling of being overwhelmed by the interviewing process (Schoenberg & Ravdal, 2000). One of the most important factors is that the theme of the vignette is held constant over a varied group of respondents. That will allow the research instrument to secure uniformity, which is a prerequisite for the reliability of the instrument (Soydan & Stål, 1994).

During this research the participants were given marketing information in the form of a brochure regarding a snack bar which contains pea protein (see Appendix 7 – Nutralys in Snack Bars). This visual aid was used to prompt the participants to think of the possible applications of pea protein products and to assist with the visualization of the vignette.

The vignette the participants were given is as follows (see Appendix 8 – Vignette):

“You are doing your weekly grocery shopping at your local supermarket and on your shopping list you have written in big letters that you need something for the lunch boxes, both for the kids and for your husband. Because you are adventurous and also desperate to find something new and nutritious, you are looking for something special.

You remember hearing or reading somewhere that a diet high in protein helps with sustainability and the feeling of being satisfied. You wonder, what can you add to the lunch boxes that will be high in protein and also tasty at the same time?

You walk up the aisle to the cereal section. They are advertising a new cereal bar which has a high pea protein content. You have never heard of “pea” protein before.”

The participants were requested to read the information on the brochure and afterwards read the vignette and then to list and rank three of the most important aspects that would convince them to add the cereal bar to their shopping basket. The vignette was used to find answers to Objective 4 of the study to identify the influence that external product attributes have on consumers' perceived acceptance of pea protein as a protein substitute in food products.

Objective 4

To identify the acceptability attributes that influence the intention to purchase a pea protein food product.

Table 4.4 Vignette addressing Objective 4

Objective 4	Question Asked
Question 1	"List and rank three (3) of the most important aspects that will convince you to add this cereal bar to your shopping basket? Please give a reason for each."

The participants were also requested to give a reason for each answer in a written format. Upon the written completion of this task, the forms were handed back to the researcher. The answers to these questions were analysed and interpreted, as discussed in the next chapter.

The researcher used a multi-method data collection approach which allowed the researcher to use different data collection instruments for the study. In this regard focus group discussions, a sentence completion exercise and a vignette were used to gather data and examine information. The importance of using multi-method data collection will be discussed in the next section, in terms of the importance of supporting triangulation of data from the different methods.

4.7 Triangulation

Triangulation is a method used to increase the validity of a qualitative study (Harris *et al.*, 2009). Triangulation requires using multiple methods, sources and/or investigators to promote cross-comparison and validation of results (Harris *et al.*, 2009). Golafshani (2003) states that triangulation is a strategy for improving the validity and reliability of the research or evaluation of the findings. The term triangulation is further used by Denzin and Lincoln (1994) to describe where more than one research method is applied, although it does not necessarily have to be three, it simply refers to multiple methods. Curtin and Fossey (2007) state that using triangulation in research will establish trustworthiness of the data and that in turn increases the readers' confidence that the findings are worthy of attention.

Ghauri *et al.* (1995) also refer to triangulation as a combination of methods to study the same incident and in that way improve the accuracy of the findings. Ghauri *et al.* (1995) state that even if the findings for the same objective by using the multi-method approach, differ, it can still lead them to a better understanding and new questions to be answered by research to follow. Using more than one method will ensure the trustworthiness and validity of the study findings, especially where qualitative studies are considered. According to Curtin and Fossey (2007), there are two purposes for the use of triangulation; confirmation and completeness. In order to increase the integrity and soundness of the findings of data, the use of two or more data collection instruments and techniques to overcome the bias of using a single-method, single-observer or a single theory approach is recommended (Curtin & Fossey, 2007). Using multiple methods will, therefore, serve as a confirmation of the data and, therefore, the use of focus group interviews, sentence completion exercise and a vignette was used as data gathering instruments to identify the influence that external product attributes have on consumers' perceived acceptance of pea protein as a protein substitute in food products.

Regarding the completeness, Curtin and Fossey (2007) state that triangulation used for this purpose means that conflicting findings can enrich the explanations for the objectives, rather than leaving the researcher uncertain about what to do with data that did not come together. This is also confirmed by Lietz *et al.* (2006) who state that triangulation can be an important strategy in qualitative research where opposing viewpoints can bring an increased understanding of the data. During the data gathering process there were a couple of incidences where the participants disagreed with each other.

These disagreements were used as an opportunity to discuss other viewpoints and to gain a deeper understanding of participants' perspectives.

The multi-method data gathering instruments were, therefore, used to enhance the completeness and the confirmation of the data collected. The actual data collection procedure will be discussed in the next section.

4.8 Data collection procedure

The data collection procedure will be discussed in terms of the pilot test as well as the main data collecting procedure. A step by step description will be given to enable the transferability of the data.

4.8.1 Pilot Testing Instruments and Procedures

Before the commencement of the main study, the suggested data instruments were pilot tested. The pilot test has basically the same layout as the main study, except the data gathered is not added to the data analysis; it, therefore, does not form part of the actual study. In view of the fact that the data gathering instruments and procedure are being tested, certain necessary changes can still be made before the main study. However, after the necessary changes that came to light during the pilot study, have been made, the instruments and procedure has to remain the same in order to ensure transferability and credibility. Therefore, the focus group interview, sentence completion exercise and the vignette were first tested by a group of participants to ascertain whether the questions were formulated in a correct and comprehensive way and whether the information obtained would answer the set objectives. It was also necessary to determine whether the participants had problems in understanding or answering the questions directed to them in any of the data instruments. The procedure was also tested in order to gain a better understanding of the duration of the interviews and whether any changes needed to be made to the process.

The pilot study was conducted at the offices of Orkila South Africa Pty. (Ltd), in Midrand, Johannesburg. The supervisor was also in attendance to observe the proceedings specifically to see whether the researcher was able to instruct the participants how to proceed with each instrument as well as to apply the probing technique. The focus group consisted of five female colleagues of the researcher and were of different age groups, however, all adhered to the unit of analysis, which stated that the participants had to be

female shoppers, be the main grocery and food shoppers in the household and living in suburban areas. The participants recruited all reside in Gauteng, either in Johannesburg or in Pretoria and participated on a voluntary basis.

The ensuing procedures were followed during the pilot study:

- A general welcome was extended by the researcher (Tineke Quinn) who acted as the facilitator of the interviewing session.
- The supervisor was introduced to the group and an explanation that she was present to observe the researcher and to make recommendations regarding the data gathering instruments and the procedure was given.
- Each participant introduced themselves to the group.
- The researcher introduced the study and explained the purpose of the study in order that all the participants understood what was expected of them and that they were not brought together under false pretenses or misinformation.
- The researcher informed the participants that a digital recorder of high quality would be utilized, where the voices will be clear and distinguishable, so there was no doubt what was said and by whom. The participants were asked whether they objected to the use of a recorder, but no objections were raised.
- The participants were informed that the information provided is confidential and their anonymity would be ensured.
- The participants were also informed that they may withdraw from the study at any time.
- The participants were requested to speak one at a time so that the researcher would be able to capture the thoughts and opinions of each participant in a clear and concise manner during the transcribing process.
- Each participant was given a pack which contained a pen, the sentence completion exercise, the vignette as well as the marketing material associated with the vignette

After concluding the pilot test, the data gathering instruments and procedures were evaluated. The pilot test indicated that the chosen instruments will address the objectives set out in the study. The participants also understood the questions posed to them in the group discussion. However, the researcher found that by giving the participants the marketing information at the beginning of the group discussion influenced the participants' thinking in the way that they were under the impression that the pea protein could only be used in a snack bar. The researcher, therefore, had to explain that there are various other

possible applications. Upon the conclusion of the pilot study, a decision was made that the marketing information will only be handed out just before the vignette exercise. Furthermore, initially the sentence completion exercise and vignette answer sheets did not state that the participants had to record three answers to every question. The answer sheet was, therefore, adjusted to state that the participants had to give three answers for every point and also to place them in order of preference from one to three. The reason why three answers were required was to encourage the participants to consider their answers carefully, but also to have a more complete and in-depth understanding of their meaning and preferences. The sequence in which the data gathering instruments were presented was not changed. No changes were made to the procedure and it seemed that the duration of the interviewing process would be approximately one hour to one and a half hours, which was acceptable.

4.8.2 Data Gathering of the Main Study

The focus group interviews were held during the months of February to May 2012 where a total of six group interviews were held and a total of twenty four women were interviewed. Four of the focus groups were held in Centurion, a suburb of Pretoria, at the different hostesses' homes, one focus group was held in Midrand and one in Alberton, both of which are suburbs of Johannesburg. The focus groups were held either in the evening or over a weekend when most of the participants were able to avail themselves. Each focus group interview lasted for approximately ninety minutes. During the focus group interview the researcher made the introduction and briefly explained what will happen during the process and informed the participants that a digital recorder will be used. The recordings of each focus group interview took place from the commencement until the conclusion of the discussions.

During the data gathering of the main study, a scribe was used at each focus group interview. The scribe took notes during the group interviews, recording the opinions and comments of the different participants. This allowed the researcher to focus on the questions and also to react to the participants' comments or questions, once again gaining a deeper understanding of their opinions or point of view. Therefore, the scribe was also introduced to the participants and explained that notes would be taken during the process to validate the information afterwards. The participants were given the opportunity to introduce themselves to each other. Thereafter, the participants were requested to complete a consent form (Appendix 3) as well as a "personal demographics" form (Appendix 4). This form was completed for statistical purpose and did not influence the

data of the study. Once these forms were completed, the interviews were initiated by the researcher, using the interview guide (Appendix 5) containing the previously tested questions on the research topic.

Upon the conclusion of the questions from the interview guide and after none of the participants had anything further to contribute, the participants were given the sentence completion form (Appendix 6). A brief explanation of the requirements was given. The participants were given the opportunity to complete the questions. There was no time limit and any discussions were discouraged at this point. Upon completion of the sentences, the participants were handed marketing information on the pea protein and a snack bar containing pea protein (Appendix 7). The participants were requested to complete the vignette exercise forms (Appendix 8). Once again, the participants could finish the forms in their own time, there were no time constraints. Upon completion, the forms were handed back to researcher. The researcher then thanked everybody for their participation and the interview was concluded. Refreshments were served by the hostess, but no other means of payment or compensation were offered.

The number of the focus group interviews was determined when saturation was reached at the conclusion of the sixth focus group interview. Although it is extremely difficult to pin point the exact moment when saturation was reached (Seidman, 2006), the focus groups were repeated several times, with different people until a point of saturation was reached and no new information came to light (Oppenheim, 1996; Krueger, 1994).

Upon conclusion of the focus group interviews and when a point of saturation was reached and no further interview groups were being held, the data was analysed. The data analysis process will be discussed in the next section.

4.9 Data Analysis

According to Robson (1989), transcriptions can vary from preparing a short impressionistic report to producing complete transcripts of the tapes and then proceeding to the analysis and interpretation. Robson (1989) suggests that whether or not the interviewer transcribes their own tapes, they should at least listen to them a couple of times while doing the analysis to allow the interviewer to form a couple of hypotheses. According to Seidman (2006) and Liamputtong (2011), once all the interviews are finished, the recordings need to be transcribed into written text. Liamputtong (2011) continues that

the transcriptions allow for further analysis and also provide a permanent record which other researchers could perhaps use. Liamputtong (2011), therefore, sees the transcribing of the interviews as the initial data analysis by suggesting that, although the transcribing process is a long and tiring one, it is better for either the researcher or the moderator to complete this task. They will become familiar with the data again which will help them during the further analysis of the data (Liamputtong, 2011). The importance of the various steps taken during the content analysis is described by different authors. Robson (1989) explains the significance of using a recording, whether tape or digital, as a tool to facilitate the interview process to keep the spontaneity and continuous flow of conversation going during the focus groups. The recording will allow the interviewer and if necessary other people, to analyze the data afterwards. The digital recordings of the focus group interviews of this study were transcribed verbatim and the transcriptions were analysed using content analysis as described by Liamputtong (2011), Seidman (2006) and Graneheim and Lundman (2004). Transcribing of the focus group interviews involved the typing of each of the six focus group interviews in the format that the interviews took place. In other words, first the questions asked to the participants then followed by each person's answer or response. The transcribing was done by the researcher.

Seidman (2006) furthermore states that the process of reading and making notes or labeling the transcripts has to be a step-by-step one. It was suggested that no preconceived idea of what the labels should be, should exist (Seidman, 2006). The researcher should rather read through the interviews and mark what was of interest and then see what the highlighted areas can be labeled as. Therefore, rather than the researcher deciding beforehand on the themes he was looking for he should allow the interviews to tell him what it was about (Seidman, 2006). Thematic analysis is also described by Liamputtong (2011) as "*a method for identifying, analysing and reporting patterns (themes) within the data*". Liamputtong (2011) breaks the process of thematic analysis down into two steps. The first is where the researcher has to read through each transcript and try to make sense of the data. The second step is when the researcher examines the transcripts and makes sense of what the participants in each group were saying. The main aim when reading across all the transcripts is to find repeated patterns of meaning. Liamputtong (2011) states that after these steps, the axial coding step, in order to deconstruct the data, needs to be performed. This step will allow the researchers to connect the different codes they have already identified. Axial coding was "*a way of organising the data together by making connections between a major category and its sub-category*". According to Liamputtong (2011), this will then allow the researcher to find the themes in the data.

The next step was the data analysis process where the transcriptions were analysed line by line in order to identify possible codes (Goulding, 2000). Furthermore, Goulding (2000) states that the text from the transcripts should be shortened and a term, condensation, is used which describes the process of shortening the sentence while still preserving the core concept creating categories and sub-categories and finally identifying the themes that emerged from the analysis for the categories and sub-categories. The data analysis process is further described by Harris *et al.* (2009) as organising, classifying and summarizing the qualitative data. A comprehensive description of the situation and participants is analysed to discover the patterns and themes and then attempting to understand the meaning of the various themes from the participants (Harris *et al.*, 2009). Seidman (2006), furthermore, describes the process of analysing thematic connections. Seidman (2006) mentions that one of the ways of presenting and analysing interview data was to organise the excerpts from the transcripts into categories. The researcher then has to search for relating threads and patterns within the categories, and for links between the different categories that might be called themes.

During the data analysis process there are various concepts that are referred to by different authors (Seidman, 2006; Graneheim & Lundman, 2004; Harris *et al.*, 2009). Graneheim and Lundman (2004) give a description of these concepts, stating that “*a meaning unit is the constellation of words or statements that relate to the same central meaning*”. Graneheim and Lundman (2004) consider a meaning unit as words, sentences or paragraphs comprising of different topics but related to each other through their content and context. Graneheim and Lundman (2004) continue that the next step in the data analysis process is creating categories which are the core feature of qualitative content analysis. Additionally a category is described as a group of data that shares a common concept (Graneheim & Lundman, 2004). After creating a category, the category is often divided into a number of sub-categories. Once this is done, a number of themes, consisting of the categories and sub-categories can be identified, which links the underlying meanings in the various categories.

The collected data were analysed using open coding, which is described by Goulding (2000) as the process of breaking down the data into separate units of meaning. This analysis was followed until a recurring pattern was noted across data sets (Spiggle, 1994). Once the pattern was identified, the open coding stopped and the focus was shifted to a more focused axial coding (Law *et al.*, 2012). Axial coding is described by Goulding (2000) as the grouping or clustering together of codes on the basis of their explanatory relationship to each other, which are then labelled to generate concepts, which in turn are

grouped together to form descriptive categories. In order to ensure the appropriateness of coding, another researcher not involved in the collection of the data was asked to code the raw transcripts to identify themes (Law *et al.*, 2012) and these were discussed until a mutual consent was obtained.

The data from the focus group interviews, the sentence completion exercise and the vignette were methodically analyzed to identify recurrent patterns and themes from the sentences and paragraphs according to the objectives of the research to understand the influence that external product attributes have on consumers' perceived acceptance of pea protein as a protein substitute food product. Sub categories were identified and then further groups were placed together under categories; meaning units were grouped into categories and sub-categories. Once the quotes from the participants were grouped together, an expert on categories and sub-categories was consulted and the analysis was discussed until consensus was reached as to the relevant categories and sub-categories that best represented the data.

Robson (1989) takes it a step further and states that data analysis and data interpretations are two concepts, between which many qualitative researchers do not differentiate. They describe the two concepts as follows: "*analysis was the sorting of information / what people said, and interpretation was the meaning or understanding behind what was said*". According to Robson (1989), for the researcher the distinction between analysis and interpretation can be experienced as a difference in reaction within the process – analysis being a meticulous sorting of information, by whichever method the researcher uses and interpretation as being the '*Eureka*' moment when suddenly the researcher gains insight into what was actually said in the data gathered. Robson (1989) stresses the importance of the care that was taken during the analysis process and that careful planning goes into the research process, the interview, the discussions etc. and it will all be a waste if the same care was not taken during the analysis process (Robson, 1989). A recommendation is, furthermore, made that the yield of the information is increased when the data was carefully analysed rather than the researcher depending on memory or notes and it also prevents a superficial interpretation because the researcher has to dwell on the data, think about it and interpret it (Robson, 1989).

In addition to the analysis of the data gathered from the focus group interviews, sentence completion and vignette exercises, the information from the personal demographics was also recorded. As mentioned in paragraph 4.8.2, this information was not used as part of the study, but it is interesting to take note of the diversity of the participants. In total there were twenty four participants, of whom all were female, as prescribed by the sampling strategy. The ages of the participants ranged between sixteen and over forty-six. There was one participant in the age group 16-25, seven in the age group 26-35, five in the age group of 36-45 and eleven in the 46+ age group. Of these participants, three ladies were black, one Indian and twenty white. Additionally, the monthly household income also ranged from between R5000 per month to over R20 000 per month, with most participants having a monthly household income of over R20 000 per month. Furthermore, the educational level of the participants indicated that they are all well-educated. Five of the participants had a highest education level of Grade 12, ten had a University of Technology diploma/degree, three participants had a University degree B, honours, masters or doctorate and six participants had other post matric qualification certificated courses, short course certificates or programmes.

The data interpretation process will be discussed in more detail in the next section.

4.10 Data Interpretation

Interpreting of the material has to be done during the process and not only at the end (Seidman, 2006). According to Seidman (2006), a researcher should start with this process even during the interviews where interpretations might start to pave the way for the questions asked. During the process of marking the passages of interest, labeling them and grouping them, interpretations are made (Seidman, 2006). Although it might be tempting for the researcher to allow the categorized thematic excerpts to speak for themselves, Seidman (2006) suggests that another step should be taken. This step is where the researchers have to ask themselves various questions, for instance what they have learned from the interviews, studying the transcripts, marking and labeling them and organising categories of excerpts (Seidman, 2006). Further questions that have to be asked are, what do they understand now that they did not understand before? Was there a common subject from all the different interviews? Was there any unexpected information that came to light? Were there any confirmations of their instincts? The last and most important question is, what meaning the researcher made of their work and what this experience meant to them (Seidman, 2006; Flick, 2002). Once the researcher found answers to these questions, they should be able to find the themes (Seidman, 2006; Flick,

2002). The researcher should write about these questions, but also take the different thematic excerpts and write a memorandum about these passages, including how the excerpts were picked, what they meant to the researcher, what was important in these passages and how they were relevant to the other passages (Seidman, 2006).

Robson (1989) continues that the findings of a qualitative research should be repeatable by further qualitative research. A thorough and interpretative approach of qualitative data will lead to reliable conclusions with internal consistency which will aid in the decision-making whether relating to product, marketing or advertising objectives (Robson, 1989). Even during the process of data interpretation it is of the utmost importance to validate the data to establish trustworthiness.

4.11 Trustworthiness

Research findings should be as trustworthy as possible and concepts such as credibility, dependability and transferability are used to describe the various aspects of trustworthiness of qualitative research (Graneheim & Lundman, 2004). Moreover, the concepts of validity and reliability are referred to by various research studies conducted by Harris *et al.* (2009) and Golafshani (2003) and are also used to describe the various aspects of trustworthiness of qualitative research.

According to Graneheim and Lundman (2004), the credibility of the research is improved when choosing participants with various experiences who can give insight into the research from a variety of aspects. Selecting the most appropriate method of data collection and the amount of data collected for analysis will also add to the increased credibility. To address the credibility and reliability of the research to explore the influence that external product attributes have on consumers' perceived acceptance of pea protein as a protein substitute in food products, a snowball sampling technique was utilised to improve the variety of people, although they had to adhere to the unit of analysis. Snowball sampling is described as a process where participants identify others with direct knowledge relevant to the research being conducted (Fossey *et al.*, 2002), however, it was unknown exactly who will partake in the actual data gathering process, increasing the credibility of the study.

By selecting a combination of data gathering processes, the credibility and reliability were also improved. Therefore, focus groups were held until saturation was reached and,

therefore, the maximum amount of data was collected before analysis. Additionally, during these focus group interviews the sentence completion exercise and vignette were also employed to gather data.

Graneheim and Lundman (2004) continue that one way to show the differences and similarities between categories and sub-categories is by showing the representative quotations from the transcribed text and also to obtain consensus between researchers. Consequently, to improve further the credibility and reliability, all the participants' quotations, divided into themes, categories and sub-categories are displayed and discussed in the findings and discussions chapter of this research (Goulding, 2000). Furthermore, the themes, categories and sub-categories were discussed with the supervisor until a consensus was reached. Additionally, authors like Harris *et al.* (2009) and Golafshani (2003) refer to concepts like validity and reliability. Harris *et al.* (2009) reiterates that one way to ensure the reliability of the study is to use more than one person to analyze the data, which is similar to the concept of credibility mentioned by Graneheim and Lundman (2004). Moreover, the concept of validity, which is discussed by Harris *et al.* (2009) and Golafshani (2003) is similar to transferability which was mentioned by Graneheim and Lundman (2004).

The second aspect discussed by Graneheim and Lundman (2004) is dependability which describes the degree to which the data change over time and alterations are made in the researcher's decision during the analysis process. In order to address the concept of dependability, a pilot test interview was held to test all the various data gathering instruments. The consensus of the pilot test interview was that the data gathering instruments were the correct methods and that the objectives should be reached. The same method for data gathering was used during the main data gathering process and no new information was added after the interviews. The researcher did not add any further information, but used the initial data which was transcribed verbatim, analysed and interpreted.

The last concept that Graneheim and Lundman (2004) discussed was transferability which refers to the extent to which the findings of the research can be transferred to other settings or groups. This is done by giving a clear and distinct description of the study location, unit of analysis and inclusion criteria, sampling strategy, data collection process and instruments and the data analysis process. Harris *et al.* (2009) further mention that a clear and detailed explanation of the methodology used during the research will promote

the validity. This detailed explanation should include the details of the research strategy, sampling method, data sources, data collection methods and data analysis in order to assist another researcher or investigator to repeat the study. According to Graneheim and Lundman (2004), the transferability will be enhanced if a precise and dynamic presentation of the findings, together with the appropriate quotations is given. Subsequently to address transferability, a detailed description of the study location, unit of analysis and inclusion criteria, sampling strategy, data collection process and instruments and the data analysis process are given in this research report.

The last concept that was mentioned by Graneheim and Lundman (2004) is triangulation and in order to address this concern, a combination of data collection methods was used. This combination included focus group interviews, where a scribe was present taking notes, sentence completion exercise and vignettes were used to enhance the trustworthiness and also to validate the findings of the data collected. Triangulation was discussed in detail in section 4.7.

As mentioned in Chapter 1, another strategy implemented to manage the threat to the trustworthiness of the research project was to do member checking. Member checking, also known as respondent validation (Lietz *et al.*, 2006) is described by Lietz *et al.* (2006) and Curtin and Fossey (2007) as the process where the findings from the research project are shared with the participants in order to allow them to review the findings from the data analysis. Lietz *et al.* (2006) continue that member checking is used to manage the threat of bias, by giving the authority to the participants' perspectives, thus establishing trustworthiness. Furthermore, by sharing the findings from the data analysis with the participants, gave them the opportunity to either confirm or challenge the accuracy of the work and also to identify areas which may have been missed or misinterpreted (Lietz *et al.*, 2006; Curtin & Fossey, 2007). Additionally it provides the participants an opportunity to read, comment on and contribute to the findings (Curtin & Fossey, 2007). Member checking in this project involved sending the findings and discussions via email to the participants and asking them to evaluate the findings of the data analysis. The participants were requested to express their opinion on whether the findings expressed their personal attitude and their overall impression of the subject matter. They were further requested to confirm or challenge the accuracy of the findings and to identify areas, if any, which may have been missed or misinterpreted. All participants responded stating that they agreed with the findings and discussions as presented by the researcher and that the findings were congruent with their experience. The participants, furthermore, agreed that the findings were representative of their experience regarding the subject under discussion.

In addition to all the steps taken to improve the trustworthiness of the research, and the ethical aspect were also taken into consideration.

4.12 Ethics

The proposal for doing an exploratory study of the influence that external product attributes have on consumers' perceived acceptance of pea protein as a protein substitute in food products, was submitted to the Ethics Committee of the College of Agriculture and Environmental Sciences at the University of South Africa. Approval was received, in the form of a letter, to continue with the research. See Appendix 1 for a copy of the approval letter.

Furthermore, during the introduction of all the focus group interviews, the researcher once again explained carefully to the participants what the purpose of the study is and what was expected of them. The researcher gave the participants the assurance that their participation is completely voluntary and that they could cease their participation at any time. Moreover the participants were informed that their anonymity was ensured as no names would be linked to the data. All the participants signed a consent form (Appendix 3) indicating they understood the purpose and conditions set out in the study and that their information and opinions could be used in this research.

Regarding compensation, Liamputtong (2011) mentions that participants in focus groups in marketing research are paid for their time and participation, however, in the health and social research, compensation for participation is a contentious issue. Liamputtong (2011) states that some researchers argue that it is not appropriate to offer payment in research as this might influence the participants, especially during research where the participants might be poor; they may be vulnerable to coercion. Therefore, for this study the participants were recruited purely based on an invitation with no promise of an incentive. The hostesses offered refreshments after the conclusion of the focus group interviews, but no other compensation was offered, which possibly could have influenced the participants' opinions in any way.

4.13 Summary

This chapter discussed in detail the qualitative and exploratory research used to explore the influence that external product attributes have on consumers' perceived acceptance of pea protein as a protein substitute in food products. A closer look was taken at what a qualitative and exploratory research design entails in order to explore the influence of perceived price, perceived marketing of the product, perceived packaging attributes of new food products, perceived branding importance of a product and new product education and knowledge perceived necessary for acceptability of a new food product containing pea protein.

The unit of analysis and inclusion criteria, the sampling strategy, including the study location and the data collection process were discussed. The data gathering instruments used during the data collection process were also examined and these included the focus group interviews, the sentence completion exercise and the vignette. A detailed description of the pilot test interview and the main study data collection procedure was given. A closer look was taken at the data analysis process and the interpretation of the data. Lastly triangulation and the different concepts of trustworthiness were mentioned and how this research adheres to the requirements, as well as complying with the ethical requirements of the Ethical Committee of the University of South Africa.

The findings obtained in accordance with the objectives set out in the study, with the inclusion of figures and tables to assist with the interpretation of the findings from the research, are discussed in the next chapter and the findings from the data are presented in the next chapter.

CHAPTER 5: FINDINGS AND DISCUSSIONS

This chapter presents the findings in accordance with the objectives set out in the study with inclusion of figures and tables to assist with the interpretation of the findings.

5.1 Introduction

Chapter 4 presented the research design and methodology used to address the aim of the study which was to explore the influence that external product attributes have on consumers' perceived acceptance of pea protein as a protein substitute in food products. A qualitative and exploratory research design was adopted as this approach allowed the researcher to investigate and explore the participant's opinions and attitudes towards the acceptability of food products containing pea protein. Qualitative data collection methods were used that included focus group interviews, a sentence completion and vignette exercises. In this chapter the data which were collected using the various qualitative data collection methods are presented. The findings are structured and presented in accordance with the order in which the objectives were formulated for the study.

The primary aim of the study was to understand the influence that external product attributes have on consumer's perceived acceptance of pea protein as a protein substitute in food products. Therefore, in order to form an understanding of the consumers' attitudes towards pea protein, firstly an understanding had to be generated regarding the consumers' attitudes towards new food products in general. Consequently similar questions were asked during the focus group interviews for both objective one and two, as presented in paragraph 1.6, in order to determine the differences and similarities in the acceptable external product attributes of products in general and products containing pea protein.

The qualitative data obtained from the various data collection methods were coded to identify categories and sub-categories which addressed a specific study objective. As each objective is discussed, an initial overview of the findings is presented, using a diagram to illustrate each category, followed by important sub-categories that emerged from the findings of the data. Thereafter, in order to increase the understanding of the findings, the researcher discusses and interprets the categories and sub-categories independently. Each of the sub-category discussions is supported by verbatim quotations from the participants, presented in a table format, in order to validate the study findings.

The subsequent categories that emerged from the data analysis are presented as subheadings in the following sections.

The chapter concludes by incorporating the findings of the different data collection methods which in combination complement one another to provide a more in-depth understanding of the research questions, aims and objectives set out for the study.

5.2 Exploring and interpreting the Qualitative Data

5.2.1 Background of the sample

The 24 respondents that participated in the six focus group interviews were selected purposively and in accordance with the inclusion criteria set for this study. This was that they were female shoppers who were the main grocery and food shoppers in the household, living in suburban areas. They were required to make the decisions about the menus and what will be prepared for the household. Specific age groups and cultural diversity were not considered for this study as it was exploratory in nature and general consumer opinions were important.

5.3 Qualitative findings regarding new food products in general

The study aimed to explore the influence that external product attributes have on consumers' perceived acceptance of pea protein as a protein substitute in food products. In order to address objective one of the study, the first part of the focus group interviews was utilised to explore each of the extrinsic product attributes, specifically related to new food products in general, in terms of the a) influence of perceived price, b) perceived marketing of the product, c) perceived packaging attributes of new food products, d) perceived branding importance of a product and e) new product education and knowledge perceived necessary for acceptability of a new food product.

5.3.1 Findings of the participants' general attitude towards new food products

The first question that was asked during the focus group interview was: “**What is your general attitude towards new food products on the shelf?**” The qualitative findings suggest that there are four consumer product approaches consumers apply when confronted with a new food product. These product approaches can be considered to be a classification of different types of consumer behaviour consumers' exhibit towards a new food product. The product approaches emerged as categories which included product comfortable consumer behaviour, person and marketing centered behavioural influences and decision criteria behaviour. The categories were further defined and sub-categories emerged from the data. Each category, containing the sub-categories will be discussed in detail. An overview of the various categories and sub-categories is presented in Figure 5.1.

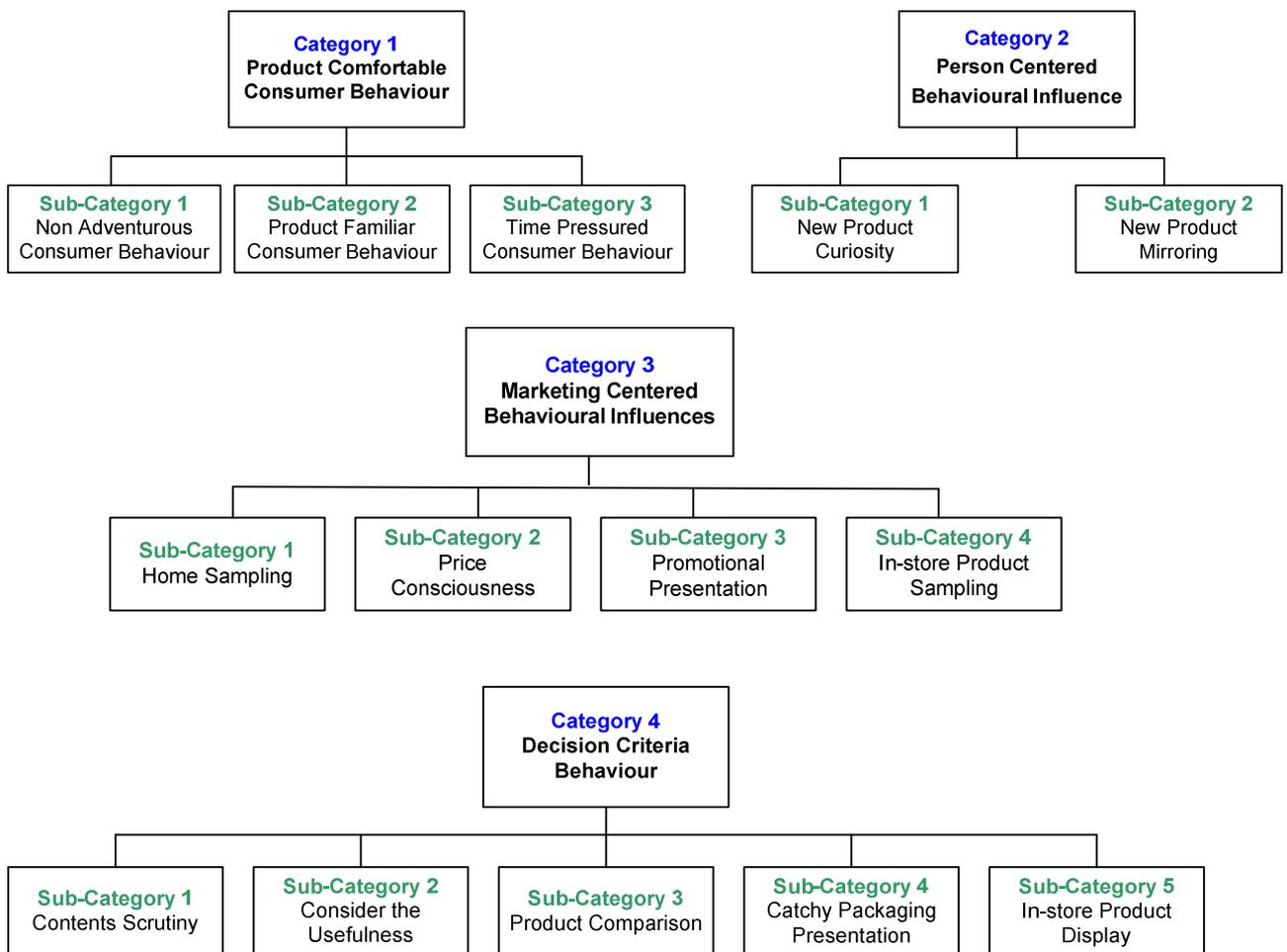


Figure 5.1 An overview of the various categories emerging from the participants' general attitude towards new products.

Category 1: Product Comfortable Consumer Behaviour as presented in Figure 5.2.

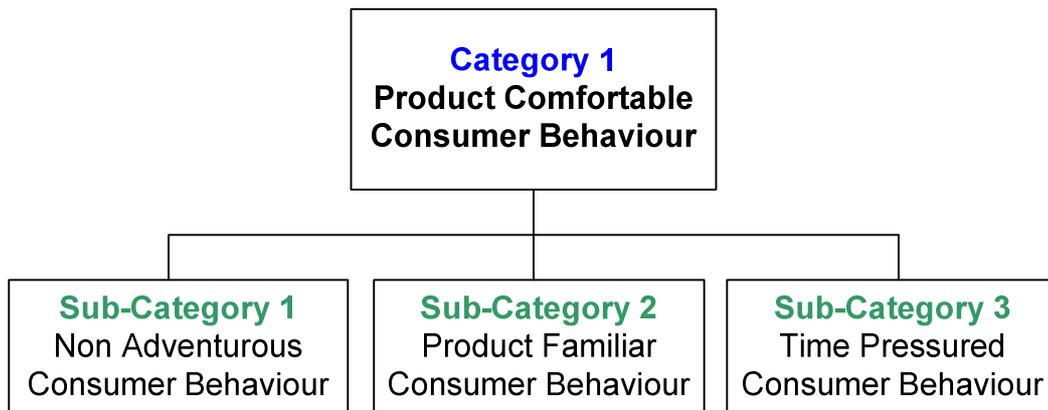


Figure 5.2 Product comfortable consumer behaviour regarding new product approaches

Figure 5.2 indicates that the product comfortable consumer groups are characteristic of three different sub-categories of consumers showing three different types of behaviour and who are, therefore, product comfortable because they are non-adventurous or influenced by product familiarity or time pressured. As indicated in Table 5.1, the non-adventurous consumer is comfortable with their current product and is *“too scared to try something new”* as one participant stated. They would also rather avoid trying new products, *“I very seldom look at new products”* and *“I would not just buy the product and go and try it out”*. The product familiar consumer does not want to try new products because they are satisfied with the products they know and are comfortable with them, as indicated by the quotes from Table 5.1 which are evident in some of the quotes by these participants, *“I’m fixed on my usual products”* and *“I’m looking for things in particular”*. They do not browse the shelves looking for new products, *“You are so used to the old products”*. The last section of Table 5.1 indicates that the purchasing decisions of the time pressured consumers are influenced by the limited amount of time they have available. They, therefore, look for products that are familiar. They have a shopping list and are only looking for the products on this list as this quote indicates, *“I just have my list and quickly buy it”*. They do not have time to browse, *“Grocery shopping is normally rush, rush, do not browse”* and look around. These consumers also mentioned that they are focused *“I’m focused, usually I have a list and those are the things I’m looking for”* and on a mission *“We’re focused, I’m on a mission”*.

In studies done by Rowley (2005) and Jensen (2011) they refer to the advantages, from the manufacturers’ point of view, to have loyal consumers or product comfortable customers. They list the benefits as consumers being less price sensitive, more resistant

to competitor products, therefore, the manufacturer has to spend less to attract new customers and they are more likely to make word of mouth recommendation to others. Mattson and Dubinsky (1987) conducted a study on how certain situational determinants influence consumer's shopping patterns. They came to the conclusion that consumers pressured for time will place a bigger emphasis on important products and will spend more effort on convenience and less on shopping efforts; which they describe as going from shop to shop looking for a product. Mattson and Dubinsky (1987) continue to state that consumers who are feeling pressured for time may exhibit different shopping behaviour than those consumers who are not pressured for time. Laroche, Saad, Browne, Cleveland and Kim (2000) found that most consumers prefer to have someone they know to shop with them, however, should such a person not be available, the importance of an in-store sales clerk increases. The consumer will request help and opinions from this person. During this study Laroche *et al.* (2000), furthermore, found that in general, as the time pressure increases, the search for information decreases. In such cases, information from the sales clerk and the wide product selection is highly valued. Silayoi and Speece (2004), furthermore, mention that modern consumers are often looking for ways to reduce time spent shopping for food and preparing food. Therefore, the more time pressured the consumer is, the less they look at the packaging in detail, which in turn influences the decision making process (Silayoi & Speece, 2004).

Table 5.1 - Product Comfortable Consumer Behaviour

Sub-Category			Quote	
Non Adventurous Behaviour	Consumer	1	"Too scared to try something new"	
		2	"I try to stay away"	
		3	"I very seldom look at new products"	
		4	"I do not really look at new products"	
		5	"I would not just buy the product and go and try it out"	
		6	"Firstly, I think strange, I mean are you going to like the product or not?"	
		7	"You would investigate as well to see if you can find out anything about it; I would not just buy it"	

Sub-Category			Quote	
Product Behaviour	Familiar	Consumer	1	“I'm fixed on my usual products”
			2	“It is something that is food, something that I eat”
			3	“I'm looking for things in particular”
			4	“If you buy this type of product, you will keep on buying that”
			5	“If it's something in the line of what we normally eat”
			6	“If it's the kind of products that we use”
			7	“You are so used to the old products”
			8	“If you have your favourite brands, you will not normally switch to something new”
			9	“Unless it's a new line, within the brand that I'm using”
Sub-Category			Quote	
Time Behaviour	Pressured	Consumer	1	“Unless I'm rushed for time”
			2	“At month end, everybody is at the shops so you try to get in and out as quickly as possible”
			3	“Try to avoid shops at month end”
			4	“If it's month end, then in and out”
			5	“Grocery shopping is normally rush, rush, do not browse”
			6	“Usually I do not have time”
			7	“I'm focused, usually I have a list and those are the things I'm looking for”
			8	“We're focused, I'm on a mission”
			9	“I just have my list and quickly buy it”

Category 2 – Person Centered Behavioural Influence as presented by Figure 5.3.

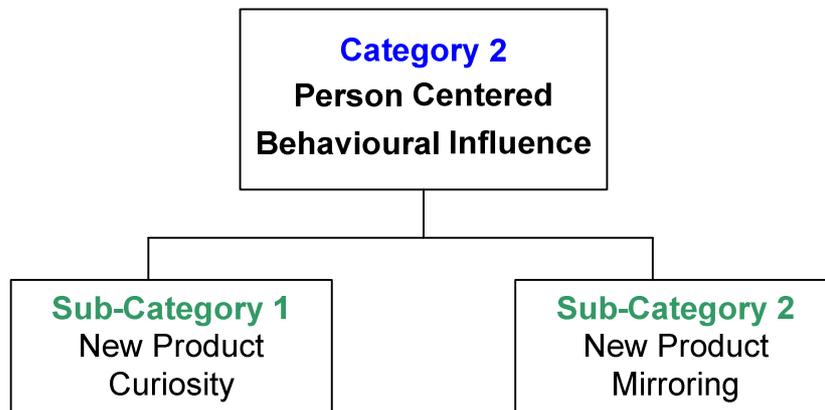


Figure 5.3 Person Centered Behavioural Influence regarding new product approaches

Person centered behavioural influences emerged and provided insight into the stimuli prompting consumers to consider new products (see Figure 5.3). There seems to be an internal influence where consumers show new product curiosity as indicated by these quotes stated in Table 5.2, “I like to look at new stuff and trying it out” and also “I like looking at new products too”. Because of curiosity, some of the participants showed a

willingness to buy the product and try it at home, *“Just try it to see whether you like it or not. I will buy it and try it”*. An external influence exists where new product mirroring is followed. The participants will, therefore, phone someone, as indicated in Table 5.2, *“I will phone someone and ask whether they’ve tried it”* or if their friends have tried it, so might they, *“Your friends try something new”*. The influence of children was also mentioned, where the participants will try something new, if they think their children might enjoy it, *“Something that your children might enjoy; they try out the test products and notice different things”*.

Consumer innovativeness or the willingness to change is viewed as an important market segment for manufacturers, especially when launching new and innovative products. Because these consumers are willing to try new products, marketers also need to understand their decision making process (Park, Yu & Zhou, 2010). One of the influencing factors on these consumers’ decision making is other people’s opinions. They would follow a recommendation from people they have a high regard for. Arora and Allenby (1999) conducted a study where they measured the influence an individual has on the decisions made by a group. The authors believe that decisions or preferences of the more influential individuals in the group will have a profound influence on the whole group. It is, therefore, important to understand how various groups operate as this will influence the method in which information about a product attribute, advertising, pricing decision etc. messages are conveyed to the individual and, therefore, the whole group. Not only will friends within a group influence each other’s decisions, but the presence of young ones in a family often also influence the family’s buying decisions (Hafstrom, Chae & Chung, 1992).

Table 5.2 - Person Centered Behavioural Influence

Sub-Category	Quote
New Product Curiosity	1 “But I will try it”
	2 “I always try to look at new things”
	3 “I like to check out the new things”
	4 “If it’s not month end, I would probably browse and taste and whatever”
	5 “I will have a look at it”
	6 “I like to look at new stuff and trying it out”
	7 “I like looking at new products too”
	8 “Just try it to see whether you like it or not. I will buy it and try it”

Sub-Category	Quote
New Product Mirroring	1 “Something that your children might enjoy; they try out the test products and notice different things”
	2 “I will phone someone and ask whether they've tried it”
	3 “Your friends try something new”
	4 “It does not matter for the packaging or price; the kids must love it”

Category 3 – Marketing Centered Behavioural Influences as presented by Figure 5.4.

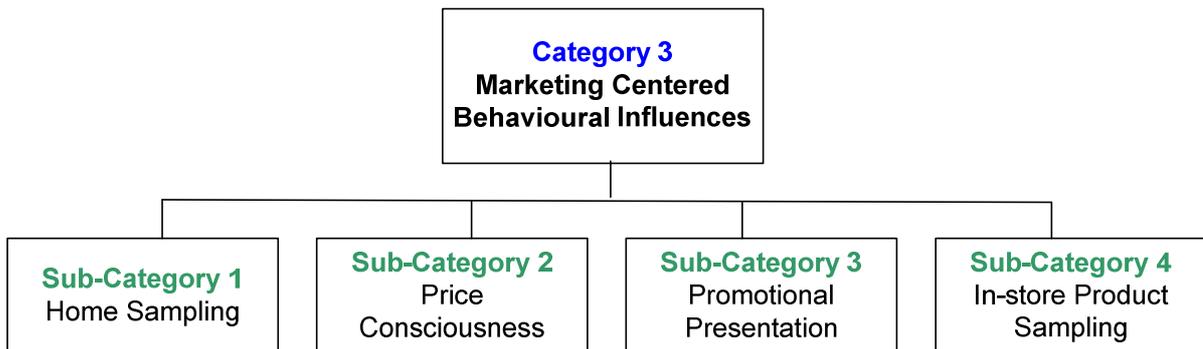


Figure 5.4 Marketing Centered Behavioural Influences regarding new product approaches

Figure 5.4 clearly indicates that there are a couple of marketing centered behavioural influences that emerged indicating how consumers approach new products. Some of the participants were of the opinion that they would try a new product, as indicated in Table 5.3, but in the comfort of their own home, *“I would rather buy a packet and try it out at home and then decide”* and *“Do not like tasting it in shop, I feel I'm being put on the spot in the shop”*. Price consciousness is one particular influence which suggests the consumer is more interested in aspects such as the price of a product. As indicated in Table 5.3, the participants attributed specific value to the product and felt that the product had to be value for money, *“Is it value for money”*. They are also looking to save money when considering the new product, as these participants mentioned, *“Price and if there's a huge saving”* and *“Unless it's a tremendous offer”*. The price is also important because they would like to spend as little money as possible, *“Maybe price; try to spend as little money as possible”*. Although the price might be a purchasing influence, the participants felt they need to be made aware of a new product; otherwise they might not even notice it and, therefore, will not try it. When they are shopping, they are looking for advertising signs, as shown in Table 5.3, *“Normally they have these advertising signs”* or little banners indicating a new product, *“If they have something like a little banner or a thing sticking out of the shelf that says it's new”*. In addition, if there is a display in the shop, *“Usually when*

they have a display, I will notice them”, or maybe a presentation, “The presentation would obviously make me stop” that would make them stop and notice the new product. Once the participant noticed the product through the promotional presentation and the price is acceptable to them, they would like to sample or taste the product. Some participants quite enjoyed in-store sampling, as this gave them the opportunity to taste the product before they purchase it, as indicated in Table 5.3, “Like a testing station, I do not just buy something just to buy it”. They felt that it was also easier to taste the product when there is somebody presenting it, “Definitely if there is somebody there, presenting you with a sample or a taster” and if there are “Those little booths for new products where they have you taste it”. Leigh and Gabel (1993) refer to the marketing mix which includes the product, promotion, price and distribution and how important it is for the strategies of all these variables to be managed successfully and also be consistent; there has to be a coordination in the product symbolism.

Table 5.3 - Marketing Centered Behavioural Influences

Sub-Category	Quote
Home Sampling	1 “I would rather buy a packet and try it out at home and then decide”
	2 “Or take this sample home”
	3 “Do not like tasting it in shop, I feel I'm being put on the spot in the shop”
	4 “Cannot stop to check what she is busy cooking in the pan”
Sub-Category	Quote
Price Consciousness	1 “Price and if there's a huge saving”
	2 “Is it value for money”
	3 “Maybe price; try to spend as little money as possible”
	4 “The price”
	5 “Unless it's a tremendous offer”
Sub-Category	Quote
Promotional Presentation	1 “Normally they have these advertising signs
	2 “If they have something like a little banner or a thing sticking out of the shelf that says it's new”
	3 “Would also like an advertising banner; I would probably notice it much more than when they are not advertised”
	4 “The presentation would obviously make me stop”
	5 “It must look interesting”
	6 “Usually when they have a display, I will notice them”
	7 “If they display the product, then you can have a look at it”

Sub-Category	Quote
In-store Product Sampling	1 “Those little booths for new products where they have you taste it”
	2 “And the tasting; to have it there where you can taste it”
	3 “Or somebody is standing there demonstrating it”
	4 “If there is not somebody that introduces it to you; I most probably will not even notice it”
	5 “Definitely if there is somebody there, presenting you with a sample or a taster”
	6 “Like a testing station, I do not just buy something just to buy it”

Category 4 – Decision Criteria Behaviour as presented by Figure 5.5.

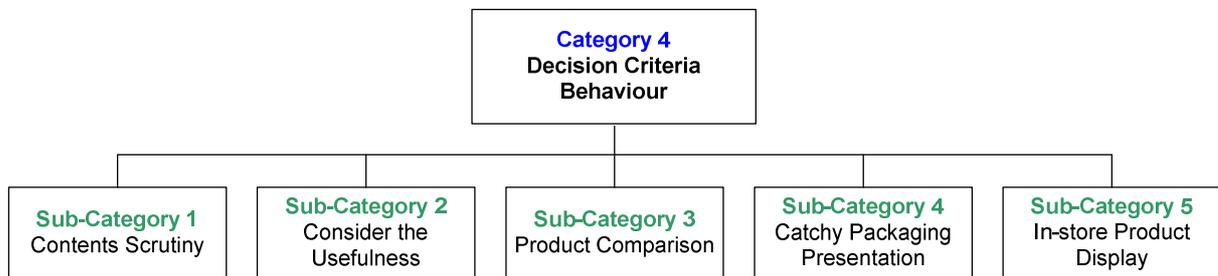


Figure 5.5 Decision Criteria Behaviour regarding general new product approaches

It seems as if there are certain decision actions or behaviours that the consumer goes through when confronted with a new product (see Figure 5.5). These are to scrutinize the product, but also to consider the usefulness of the product and to do a product comparison. Furthermore, there seems to be attention catching approaches that would make the consumer aware of a new product. That is if the manufacturer has provided a catchy packaging for the product and the store does an in-store display of the product. As indicated in Table 5.4, the contents of the product come under scrutiny because “*You will pick it up and have a look to see what is there*” and also “*Look at the ingredients or concentration of certain components*”. The consumer will also consider the usefulness of the product, as per Table 5.4, “*Is it something I would use?*”, before the decision is made to purchase the product. Another criterion the consumer will consider is the product comparison. As indicated in Table 5.4, product comparison is mainly done to determine whether the purchasing decision will be worthwhile and even an improvement, “*See whether it's better than what I normally buy*” and “*What's different to it, compared to everything else; that's what will attract me*”. Of course, before any decision can be made, the product has to attract the consumer’s attention. Whether this is done by marketing as discussed earlier, or by a catchy packaging presentation, according to participants

quotations in Table 5.4, the consumer has to notice the product first, *“It’s the first thing that I would look at; it must grab your attention”* and *“But the packaging. You will look at the packaging and realise that this is new”*. The last criterion that emerged, as shown in Table 5.4, is in-store product display where the participants mentioned that they will notice a new product, *“Where they’ve got the single products displayed; not something on the shelf”* and *“I will notice something if it’s at a spot where you easily will look at it. In the shelves you will walk by”*.

Understanding the purchasing decision process, of which approximately 70% is made in store, of both existing and potential customers is essential in designing an effective marketing programme (Vermeir & Van Kenhove, 2005). According Vermeir and Van Kenhove (2005), manufacturers use price and promotional efforts, besides product characteristics as instruments to influence the increase in sales. Apparently the price and sales promotions have the most significant influence on the consumers’ decision making process. In another study, Silayoi and Speece (2004) mention that as the packaging becomes the primary vehicle for communication and branding, the design has become increasingly important. Silayoi and Speece (2004) state that packaging seems to be one of the most important factors that influence consumers’ decision making at the point of sale.

Table 5.4 - Decision Criteria Behaviour

Sub-Category	Quote
Contents Scrutiny	1 “I will obviously look at what it is and what’s in it”
	2 “Look at the ingredients or concentration of certain components”
	3 “I do not look at ingredients, except for salt and the fat content”
	4 “You will pick it up and have a look to see what is there”
	5 “I will look at the ingredients first to see what is in it”
Sub-Category	Quote
Consider the Usefulness	1 “Is it something I would use?”
	2 “What use is it to me?”
Sub-Category	Quote
Product Comparison	1 “Will it be an improvement of what you know and what you use?”
	2 “See whether it’s better than what I normally buy”
	3 “What’s different to it, compared to everything else; that’s what will attract me”

Sub-Category	Quote
Catchy Packaging Presentation	1 “Something that looks interesting”
	2 “It’s the first thing that I would look at; it must grab your attention”
	3 “The packaging”
	4 “It has to look good”
	5 “But the packaging. You will look at the packaging and realise that this is new”
	6 “I would say the colour; if it is attractive”
	7 “If the packaging is different”
Sub-Category	Quote
In-store Product Display	1 “It must be in a prominent place”
	2 “Where they've got the single products displayed; not something on the shelf”
	3 “I will notice something if it's at a spot where you easily will look at it. In the shelves you will walk by”
	4 “If it's at a place I walk by, I would not have noticed it”

The first part of the focus group interview was intended to explore the consumer’s acceptability of new food products in general. The product approaches that emerged as categories included product comfortable consumer behaviour, person and marketing centered behavioural influences and decision criteria behaviour. The participants’ responses to the first question regarding their general attitude towards new food products on the shelf included their willingness to try a new product or their reluctance to try a new product, where they would rather purchase a product they are familiar with. The various influences upon the participants’ decision making process were mentioned, including person and marketing influences. Lastly the decision criteria behaviour was discussed and the different aspects that will influence the decision, such as the in-store display of the product and the eye-catching packaging design was mentioned.

Although the participants mentioned the various individual attributes, including the price and value for money, packaging design, marketing, importance of branding of a product and the new product education and knowledge, during the initial part of the focus group interview and in response to question one, the attributes, as outlined in the objectives of this study will be explored separately and in detail. The following sections are, therefore, more focused on the specific individual extrinsic attributes of a product and more in-depth responses were received.

5.3.2 Findings of the participant's general attitude towards new food products in terms of the perceived price

The second question that was asked in terms of the acceptability of new food products, specifically regarding the perceived price of the product was stated as follows: ***“What will make a new food product acceptable to you, in terms of the price of the product?”***

The main category that emerged was enhanced product features. The enhanced product features, furthermore, included perceived added value, beneficial product attributes, price right quality measure and cheaper trusted option measure, as presented in Figure 5.6.

Category 1 – Enhanced Product Features as presented by Figure 5.6.

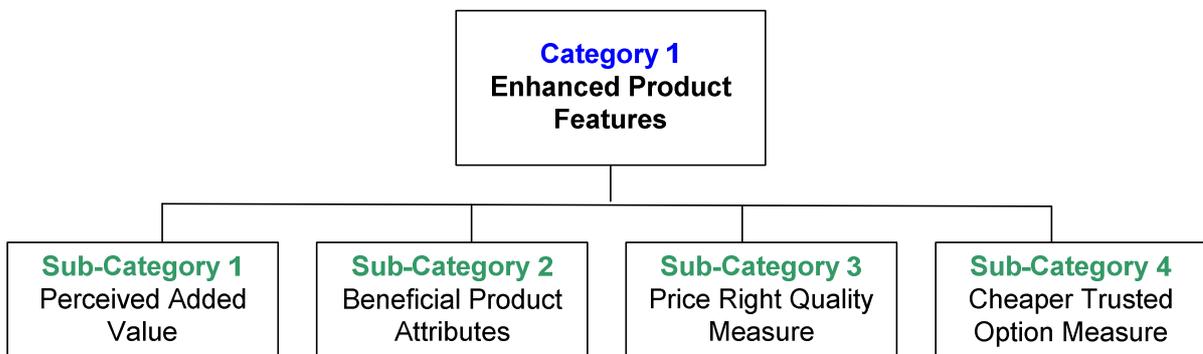


Figure 5.6 Enhanced product features regarding the price of the general new product

Figure 5.6 indicates that a new product's acceptability in general is particular of one category that describes what criteria consumers would use to judge the new product. According to Table 5.5, if the product is perceived to have enhanced product features that are particular to a perceived added value, as suggested by this quote *“If it has more benefits or more features and its slightly more expensive, you sort of weigh it out”*. As indicated in Table 5.5, the new product might be found acceptable to the consumer should the product have beneficial attributes as indicated by this participant, *“In respect to a rand or two rand difference, yes, I would be willing to pay more if the nutritional value is higher; specifically orientated with kids”*. On the other hand, the price check comparison, as shown in Table 5.5, is also done by the consumer to determine whether the product is price right which is also a quality check for the consumer as indicated by these quotes, *“If I'm interested enough, I'll buy it, regardless of price”* and *“I might buy something that is more expensive, it depends”*.

The consumer also uses a cheaper trusted option measure to determine if the new product falls into the same category as the products they associate with the cheaper trusted option they know, as indicated by Table 5.5 and as this consumer suggests *“The Pick 'n Pay No Name brand oats is fantastic; most of the time it's cheaper”*.

These participants have mentioned that they will look at added benefits of the products. One way which marketers are using to convert low-involvement products into high-involvement products, according to Thøgersen, Jørgensen and Sandager (2012), is by adding an important product feature. This can be done by adding a “green” or “environmentally friendly” product feature onto an ordinary product. According to Thøgersen *et al.* (2012) this is done because the perception is that it will elevate consumer involvement in the choice of the product. They state that consumers will spend very little time and effort when shopping for everyday products. Therefore, in order for the consumer to reach a satisfactory outcome, they will employ simplifying heuristics or common sense by choosing a trusted brand, the cheaper option of the product or by just repeating the previous choice, provided it was a satisfactory one. Chaniotakis, Lymperopoulos and Soureli (2010) define own label products or no name brands, as products produced by or on behalf of the retailers and sold under the retailers’ own name or trade mark. The most important advantage of these products is that in many cases, they are lower priced in comparison to the branded products and the consumer, therefore, perceives it as being value for money.

Table 5.5 - Enhanced Product Features

Sub-Category	Quote
Perceived Added Value	1 “I'll balance price and see what's the added features and advantages of using this product versus what I already use.”
	2 “If it has more benefits or more features and its slightly more expensive, you sort of weigh it out”.
	3 “Value for money; if it's a different pasta at the same price for a higher nutritional value, lower GI at the same price, or same quality; I would definitely consider it.”
	4 “Even if it costs a little bit more, if it has the Weighless stamp on, then obviously it will be better for you.”
	5 “Yes, I will be willing to pay a rand or two more for a better product.”
	6 “Price would not really matter. Depending on the result. Is it going to be a good result?”

Sub-Category	Quote
Beneficial Product Attributes	1 “Is it worth it for me, because I'm on a diet or whatever?”
	2 “Like with a lower GI”
	3 “I'm willing to pay R1 more for a low GI bread”
	4 “In respect to a rand or two rand difference, yes, I would be willing to pay more if the nutritional value is higher; specifically orientated with kids.”
	5 “Even though you might pay more for organic products, they'll buy it.”
Sub-Category	Quote
Price Right Quality Measure	1 “I might buy something that is more expensive, it depends.”
	2 “If I'm interested enough, I'll buy it, regardless of price.”
	3 “If it's a product I do not know, but would like to get to know, it's the pricing. If it's on special, then you buy it.”
	4 “I've learned to realise cheap is rubbish. If you buy a cheap sausage, you're going to get rubbish inside.”
	5 “Because the Bokomo is much cheaper; if you're baking you must save every cent you can. I was not sure whether I'm doing the right thing by taking the Bokomo; so I did not; not yet.”
	6 “If a product is too cheap, then I question it. I'd rather go for the more expensive product that I know.”
	7 “Price would be a big thing for me. Would I use it?”
Sub-Category	Quote
Cheaper Trusted Option Measure	1 “The Pick 'n Pay no name brand oats is fantastic; most of the time it's cheaper.”
	2 “At Checkers you get the same sort of house brands; made by Unilever for instance. I will go for the cheaper one.”
	3 “The sugar goes into the same packaging. Ever since then, I've bought the cheapest sugar.”

5.3.3 Findings of the general attitude towards new food products in terms of the perceived packaging attributes of new food products

The third question that was asked of the participants regarding new product acceptability in general was: ***“What will make a new food product acceptable to you, in terms of the packaging of the product?”*** The findings suggested that not only are the actual packaging features important, but also the prominence of the in-store location. Various sub-categories emerged from the category of packaging features, including attractive packaging design and the type of packaging material. Also whether the packaging displays a serving suggestion and cooking instruction emerged as important. Lastly no-name brand appearances were mentioned as important possible influences on the consumer decision making process.

The second category that emerged from the qualitative findings was the location of the product within in the store. In this instance, if the product was in a prominent location and, therefore, drew the attention of the consumer, the new product would be considered.

Category 1 – Packaging Features as presented by Figure 5.7.

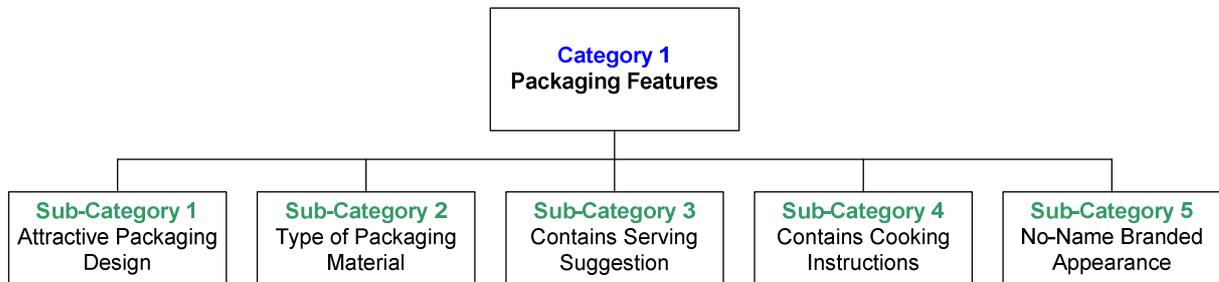


Figure 5.7 Packaging features regarding the general new product

When considering what elements of packing should be considered where new products are concerned, specific packaging features emerged that play a role in the acceptability of a new food product (see Figure 5.7). In particular five packaging features emerged. The participants pointed these out, as indicated in Table 5.6, to be attractive packaging design used to find a new food product acceptable as these quotes illustrate *“If it’s nicely packaged, does not matter what it is, I will try something completely new that we never had before”* and *“It’s more the packaging; the way it’s presented”*. The type of packaging material will also draw the consumers’ attention and might be used to consider whether a new food product is acceptable or not, as suggested by these quotes in Table 5.6, *“If it’s in a nice tin or a bottle or something”* and *“If it’s in a tin; I tend to look more and first at the tin with the nicer photo on”*. Certain of the participants mentioned that whether the packaging of a new product included serving suggestions, *“If your packaging is set in such a way, for example those things they say - serving suggestion”* and *“The best way to serve it, hot or cold”*, is important to them. Other participants felt that should any cooking instructions be provided on the packaging, it would make it more convenient to use, as this quote in Table 5.6 states, *“I prefer the cooking instructions; I do not mind the serving suggestions. Can I microwave this?”* and *“Can you use it in the microwave, can it be frozen and in how many days does it have to be eaten?”* Of these packaging features that emerged from the data, as indicated by Table 5.6, it was attractive packaging design that was identified the most by the participants, followed by the inclusion of serving suggestions and cooking instructions.

One of the packaging features that was less often mentioned was a no-name branded appearance, as this quote in Table 5.6 suggests *“This PnP brand, the house brands, sometimes I just do not like buying it”*. The participants further mentioned that the no-name branded products usually do not have attractive packaging and, therefore, it might not draw their attention, as the quote suggests, *“If it's just blunt like Pick 'n Pay normal, PnP blue and white no name brand; I do not even notice that”*.

Silayoi and Speece (2004) mentioned that the package that stands out on the shelf will influence the consumers' decision making process, it is, therefore, important to have a design that is eye catching. A study done by Chaniotakis *et al.* (2010) of the consumers' intentions of buying own label premium food products they mention that during the past couple of decades, own label products have made a dynamic appearance. Furthermore, consumer's acceptance of these retail products have grown to the extent where they believe these products represent good value for money and trusting these products as much as manufacturer brands. Eastwood (1994) conducted a study on consumer acceptance of vacuum packed fresh beef in comparison to ordinary packed fresh beef. Eastwood (1994) wanted to establish whether the consumers would have a specific preference between the different packed products. His conclusions let him to believe that for his particular study the cheaper product for the vacuum packed product did not increase the sales; there were no significant changes in the consumer's preference in the type of packaging material. He did, however, notice that shoppers who purchased filet mignon were willing to pay more and eager to experience new products, they showed new product curiosity.

Table 5.6 - Packaging Features

Sub-Category	Quote
Attractive Packaging Design	1 “If it's nicely packaged, does not matter what it is, I will try something completely new that we never had before.”
	2 “It's more the packaging; the way it's presented.”
	3 “You will look at the colour; if it's a nice packaging”
	4 “Colourful, it really has to draw your attention immediately, eg Easter Eggs, they are colourful”
	5 “Colourful”
	6 “Packaging is very important”
	7 “If it is well done and it's attractive and the price is right.”
Sub-Category	Quote
Type of Packaging Material	1 “If it's in a tin; I tend to look more and first at the tin with the nicer photo on.”
	2 “If it's in a nice tin or a bottle or something.”

Sub-Category	Quote
Contains Serving Suggestion	1 “If your packaging is set in such a way, for example those things they say - serving suggestion.”
	2 “Definitely, that will also be very handy.”
	3 “The best way to serve it, hot or cold.”
	4 “Something presented as tasteful. The normal amount of effort you put in. Is it doable?”
	5 “With vegetables or meat?”
Sub-Category	Quote
Contains Cooking Instructions	1 “Can you use it in the microwave, can it be frozen and in how many days does it have to be eaten?”
	2 “If you have to put it in something else to freeze or can you freeze it in the packet you buy it in?”
	3 “I prefer the cooking instructions; I do not mind the serving suggestions. Can I microwave this?”
	4 “The cooking instructions are not essential for me; you can get it elsewhere.”
Sub-Category	Quote
No-Name Branded Appearance	1 “If it's just blunt like Pick 'n Pay normal, PnP blue and white no name brand; I do not even notice that.”
	2 “This PnP brand, the house brands, sometimes I just do not like buying it.”

Category 2 – Prominent In store Location as presented by Figure 5.8.

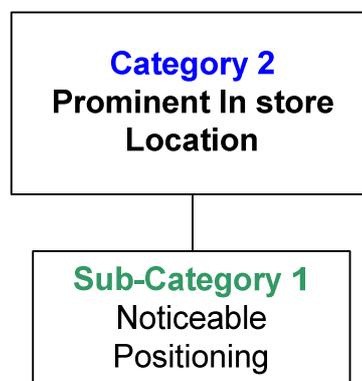


Figure 5.8 Prominent In store location of the general new product

Figure 5.8 indicates that by placing the new product in a prominent in-store location, participants felt that it would help prospective buyers to notice the new product and assist the consumer to make a decision on whether it is an acceptable product or not, as indicated in Table 5.7, and as these quotes suggest “It’s not like you buy it necessarily, but you do notice it” and “Maybe this is on special, so I’ll check in the aisle. But I do notice”.

The noticeable positioning of the product will draw the consumers' attention and make them aware of the new product, especially the consumers who are in a rush, as this participant stated, *"If you're on a mission, then obviously it has to stand out"* and *"If it's in the front, you cannot miss it"*.

Bell, Corsten and Knox (2011) mention that in-store marketing or exposure has a great influence on the unplanned purchases of consumers, although there are also other factors which could possibly influence the purchasing decision making before the consumer enters the store, for instance whether the consumer planned the shopping trip or not and whether the consumers are focused or abstracted.

Table 5.7 - Prominent In store Location

Sub-Category	Quote
Noticeable Positioning	1 "End of the row"
	2 "It's not like you buy it necessarily, but you do notice it"
	3 "Maybe this is on special, so I'll check in the aisle. But I do notice."
	4 "If you're on a mission, then obviously it has to stand out."
	5 "If it's in the front, you cannot miss it."

5.3.4 Findings of the participant's general attitude towards consumer education and knowledge of new food products

The fourth question that was asked in terms of the acceptability of new food products, specifically regarding the product education and knowledge of the product was stated as follows: ***"Do you feel that if you have specific knowledge or education about a new product that you will more likely buy that product?"*** Two main categories emerged from the findings. Some of the participants showed a distinct product curiosity while other participants felt they need more product knowledge so that they can make an informed decision. The sub-category for the product curiosity participants indicated a willingness to test new products, whereas the sub-categories which emerged from the product knowledge category indicated a wide range of required information before they can make a decision.

Category 1 – Product Curiosity as presented by Figure 5.9.

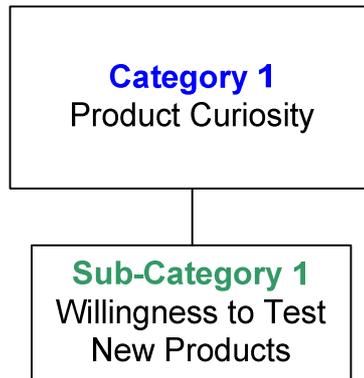


Figure 5.9 Product curiosity regarding the general new product

Figure 5.9 indicates that product curiosity seems to be the cause of decisions being made without having additional information. Some of the participants will buy a product, purely because they are curious about it and willing to test new products, as referred to in Table 5.8, and not necessarily because they have additional or specific product knowledge, as this participant said, *“It’s more because I’m curious; it does not matter what is in it.”* However, one participant did mention that the product must be familiar, in other words, similar to what they are currently using, *“If something comes new and slightly similar to something I’ve been using; I’d try it.”* According to Rubinson (2009), curiosity drives people to do things beyond logic and make consumers explore and discover new varieties of things they might need.

Table 5.8 - Product Curiosity

Sub-Category	Quote	
Willingness to test new products	1	“It’s more because I’m curious; it does not matter what is in it.”
	2	“If something comes new and slightly similar to something I’ve been using; I’d try it.”
	3	“If it looks nice and it is colourful, the children will like it.”

Category 2 – Product Knowledge Criteria as presented by Figure 5.10.

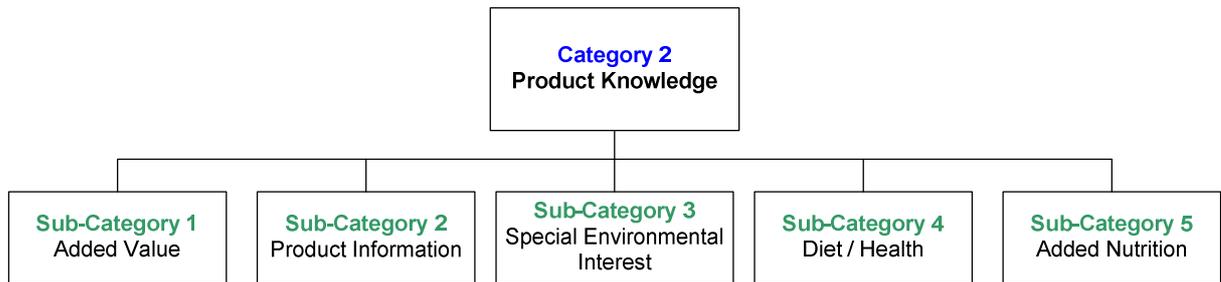


Figure 5.10 Enhanced product knowledge regarding the general new product

Figure 5.10 clearly indicates the various categories that emerged to give an indication as to what makes a product acceptable to the consumers, it seems that product knowledge is playing an important part in the consumer decision making process. As indicated in Table 5.9, the participants would like to know whether the new product would add value to their lives, like these quotes suggest, *“You do not want to buy something that will sit in the house and you're not going to utilize it or has no value to you”* and *“You want to know what you can do with the product”*. It is also important for the consumers to be informed about the product and that the packaging should contain additional product information as these quotes in Table 5.9 indicate, *“No there must be information on there”* and *“It would be criteria, especially if you have kids”*. The significance about the presence of children was mentioned because the participants would like to know that type of products they are giving to their children to eat, therefore, the importance of product information.

To a smaller degree the participants would also like to know whether this new product has special environmental interest, as shown in Table 5.9, *“Environmentally conscious”* and *“But if it's a non-food product; maybe certain things that are used in detergents that are derived from animals and if it's important to you, you will look at that”*. Certain features that were extremely important to the participants are added nutrition and diet/health, as mentioned in Table 5.9. Diets and health seems to be a hot topic and the participants would like to know whether a product would be of specific interest to them, like this participant said, *“If you're on a diet and there's a product that has a specific benefit towards that, it raises your interest”*. Additionally the participants will look for the presence of specific ingredients or attributes of the product which could influence their health, for instance, they would like to know whether the product is low GI, the percentage of fat, sugar and salt as indicated by these quotes, *“Low GI usually catches my eye”*, *“I look at the salt content”*, *“kJ and fat and whatever”*, *“Sugar; I always look at the sugar”* and also

“Or preservatives”. The participants would, therefore, *“Rather go for the one that's got less artificial whatever's, MSG and all those things”*. Furthermore, added nutrition is of the utmost importance as indicated by these quotes in Table 5.9, *“Society now has become very conscious of what they consume. Anything that shouts healthy - how much fat is there, how much protein, the amount of carbs etc.”* and *“It's good and you need protein in your body”* and also *“Definitely whether it is nutritional”*.

Consumers are becoming more demanding on the products they are buying, they are also paying more attention to the labeling information as they are becoming more and more concerned about health and nutrition, as stated by Silayoi and Speece (2004). These consumers use the package information more extensively to assist with the decision making process. The written information on the packaging can also assist the consumer during the decision making process as it will give them the opportunity to assess the product information and characteristics of the product (Silayoi & Speece, 2004). In a study done by Hoeffler (2003), the author investigates the difference between introducing a really new product in comparison to incrementally new products. Hoeffler (2003) states that it is critical for some consumers to have knowledge of really new products in order for them to understand the attributes and benefits. Furthermore, Hoeffler (2003) states that by definition, *“potential customers have limited knowledge about really new products and, therefore, must construct preferences at the time of measurement”*.

Table 5.9 - Product Knowledge

Sub-Category	Quote	
Added Value	1	“You do not want to buy something that will sit in the house and you're not going to utilize it or has no value to you”
	2	“You want to know what you can do with the product.”
	3	“Certain things will have claims on them, like Weighless have their stamp on certain products.”
	4	“A recipe”
	5	“Yes a recipe”
Sub-Category	Quote	
Product Information	1	“No there must be information on there.”
	2	“I like more information.”
	3	“It would be criteria, especially if you have kids.”
	4	“Is very important.”
	5	“Especially for me as a young one.”

Sub-Category		Quote
Special Environmental Interest	1	“But if it's a non-food product; maybe certain things that are used in detergents that are derived from animals and if it's important to you, you will look at that.”
	2	“Organic”
	3	“Environmentally conscious”
	4	“I look at things like trans-fat; is it organically grown? How many additives it contains; basically your health”.
Sub-Category		Quote
Diet / Health	1	“If you're on a diet and there's a product that has a specific benefit towards that, it raises your interest.”
	2	“Low GI usually catches my eye.”
	3	“Nutritional table - the amount of fat.”
	4	“I look at the salt content.”
	5	“kJ and fat and whatever.”
	6	“Sugar; I always look at the sugar”
	7	“Or preservatives”
	8	“On the medical side, if you have children with allergies and stuff.”
	9	“The ingredients. How much sugar there is, how much fat.”
	10	“No Sugar”
	11	“Sugar, Fat, what sort of ingredients are in it.”
	12	“High in fibre, no sugar, no fat or low fat”
	13	“Fat free milk.”
	14	“Or the right word - Low GI.”
	15	“Rather go for the one that's got less artificial whatevers, MSG and all those things.”
	16	“More the natural colours.”
	17	“Sometimes you are health conscious, so its that small little things that make a difference.”
Sub-Category		Quote
Added Nutrition	1	“For me the big thing would be preservatives and added nutrition; added vitamins and folic acid and stuff like that.”
	2	“Definitely whether it is nutritional”
	3	“It's good and you need protein in your body”
	4	“It's like grab and eat; I need to read up on stuff and need to know whether I'll be benefitting in the long run.”
	5	“Society now has become very conscious of what they consume. Anything that shouts healthy - how much fat is there, how much protein, the amount of carbs etc.”
	6	“If it's good nutrition for runners.”

5.3.5 Findings of the participant’s general attitude towards new food products in terms of the perceived marketing of the product

The fifth question that was asked of the participants regarding new product acceptability in general was stated as follows: **“Where and how are you exposed to and when do you notice new products?”** The participants identified various marketing strategies that they felt would make them more aware of a product. These included the in-store promotions, word of mouth, printed and electronic media and in-store sampling. Through these various strategies, a second category emerged which is the marketing effect which would allow the participants to recognise the product with more ease.

Category 1 – Marketing Strategies as presented by Figure 5.11.



Figure 5.11 Marketing strategies regarding the general new product

Figure 5.11 indicates that participants considered several marketing strategies that manufacturers could use to market a new food product in general. One of the most frequently mentioned marketing strategies is the handing out of in-store samples, as indicated in Table 5.10. This is because they added value to such samples in terms of allowing the consumer to test the product before making an impulsive decision to purchase the new product as these quotes suggest; *“A small little sample pack to test; I test it”* and *“If someone was standing there behind a demonstration that is also very nice. My children run to them and if it's nice, they will have it”*. The second most favoured marketing strategy that was suggested by the participants for marketers to use is printed media, as shown in Table 5.10, printing information about the new product in magazines as these quotes suggest *“I tend to pick up a lot of ads about food products, especially in magazines. You are able to read as well”* and *“The magazines come with all these samples inside; there are quite a few of those that I've started buying”*. As well as printing information in newspapers as these quotes suggest *“Newspaper or a magazine”* and *“Newspapers”*.

The main reason why consumers also favoured printed media was because it allowed them to read about the new products as these quotes suggested *“If it's advertised in a magazine; I'll see what the ingredients are”* and *“I like to read about stuff in the magazines to see if it's interesting and what it contains”*. Another media strategy that participants preferred to be applied when new products are released was to have in-store promotions running, as indicated in Table 5.10; this would draw the attention to a new product as indicated by these quotes, *“Signage in the shop. They have big signs, something that catches your eye - short and sweet; say what you need to know”* and *“Sometimes the shops they have signs saying look at the new products”*.

The use of electronic media, as pointed out in Table 5.10, was another favoured media strategy to follow, especially TV-advertisements that would create an awareness of the products as indicated by this quote *“Especially if they advertised it on TV, if there is a good ad on a product, you will look for it”*. According to the quotations in Table 5.10, the participants suggested that word-of-mouth could be used as a marketing strategy as these quotes suggest *“I would say friends. If someone tells me this is a nice product, I would go and buy that”* and *“I've got friends that have the same lifestyle as myself and it's nice to get their opinion. My one friend is adventurous and tries new products.”* Although the word-of-mouth marketing strategy was mentioned to a lesser extent than the other four marketing strategies for new food products, it is still an important marketing strategy.

Historically television advertisements have been the dominant avenue for the marketing of food and beverages according to Colby, Johnson, Scheett and Hoverson (2010). Colby *et al.* (2010) continue to state that although television is still the prominent marketing method, there are now various other avenues that companies follow, including nutritional information on labels, word-of-mouth, sales promotions, co-branding, cross-promotions, marketing tie-ins, on-line promotions, event and location marketing to promote and create awareness of a new food product. Companies are using various combinations of these marketing strategies. According to a study by Duffy (2003) on the effect that internal and external factors have on consumer loyalty, customers who become familiar with a particular brand will mention it to their friends and family. Duffy (2003) continues to say that generally people like to feel smart and *“in the know”* and, therefore, they will not hesitate to make recommendations to their friends and family and in that way the message is spread via word-of-mouth.

Table 5.10 - Marketing Strategies

Sub-Category	Quote
In-store Sampling	1 “Definitely, if I can taste it and if I can give it to the kids in the shop and they like it, then yes, I'll buy it.”
	2 “If someone was standing there behind a demonstration that is also very nice. My children run to them and if it's nice, they will have it.”
	3 “If there is someone standing there, you will try it.”
	4 “Someone in the shop actually selling the product.”
	5 “If somebody gives you a sample, but even if you get a sample, I will test it”
	6 “These little things you get in your magazine nowadays. If they look interesting, you will test it.”
	7 “A small little sample pack to test; I test it.”
	8 “Anything you get for free with it, like a keyring or something.”
	9 “But you would like to try it first; see if it's going to work; so see if it's feasible. You would like to try it on your family.”
	10 “It's something you can take home and share; you're not in the shop and put on the spot.”
	11 “If you do that (get something for free) then at least you get a chance to try it.”
	12 “A little take away sample, and I buy it now.”
Sub-Category	Quote
Printed Media such as Magazines and News Papers	1 “I tend to pick up a lot of ads about food products, especially in magazines. You are able to read as well.”
	2 “The magazines come with all these samples inside; there are quite a few of those that I've started buying.”
	3 “Newspaper or a magazine”
	4 “A magazine advert, you have a bit more time and you can read.”
	5 “Magazines”
	6 “Food magazines”
	7 “Newspapers”
	8 “Any sort of media coverage.”
	9 “I like to read about stuff in the magazines to see if it's interesting and what it contains.”
	10 “If it's advertised in a magazine; I'll see what the ingredients are.”

Sub-Category	Quote
In-store Promotions	1 "You want to see how they attract you to it; to buy and you want to try it out."
	2 "Would sort of draw you to the product when you walk into the store."
	3 "Only have a certain time; you rush in and you rush out; so it must catch my eye."
	4 "Sometimes you even get discount."
	5 "Sometimes the shops they have signs saying look at the new products."
	6 "Signage in the shop. They have big signs, something that catches your eye- short and sweet; say what you need to know."
	7 "They have a little sign, normally on the shelves"
Sub-Category	Quote
Electronic Media	1 "Internet"
	2 "Google it, maybe do a factory background"
	3 "It depends on where it is advertised, you obviously see things on TV as well."
	4 "You see in a magazine, on the radio or on the TV."
	5 "Probably TV advertisement as well"
	6 "Billboard next to the road; handed out flyers."
	7 "But also TV advertisements; it influences you a lot"
	8 "Should have seen it first maybe on TV or newspaper or magazine."
	9 "TV"
	10 "Especially if they advertised it on TV, if there is a good ad on a product, you will look for it."
Sub-Category	Quote
Word-of-mouth	1 "I would say friends. If someone tells me this is a nice product, I would go and buy that."
	2 "I've got friends that have the same lifestyle as myself and it's nice to get their opinion. My one friend is adventurous and tries new products."
	3 "To share something with friends and family."

Category 2 – Marketing Effect as presented by Figure 5.12.

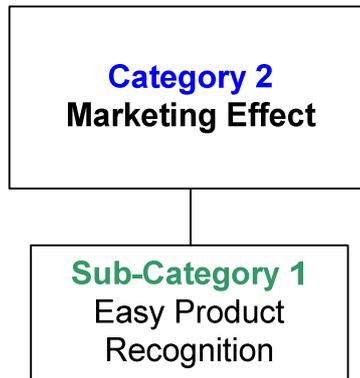


Figure 5.12 Marketing effect regarding the general new product

By being confronted by the various marketing strategies, the participants felt that they would be able to recognise the product (see Figure 5.12) and, therefore, it will not be a completely new product anymore, as shown in Table 5.11 and as these quotes indicate, “When I’ve read about it and then if I see it in the shops I’ll recognise it” and “You will get used to it and when you see it on the shelf”. The initial barrier of unfamiliarity has, therefore, been broken down, making the purchasing decision slightly easier, “Yes, when you see it, you will buy it immediately”.

According to Hafstrom *et al.* (1992), the decision making process is far more complicated in the modern age than it was in the past. Hafstrom *et al.* (1992) continue to mention that consumers are bombarded by advertising, news articles and direct mailings. There is also an increase in the amount of products available in the stores and shopping malls and online shops. Because there are so many products to choose from and the variety is so vast, the consumer has to become more informed and educated and the companies have to come up with new ideas to differentiate their products (Hafstrom *et al.*, 1992).

Table 5.11 - Marketing Effect

Sub-Category	Quote
Easy Product Recognition	1 "When I've read about it and then if I see it in the shops I'll recognise it."
	2 "Because you see the new product (on TV) and when you get to the shop and you see it there."
	3 "Let's go look at it, but then when you get to the shop, sometimes you are disappointed."
	4 "You will get used to it and when you see it on the shelf."
	5 "You will think that it's fantastic, it was well advertised. It's very important media advertising."
	6 "Yes, when you see it, you will buy it immediately."
	7 "Then you already know about it; you have more time."

5.3.6 Findings of the participant's general attitude towards new food products in terms of the perceived branding importance of a product

The sixth question asked in terms of the acceptability of new food products, specifically regarding the importance of branding of the product was stated as follows: ***“Regarding branding. How important is a brand to you? And why?”*** The participants were divided into two consumer camps regarding the branding of a new product. There were those that were extremely loyal to a specific brand and contrary to this, the participants who were indifferent to what the brand is, as long as the product is good. The sub-categories which emerged from the brand loyal consumer indicated consumers who are competitor ignorant, put quality of a brand as a priority and are comfortable with a familiar owner of a brand and, therefore, tend to trust the brand. The sub-categories which emerged from the indifferent consumer category indicated that these consumers are not very brand loyal, they will, therefore, try different products and the enticement of a new brand will reach their adventurous side prompting them to try the new brand or product.

Category 1 – Loyal Consumer as presented by Figure 5.13.

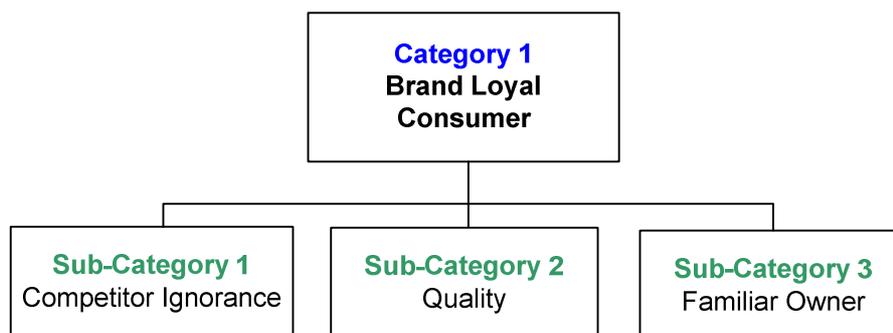


Figure 5.13 Brand loyal consumer towards brand importance of the general new product

Figure 5.13 clearly indicates that brand loyal consumers will purchase a product of a specific brand purely because it carries that brand. The participants identified certain features, particularly those being brand loyal that results in their brand loyalty. Certain of the participants felt so strongly about the brand they know and are familiar with, that they would not even consider an alternative product; they are, therefore, completely ignorant to competitor products, as indicated by Table 5.12, *"I'm very brand loyal. So I do not even look at anything else"* and *"Very. Because it's what I know, it's what I like and I've done it for years"*. These participants also had a strong faith in the known brand, as this quote indicates, *"You know the brands and you have faith in that brand"*. The participants associated a specific brand with quality and most of the time they have used a particular product for many years and, therefore, they do not want to change. Not only did the participants believe in a specific brand, but they also believed in the brands' quality and, therefore, were willing to pay more for the known brand than trying an unknown brand which might cost less, as stated by this participant, *"The branding is quite important; if it's something that you know you are willing to pay a little bit of a difference because you know the quality"*. Additionally the participants felt that buying a cheaper product might not always be the best, so they would rather buy a brand which they know and trust, *"Because sometimes you buy the cheaper product it's not so good and you will never buy it again"*. Even though these participants were extremely brand loyal, they did mention that they might be more willing to consider new products if they were launched by a familiar company or familiar owner of a brand, rather than a new company they are unfamiliar with, *"I prefer to buy the brands that sell the most"* and *"It's like Snowflake and Sasko. You'd rather take Snowflake; because I'd rather bake with that"*.

Often consumers will use brands to define, improve and express their social and personal identity as stated by Bhardwaj, Park and Kim (2011). Bhardwaj *et al.* (2011) continue to say that there is an emotional value that consumers derive from the brand name and this can generate positive feelings. Brand conscious consumers may, therefore, be interested in the emotional feeling connected to a purchase (Bhardwaj *et al.*, 2011). Bhardwaj *et al.* (2011) furthermore states that brand loyalty signals consumers' satisfaction with consumption and achieved expectation toward the brand.

Table 5.12 – Brand Loyal Consumer

Sub-Category	Quote
Competitor Ignorance	1 “Very. Because it's what I know, it's what I like and I've done it for years.”
	2 “I'm very brand loyal. So I do not even look at anything else.”
	3 “In the beginning the branding makes a difference.”
	4 “You know the brands and you have faith in that brand.”
	5 “In other words we are pretty brand conscious”
	6 “I'd rather use the stuff that I know.”
	7 “The brand that I'm used to buying all the time.”
Sub-Category	Quote
Quality	1 “Because sometimes you buy the cheaper product it's not so good and you will never buy it again.”
	2 “The branding is quite important; if it's something that you know you are willing to pay a little bit of a difference because you know the quality.”
	3 “You know the benefits.”
Sub-Category	Quote
Familiar Owner	1 “I prefer to buy the brands that sell the most.”
	2 “It's like Snowflake and Sasko. You'd rather take Snowflake; because I'd rather bake with that.”
	3 “Even when it comes to bread.”
	4 “I suppose yeah Eg. I'm not big on KFC, purely because of the fat; but now they have this grilled KFC, that is something new.”

Category 2 – Indifferent Consumer as presented by Figure 5.14.

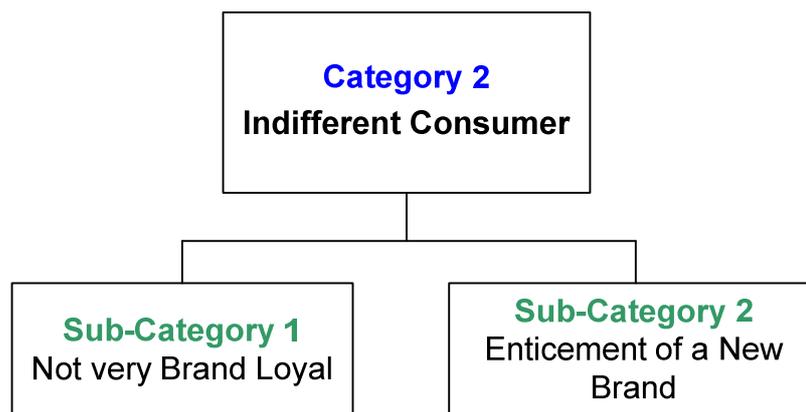


Figure 5.14 Indifferent consumer towards brand importance of general new product

As indicated in Figure 5.14, the indifferent consumer group was particular of participants who are not very loyal to a particular brand and would be willing to try new and different products or brands as these quotes in Table 5.13 suggest, “I'm not so brand loyal; I will try

something and then decide” and *“It’s the product that I want; it’s not really a brand”*. They mentioned that they would prefer to know a little more about a completely new product, as indicated by these quotes, *“I will try from the new company, but if they let me try if first, then I’ll buy it”* and *“Unless it’s something totally new; the advertising has been so good”*. According to Table 5.13, there also seemed to be an enticement of a new brand especially should there be a promise of additional benefits or incentives. These quotes highlight the importance the participants place on incentives associated with the launch of a new product or brand, *“With a new brand; if you get a discount voucher or something you can use, but not otherwise”* and *“Should the new product not perform, you can have a refund or something”*.

Table 5.13 - Indifferent Consumer

Sub-Category	Quote
Not very Brand Loyal	1 “I’m not so brand loyal; I will try something and then decide.”
	2 “I’m not brand loyal; I think its more price.”
	3 “It’s the product that I want; it’s not really a brand.”
	4 “If a new brand is cheaper.”
	5 “But I’ll consider it if it’s something new.”
	6 “If you are health conscious or if the new brand is healthier than the one you are using.”
	7 “To me it’s not so important.”
	8 “These days I tend to look at the taste more.”
	9 “Not always. You can have a good brand with a bad quality product inside.”
	10 “I know if you buy Fatti’s and Moni’s macaroni and you buy PnP’s brand; it’s basically the same.”
	11 “I do not know; there are many very nice products launched by other people.”
	12 “I will try from the new company, but if they let me try if first, then I’ll buy it.”
	13 “Unless it’s something totally new; the advertising has been so good.”
Sub-Category	Quote
Enticement of a New Brand	1 “With a new brand; if you get a discount voucher or something you can use, but not otherwise.”
	2 “In the end the brand will make it more attractive price wise. If it’s cheaper and it’s a brand that you know, you might get to look at it.”
	3 “It’s not just about the brand, but also about convenience and what we are getting out of it.”
	4 “Should the new product not perform, you can have a refund or something.”

5.4 Qualitative findings regarding a food product containing pea protein

The second part of the focus group interview, which was used to address Objective 2, explored the influence that external product attributes have on consumers' perceived acceptance of pea protein as a protein substitute in food products which specifically contain pea protein, in terms of the a) influence of perceived price, b) perceived marketing of the product, c) perceived packaging attributes of new food products, d) perceived branding importance of a product and e) new product education and knowledge perceived necessary for acceptability of a new food product.

5.4.1 Findings of the participant's attitude towards new food products containing pea protein

After a brief introduction to pea protein detailing what pea protein is and where it is manufactured, the researcher asked the following question: ***“You see a product containing pea protein, think of how you would react?”*** The qualitative outcomes suggest that there are four consumer product approaches consumers would apply when confronted with a new food product containing pea protein. These product approaches can be considered to be a classification of different types of consumer behaviour consumers' exhibit towards a new and unfamiliar food product, such as a pea protein product. The product approaches emerged as categories which included pea protein as a healthy alternative to conventional protein product approach, the adventurous consumer approach and the product comfortable consumer approach. Furthermore, various favourable influencing factors emerged as a category. The categories were further defined and sub-categories emerged from the data. Each category, containing the sub-categories will be discussed in detail. An overview of the various categories and sub-categories is presented in Figure 5.15.

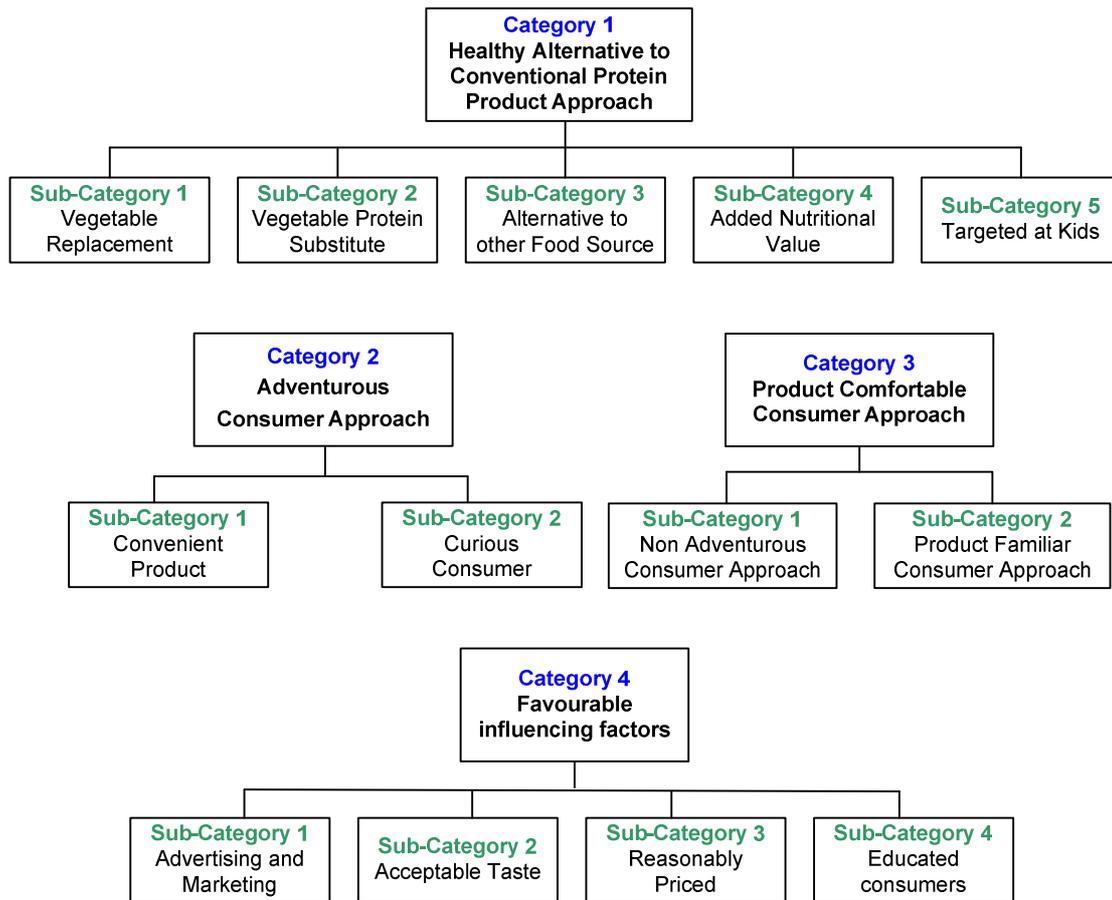


Figure 5.15 An overview of the various categories emerging from the participants' general attitude towards products containing pea protein

Category 1 - Healthy Alternative to Conventional Protein Product approach as presented by Figure 5.16.

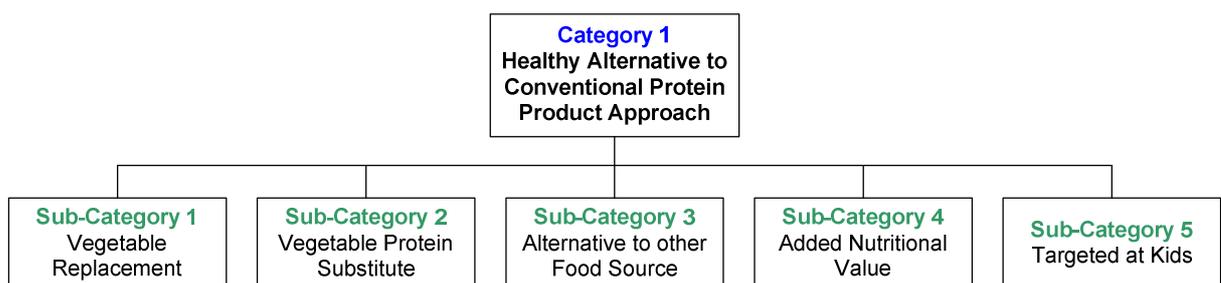


Figure 5.16 Pea protein products a healthy alternative to conventional protein products

With regard to the approach of a healthy alternative to conventional protein product approach, the findings in Figure 5.16 indicate that the participants saw the benefit of pea protein as a vegetable replacement, as pointed out in this quote from Table 5.14, "I think I would try it, purely for my kids, because they hate peas" and "Also for my son, because he does not eat any vegetables, nothing. So I would for that". According to Table 5.14, the

findings also indicate that certain participants were of the opinion that pea protein would be a good vegetable protein substitute and not only a vegetable in itself. The participants pointed to the fact that eating plans and diets are changing and there is an increase in consumers who are following vegetarian diets. Vegetarian diets need protein from different sources, as indicated by Table 5.14, and confirmed by these quotes *"I'm always looking for protein sources that are not meat"* and *"It's a healthy protein. Pea protein is far healthier than meat"*. As an alternative to other food sources, the pea protein is perceived as a good choice, as these quotes indicate *"It could be an alternative to beef or in a sport application, then I definitely will"* and also *"Do you get pea protein like the soya that you can cook like that so that it looks like mincemeat?"*

Furthermore, as presented in Table 5.14, the nutritional claims that can be made on a product containing pea protein, were also very important and the participants felt that if they could enhance the nutritional value of the meals for their families, without them recognizing or knowing that it contains pea protein, the mothers would feel better, as this one participant stated *"If there was something for example, add a scoop of this, that you can camouflage it in the food to up the nutritional value of the food"* and also *"Nutritional value for money; the big deciding factor"*. The participants also mentioned that for people who exercise, the fact that a product contains protein will be of interest, as this participant states, *"You see, as soon as you say "pea protein builds muscle", then it has a bit of a catch"*. Additionally, the participants felt that they would definitely consider a product containing pea protein because it is a non-allergen. It was quite important especially to the participants who were mothers, as one participant said *"So someone who is very allergic will look out for something like the pea protein"* and another participant agreed, *"No allergen warning label is required. Allergen free, preservative free; high protein"*.

Furthermore, as confirmed in Table 5.14, the participants recognised the importance of the influence that children have on their shopping choices of food as well as the food they prepare. The participants felt that where children are concerned the product will mostly be bought for the sake of children, because many children are not great protein eaters, as this quote says *"I would be interested because of my children; because my interest is that because my son is not a great protein eater"*. However they may only be susceptible to the product if it looks appealing stemming from this comment *"I will make them try it. But if it looks appealing they will try it"* or interesting *"You have to make it interesting. It's difficult in my sense with two young ones"* and does not have a grainy texture *"What their biggest hassle is, is texture"*.

Daniells (2013) states that consumers want products that are healthy and sustainable and at the same time have an appealing taste and texture, which pea protein can offer. Pea protein is apparently also gaining popularity because of the clean label and non-allergy properties (Daniells, 2013). Furthermore, according to Altaffer and Washington-Smith (2012), although the interest in proteins is still mainly driven by sport supplementation, there is also a strong interest for vegetarians, alternative diets, weight loss and meal replacements.

Table 5.14 - Healthy Alternative to Conventional Protein Product Approach

Sub-Category	Quote	
Vegetable Replacement	1	I think I would try it, purely for my kids, because they hate peas.
	2	Me as well, also for my kids. We are not very much into vegetables; it could bring a balance to our meal.
	3	Also for my son, because he does not eat any vegetables, nothing. So I would for that.
	4	I would give it to my husband without telling him about it.
	5	Is it similar to chick peas?
	6	I'm thinking for people that do not like veggies; so for me pea protein is like wow - peas and protein together; no, take a pass.
Sub-Category	Quote	
Vegetable Protein Substitute	1	I'm looking more at the protein part and I'm very much a believer in fresh veggies. A source of protein.
	2	If the product is made; ok, it's vegetable so it's good, but how is it made?
	3	For me the protein content.
	4	Mine would be high quality vegetable protein.
	5	It's a healthy protein. Pea protein is far healthier than meat.
	6	If I take a product and I look at it and see protein, I do not think it would really bother me.
	7	I'm always looking for protein sources that are not meat.
	8	But if you talk about a healthy protein, even people who are vegetarians, for them that's an option.
	9	I think if you are not a meat eater and you've been told you have to have protein somehow, you will probably look at it.
	10	What is the alternative for your normal vegetarian protein? Tofu, soya?

Sub-Category		Quote
Alternative to other Food Source	1	It could be an alternative to beef or in a sport application, then I definitely will.
	2	If they can have it in cereal and stuff, they can also have it in pasta. So your pasta becomes your protein instead of just your carb. It becomes the protein meal as well.
	3	What will the benefits be of a pea protein other than another protein?
	4	If it was a substitute to soya or not a substitute, but something different, I would look at it.
	5	I think if you are not a meat eater and you've been told you have to have protein somehow, you will probably look at it.
	6	Do you get pea protein like the soya that you can cook like that so that it looks like mincemeat?
Sub-Category		Quote
Added Nutritional Value	1	No allergen warning label is required. Allergen free, preservative free; high protein.
	2	In countries where there are not a lot of protein available. I'm talking about a nutritional point of view.
	3	If there was something for example, add a scoop of this, that you can camouflage it in the food to up the nutritional value of the food.
	4	Nutritional value for money; the big deciding factor.
	5	If it is part of a low GI eating plan; will it really improve?
	6	What are the health issues behind it; firstly it will be nutrition and health.
	7	You see, as soon as you say "pea protein builds muscle", then it has a bit of a catch.
	8	So someone who is very allergic will look out for something like the pea protein.
Sub-Category		Quote
Targeted at Kids	1	Like I said, that would be one of the substantiating reasons why I would try it.
	2	I do not have kids, but I have a very fussy husband; I would give it to him without telling him about it.
	3	I would be interested because of my children; because my interest is that because my son is not a great protein eater.
	4	I will make them try it. But if it looks appealing they will try it.
	5	Particularly for me, it will be much more difficult because my son is very fussy in what he eats; but my daughter puts anything in her mouth and if it tastes good, she'll eat it
	6	You have to make it interesting. It's difficult in my sense with two young ones.
	7	What their biggest hassle is, is texture.
	8	And if they like something, you can put the pea protein in there and they will not recognise it.

Category 2 – Adventurous Consumer Approach as presented by Figure 5.17.

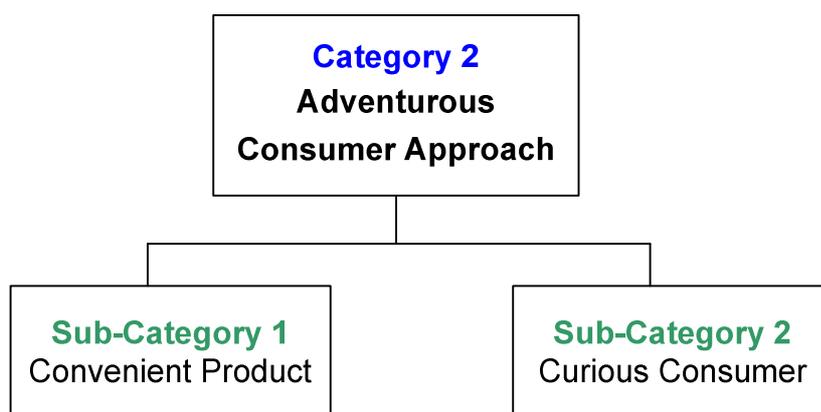


Figure 5.17 Adventurous consumers regarding new product containing pea protein

Adventurous consumers would be interested in trying the new product because of the convenience element the product may offer (see Figure 5.17). The participants identified convenience as a “time saving” concept, as this quote suggests, *“If it makes my life easier and saves time, absolutely”*. However, as shown in Table 5.15, the convenience of a new product is specifically found in the type of product that would contain pea protein such as snack bars as these quotes suggest, *“Now if they were to make snack bars with protein in, enriched with pea protein, yes I would be interested”* and *“But I also like the idea of snack bars and stuff for kids for lunch boxes”*. Convenience was also found in the new product if the product could be added to meals as these quotes state, *“Would this be usable as a partial flour substitute? Anything I would have been able to add into food would have been great”* and *“So it will not be sold as a packet of pea protein that you then add, like bran, to a meal, like a soup or a stew?”*

According to Table 5.15, quite a number of the participants also mentioned that they would try the pea protein product purely because they are curious, as this quote indicates, *“Due to curiosity; we want to know what it is”*. Furthermore, to some of the participants the product does not seem unfamiliar, *“When we were in Israel, there was more or less the same stuff. And it tastes nice, so I’ll try it; I’ll definitely try it”* and they feel that they’ve been informed about it, *“Now that we know about it, we would like to try it. Otherwise we would not have known about it”*; therefore, they would be quite willing to try it. They are also adventurous and try new things, *“I like to try new things and try new stuff.”* and should it have extra health benefits such as added protein, it would be considered an additional advantage, *“And for people that work out, protein is of absolute importance, they will pick it up. And if you say pea protein builds muscle; it’s a gonner”*.

The range of food products and beverages where pea protein is already being utilised is expanding constantly and is now including from nutritional bars to ready-to-drink beverages and powders and from pastas to batters and breadings (Daniells, 2013). Furthermore, Rubinson (2009) mentions that humans are curious and, therefore, will explore whenever possible by trying and testing new and unfamiliar products.

Table 5.15 - Adventurous Consumer Approach

Sub-Category		Quote
Convenient Product	1	If it makes my life easier and saves time, absolutely.
	2	Yes. I think that is why Woolworths has done so well, because of their convenience. You can literally walk in, grab it and take it and you're done.
	3	Would this be usable as a partial flour substitute? Anything I would have been able to add into food would have been great.
	4	Now if they were to make snack bars with protein in, enriched with pea protein, yes I would be interested.
	5	I would feel a bit better about dinner; less guilty, because I've added some protein.
	6	Convenience.
	7	But I also like the idea of snack bars and stuff for kids for lunch boxes.
	8	So it will not be sold as a packet of pea protein that you then add, like bran, to a meal, like a soup or a stew?
Sub-Category		Quote
Curious Consumer	1	And for people that work out, protein is of absolute importance, they will pick it up. And if you say pea protein builds muscle; it's a gonner.
	2	Due to curiosity, we want to know what it is.
	3	Now that we know about it, we would like to try it. Otherwise we would not have known about it.
	4	When we were in Israel, there was more or less the same stuff. And it tastes nice, so I'll try it; I'll definitely try it.
	5	I like to try new things and try new stuff.

Category 3 Product Comfortable Consumer approach as presented by Figure 5.18.

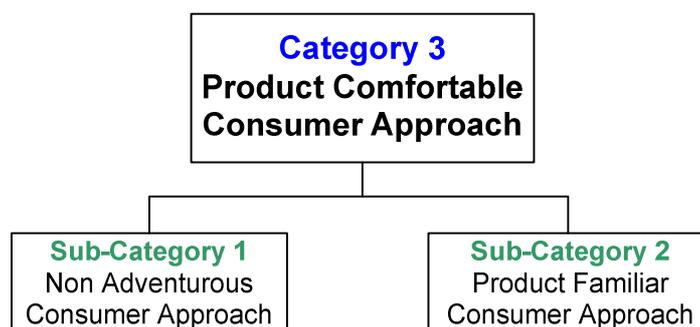


Figure 5.18 Product comfortable consumers approaches towards products containing pea protein

The third category that emerged, as indicated in Figure 5.18, was the product comfortable consumer approach where these consumers are comfortable with the products they know and might be reluctant to try anything new. The participants indicated that they were not the adventurous type of consumers but set in their ways, as this quote in Table 5.16 indicate, *“I think, I will not say it is more for the younger generation, but we are set in our ways”* and it could also be culturally motivated as this participant said, *“It’s a culture thing, people do not want to change their culture”*. Certain of the participants felt very strongly that they would not like to try a new product containing pea protein, as this quote indicates, *“Sorry, nothing would convince me, I would not take it home”*. As indicated in Table 5.16, some of the participants were uncertain about the taste of the pea protein product and were, therefore, skeptical whether they would try it because they are familiar with certain products and are content with those products, *“I do not know because soya is something that one is sort of careful of. This is the most important thing I think people will look at. Is it going to be unpleasant?”*. Additionally, the participants mentioned that once consumers are familiar with a product, they will not change, as stated by this quote, *“If it’s new, they could not care; if they know Iwisa, the know Iwisa. That’s how stubborn and narrow minded they can become”*.

In a study done by Jensen (2011), the emphasis that retailers place on product loyalty is discussed. Jensen (2011) mentions that consumers who have a positive attitude towards a product or are truly brand loyal, will have enhance repeat purchasing approach. These consumers are also less prone to seek variety and switch brands. This situation is important to retailers because it is less likely that the consumers will postpone their purchases if the store is out of their favourite brand (Jensen, 2011).

Table 5.16 - Product Comfortable Consumer Approach

Sub-Category			Quote	
Non adventurous consumer approach	1		1	Is the process something they would like to advertise to promote the vegetable protein?
			2	To be brutally honest, I do not care whether it is ecologically friendly or not. The ecological part would not factor into it, because I'm talking about my kids wellbeing at this point. I can worry about the ecology later on; I just have to get my kids through it with the best amount of nutrition available.
			3	Sorry, nothing would convince me, I would not take it home.
			4	I think, I will not say it is more for the younger generation, but we are set in our ways.
			5	It's a culture thing, people do not want to change their culture
Sub-Category			Quote	
Product familiar consumer approach	1		1	If it started up with a decent brand name, then it might be looked at.
			2	But if you put it in a market where they just consume; consumers - food for the masses; they could not be bothered.
			3	Yes I would want to try it because it's got something different; what is it adding to my diet? At the same time, like pasta has been doing me fine all this time, so I can give it a pass.
			4	I do not know because soya is something that one is sort of careful of. This is the most important thing I think people will look at. Is it going to be unpleasant?
			5	If it's new, they could not care; if they know Iwisa, the know Iwisa. That's how stubborn and narrow minded they can become.

Category 4 Favourable influencing factors approach as presented by Figure 5.19.

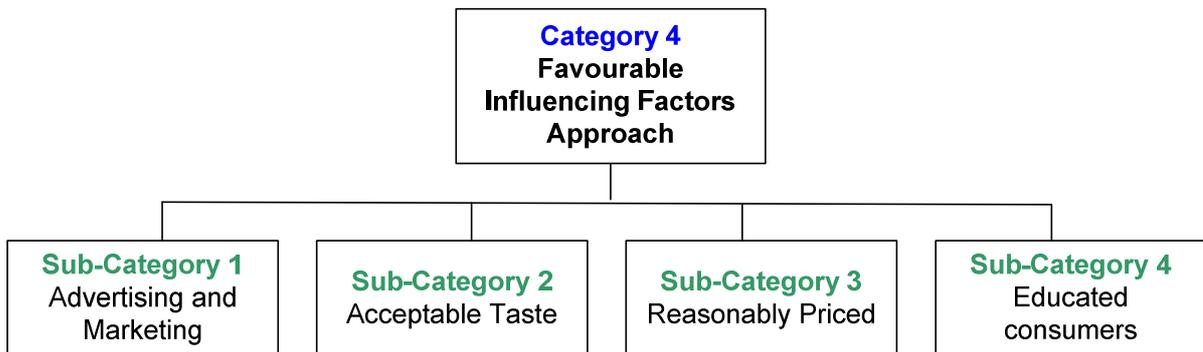


Figure 5.19 Favourable influencing factors approaches towards products containing pea protein

Figure 5.19 clearly indicates that although some of participants were skeptical whether they would try a product containing pea protein, a couple of influencing factors emerged that might sway the consumer's purchasing decision. These factors, as indicated by Table 5.17, included advertising and marketing strategies. If the advertising and marketing strategy is effectively directed, *"I think if it was well marketed, people will take it"* and *"You know that your target market is people that read, that are conscious about what they consume, that want to improve their diets and their life style; then yes, it would be an issue"*. It is also very important that the product taste is acceptable, as indicated in Table 5.17, *"I think from looking at it, it's got to be attractive or else it's got to be hidden so that you do not see it at all"* and *"The taste. As long as it's tasteful and not juck and does not make you fat, then yes"*. Furthermore the products should also be reasonably priced, as presented in Table 5.17, *"Obviously things like price"*.

The participants furthermore felt that they needed to be educated and informed, as pointed out in Table 5.17, about the new product as this quote states, *"I think the education should start with informing people what it is and then they will recognise it in a product; they would definitely go for it"* and *"If I do not know what pea protein is, why I would not be interested at all. There should be programmes educating people on that"*. The participants continued that education is important, however, they recognized that it is a process, as stated by these participants, *"It's an education process; just like anything else you put on the market; it's an education process"* and *"It boils down to education. Like the education process will be key, because then it's something to give the people to think about"*.

As mentioned by the participants, it is important for the advertising and marketing to be effectively direct. Therefore, as mentioned by Maslowska, Smit and Van den Putte (2013), advertising should be tailored so that consumers are individually targeted by matching messages to their personal information or preferences. Kumar and Patra (2012) continue that the right advertising message should be delivered to the right audience, using the right media vehicle to deliver the message. Once again, although the marketing and advertising will catch the consumer's attention and might convince them to try the product, the consumers will expect the product to taste good. Therefore, with the focus on the pea protein, where the flavour has been a problem in the past, but which most suppliers have now solved and claiming to have clean flavour profiles (Daniells, 2013), it is extremely important that the product offered to the consumer has an acceptable taste profile. Silayoi and Speece (2007), furthermore, indicate that consumers are looking for significant information on the product, whether it is on the packaging or advertising, but they want to know more about a product before they make a purchasing decision.

Table 5.17 - Favourable influencing factors approach

Sub-Category	Quote	
Advertising and Marketing	1	Like a flyer on the shelf that quickly explains what pea protein is. Then I definitely will try it.
	2	They also need to start talking about it in magazines and those things; it's relevant to my subject and my children's health.
	3	And also the "Baba and Kleuter" and baby magazines
	4	I think if it was well marketed, people will take it.
	5	You know that your target market is people that read, that are conscious about what they consume, that want to improve their diets and their life style; then yes, it would be an issue.
	6	You do not know about a new product that is on the market; now that we know about it, we will look out for it.
Sub-Category	Quote	
Acceptable Taste	1	As long as he enjoys it and it is palatable
	2	And will it taste better than soy protein?
	3	Ja, tofu and all those stuff. It's like eating rubber
	4	The taste. As long as it's tasteful and not juck and does not make you fat, then yes.
	5	I think from looking at it, it's got to be attractive or else it's got to be hidden so that you do not see it at all.
Sub-Category	Quote	
Reasonably Priced	1	Obviously things like price
	2	So, obviously things like price, protein.

Sub-Category	Quote
Educated consumers	1 I think the education should start with informing people what it is and then they will recognise it in a product; they would definitely go for it.
	2 That sounds interesting. Maybe read about it, even if I do not buy it. Maybe it will tickle me and if I see an article.
	3 I would want to know more, before I buy something. What it is? Where does it come from? What does it do? All the information.
	4 If I do not know what pea protein is why I would not be interested at all. There should be programmes educating people on that.
	5 If I knew what pea protein is, then I would try it.
	6 It's an education process; just like anything else you put on the market; it's an education process.
	7 It boils down to education. Like the education process will be key, because then it's something to give the people to think about.

5.4.2 Findings of the participant's attitude towards new food products containing pea protein in terms of the perceived price

The second question that was asked in terms of the acceptability of new food products containing pea protein, specifically in terms of the perceived price of the product was stated as follows: ***“Would the price make a difference or if you know that protein is good for you; will you be prepared to pay a little more for it? How important do you think the price would be if a product contains pea protein?”*** Two categories emerged that best describe the acceptability of new food products containing pea protein, specifically in terms of the perceived price of the product. The first category to be discussed is that of a comparative product behaviour that strongly emerged, with another category related to new product suspicions. From the comparative product behaviour category, two sub-categories emerged namely perceived added value and willingness to pay more, as indicated in Figure 5.20. The education of consumers was the sub-category which appeared from the category related to new product suspicions, as presented by Figure 5.21.

Category 1 – Comparative product behaviour as presented by Figure 5.20.

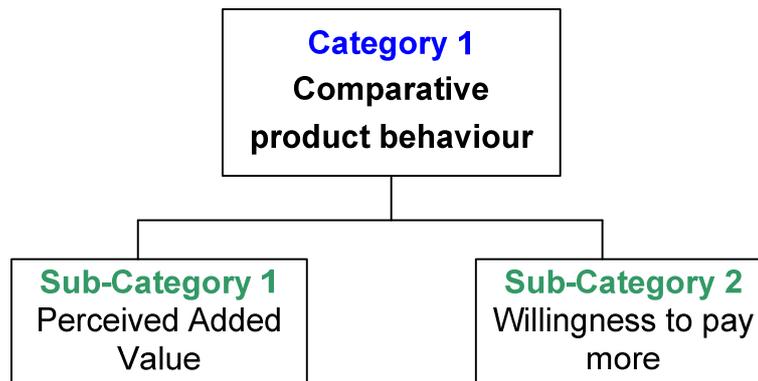


Figure 5.20 Comparative product behaviour towards products containing pea protein

The first category that emerged from the qualitative findings relating to the perceived price of a product, was comparative product behaviour (see Figure 5.20) which indicates that when consumers consider different products, they will compare the price and other attributes of two or more products and decide, in their opinion, which product offers them value for money. Specific sub-categories emerged from the comparative product behaviour category that describes the way in which this category was constructed. Firstly the participants' comparative product behaviour was characteristic of very specific ideas as to the perceived added value of a product, as indicated in Table 5.18, *"I would be willing to pay a bit more for it because of the other value"* and *"I would pay more for this, if it worked out, because it is a natural product versus others that are not, that are synthetic"*. According to Table 5.18, the participants further indicated that the comparative product behaviour includes a perceived added value to the product containing pea protein and, therefore, they would be willing to spend a little more, as long as it stays within the budget, *"If I'm going to benefit more than the one I used to use, I would consider the price, but it still has to stay within budget"*. There was also a perceived willingness to pay a slightly higher price should the product fulfill the participants' expectations about the specific product. The participants were saying that, *"If it's a rand or two then I would definitely consider it"* and *"For me if it fulfills the things that I need and what I prefer and what I would like. Even if it's five rand more. It's one of those things that if you like something you're bound to pay a little extra for it and if you're not interested or it does the function that is there; you will sacrifice on price"*.

According to Silayoi and Speece (2004), consumers are often willing to pay slightly higher prices for a more enhanced product and in that way indicating a desire for better quality products. Espejel *et al.* (2007) discuss the difference between perceived and experienced

product quality. They state that should the consumer’s perceived quality of a product be more or equal to what they expected, they will be satisfied. If it is less, they will remain unsatisfied. The satisfied consumer will purchase the product again and they will recommend it to others. They will also then be willing to pay more for the product. According to Kemp and Bui (2011), consumers in the USA are willing to pay up to 20% more for products that are perceived as being healthy because it is perceived as optimising their health and well-being.

Table 5.18 - Comparative product behaviour

Sub-Category	Quote
Perceived Added Value	1 I would pay more for this, if it worked out, because it is a natural product versus others that are not, that are synthetic
	2 I would be willing to pay a bit more for it because of the other value.
	3 If I'm going to benefit more than the one I used to use, I would consider the price, but it still has to stay within budget.
Sub-Category	Quote
Willingness to pay more	1 Price is not really a big thing for me.
	2 For me if it fulfills the things that I need and what I prefer and what I would like. Even if it's five rand more. It's one of those things that if you like something you're bound to pay a little extra for it and if you're not interested or it does the function that is there; you will sacrifice on price.
	3 If it's a rand or two then I would definitely consider it.
	4 To find an affordable protein that is not meat, to replace your protein.

Category 2 – New product suspicions as presented by Figure 5.21.

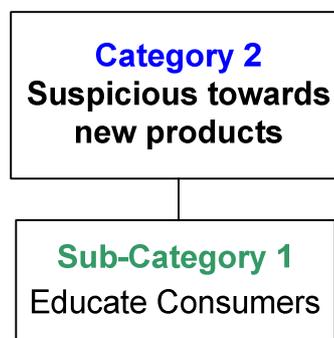


Figure 5.21 Consumers suspicions towards new products containing pea protein

Figure 5.21 indicates the second category that emerged was consumers that are suspicious towards new product. Certain participants had concerns towards the new product and felt they would query this product and would need to be educated regarding the product attributes before they can make an informed decision, as indicated in Table 5.19, *“Having a bit more information about it may be a deciding factor if maybe it is more expensive”*. Since this is a new product, which they do not know, their initial reaction would be, *“If it had to come in the market suddenly, I'd sort of query it and say, where does it come from, it's a new thing”*.

It is important for today's companies to reduce consumer's uncertainty regarding product characteristics and performance (Markopoulos & Clemons, 2013). The reason for this is because consumers are using information to guide the purchasing decisions by being more informed beforehand (Markopoulos & Clemons, 2013). According to Markopoulos and Clemons (2013), companies can use various methods to reduce consumer's uncertainty through thorough product testing, better organising and presenting of product information, for instance on the product packaging and possibly to provide free samples. Once the consumer's uncertainty has been addressed, they might be more willing to assess a new product.

Table 5.19 - Suspicious towards new products

Sub-Category	Quote
Educate Consumers	1 If it had to come in the market suddenly, I'd sort of query it and say, where does it come from, it's a new thing.
	2 Yes, "pea protein" does not make any sense to me.
	3 Sometimes the name is in English and you look for something else. That is why I say, the language also makes a difference sometimes.
	4 Having a bit more information about it. May be a deciding factor if maybe it is more expensive.

5.4.3 Findings of the participant's attitude towards new food products containing pea protein in terms of the perceived packaging attributes of new food products

The third question that was asked of the participants was regarding new product acceptability of products containing pea protein in terms of the packaging and what they would find acceptable on the packaging? The question was stated as follows: ***“Specifically also on the packaging and branding; what information would you like to see on the packaging?”*** From the findings one main category emerged which is the

packaging attributes and the participants felt that the packaging attributes are comprised of four different sub-categories. These sub-categories touched on different aspects of packaging that are important to the consumer. The sub-categories included a practical type of packaging, attractive packaging design, visible nutritional information and additional information regarding the product.

Category 1 - Packaging Attributes as presented by Figure 5.22.

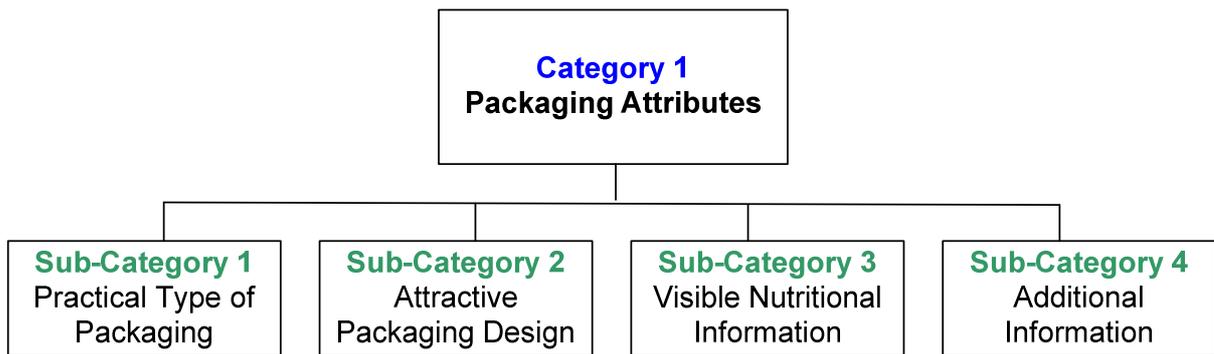


Figure 5.22 Packaging attributes required for a product containing pea protein

There are very specific attributes regarding the packaging of a new product that the participants were looking for. Figure 5.22 indicates the first sub-category that emerged was a practical type of packaging, as mentioned in Table 5.20, *“Do not put it into a packet like the cake flour and sugar. Everything is always covered while trying to open the bag”*. The participants also felt that the packaging should be attractive, as indicated by Table 5.20, it should catch your eye and be different, and *“It needs to be a product, say a protein bar, needs to look appealing. And different”*. The colour of the packaging is also very important as this will draw the consumer’s attention to this new product, as quoted by these participants, *“Then of course the colours”* and *“I would maybe say colour”*. As stated in Table 5.20, the participants felt that the nutritional information regarding the product should be more visible, as mentioned by this participant, *“For example where you normally have the nutritional table on the side of the cereal box specifically. Put it on the top part, where your eyes focus first”*. For a couple of the participants, the information was not all that important and felt that as long as they have additional information, for instance if the products tasted good, they would try it, like this participant stated, *“But the thing is, not all the time that everybody reads the ingredient statement. So even if you add it, as long as it tastes the same, I will consume it”* and also *“As long as it looks good; we’ll take it”*

Regarding the technology of the packaging Silayoi and Speece (2004) state that it is necessary for new products to be more efficiently produced, packaged for a longer shelf life, environmentally friendly, nutritionally responsive to each of the emerging segments of society and meet maximum food safety requirements. Silayoi and Speece (2004) continue by referring to a survey that was done where 90 percent of the participants agreed that the nutritional table on the packaging should all look the same (Silayoi & Speece, 2004). This would make it easier for the consumers to understand quickly. According to the new Labeling regulations in South Africa, there is a prescribed format for the nutritional table for packaging in South Africa. The aim is, therefore, to make it easier for consumers to understand the information quickly, because different products from different manufacturers will all have identical nutritional tables on the packaging.

Table 5.20 - Packaging Attributes

Sub-Category		Quote
Practical Type of Packaging	1	Depending on also the packaging and what kind of product it is.
	2	Do not put it into a packet like the cake flour and sugar. Everything is always covered while trying to open the bag.
Sub-Category		Quote
Attractive Packaging Design	1	Then of course the colours,
	2	It needs to be a product, say a protein bar, needs to look appealing. And different.
	3	The other thing is recipes. If you see something new and someone gives you a recipe to try it out; it's also a way of convincing you to buy something.
	4	I would maybe say colour.
Sub-Category		Quote
Visible Nutritional Information	1	For example where you normally have the nutritional table on the side of the cereal box specifically. Put it on the top part, where your eyes focus first.
	2	The amount of protein it will replace; you would like to have a protein as a snack, especially for diabetics.
Sub-Category		Quote
Additional Information	1	But the thing is, not all the time that everybody reads the ingredient statement. So even if you add it, as long as it tastes the same, I will consume it.
	2	You do not read the fine print.
	3	As long as it looks good; we'll take it.

5.4.4 Findings of the participant’s attitude in terms of consumer education and knowledge of new food products containing pea protein

The fourth question that was asked of the participants was regarding new product education. The question was asked as follows: “*What type of information would you like to have about a product and how important do you feel education will be when launching a new product?*” Three main categories emerged from the data which describe the participants’ need for product knowledge, product information and the fact that sometimes a person centered behavioural influence has a greater effect on the consumer decision making process than any research a person can do. The participants indicated that product knowledge was the most important aspect of the information they require. The product knowledge category was further divided into five sub-categories that related to the type of product knowledge required by the consumer of a new food product containing pea protein. The sub-categories include, related health benefits of the product, wholesomeness of the product (which describes a product that is generally beneficial and good for you), the natural origin of the product, taste and allergens related to the product. Furthermore, the participants pointed out that additional information regarding a product containing pea protein will be helpful and enhance their understanding of the product. Lastly from the person centered behavioural influence it is indicated that consumers’ decision to purchase is influenced more by other people’s opinions than the product information itself.

Category 1 – Product Knowledge as presented by Figure 5.23.

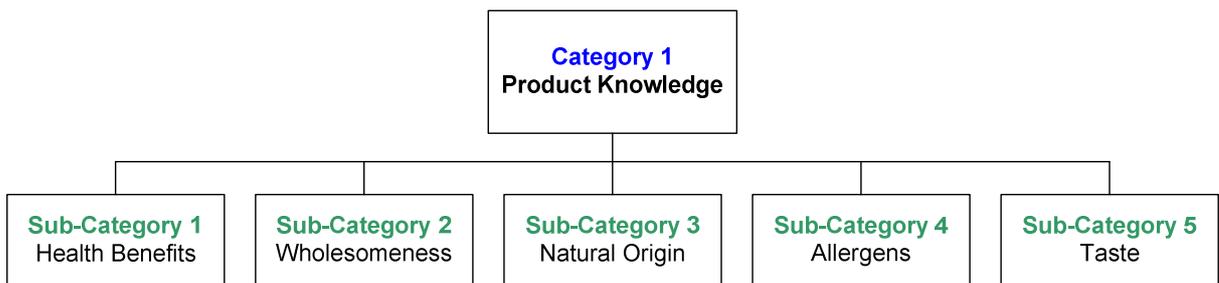


Figure 5.23 Product knowledge required of products containing pea protein

The participants reiterated the importance of product knowledge, as indicated in Figure 5.23, before they would take any view on the new product containing pea protein. The participants stated that they would like to know what the health benefits of this new type of product are, as these quotes in Table 5.21 indicate, “*Health is the most important thing*” and “*If there is a product that claims to have a health benefit. Maybe this is good; we*

should give this a try. So I think definitely something with health benefits". The participants also mentioned the importance of a healthy diet when a person is active, as these participants quoted, *"Same with me, also health. If you're gymming and stuff; you want to look for the bars and strict eating plan"* and *"It must also be the right amount that you need. With protein, if you're not active, you're just going to get fat"*. Additionally, the participants would also like to know whether the new product containing pea protein is nutritious as mentioned in Table 5.21, *"Now I would look at it, but ultimately the nutritional value"*.

Furthermore, the wholesomeness of the product, as mentioned in Table 5.21, was pointed out because the participants felt that so many products are synthetic and lacking wholesomeness. This participant said that, *"So many things are synthetic nowadays and everything is made via this process and that process, it's not wholesome anymore. I think if you're punting the wholesomeness"*, therefore, indicating the importance of products that are good for you. The participants also indicated that it is important for the product be of natural origin, as presented in Table 5.21, *"That it comes from a natural origin. I think lots of people are going the green route"* and *"So for me I try to stick to natural products and as little chemicals as possible"*. Furthermore, the significance of the allergen free status of pea protein was highlighted by the participants, as stated in Table 5.21, *"Because allergies are important, a lot of people suffer from allergies"*. Lastly the taste of the product was mentioned because the participants felt that it does not matter how healthy a product is, if it does not have a good taste, they would not try it, as mentioned in Table 5.21, *"But there's yummy things that are healthy, inside something that is also healthy. Unfortunately, it can be as nutritious as you want it to be, but if it does not taste nice"* and *"He's not going to eat it if he does not like it"*.

During recent years certain changes in demographic structures, especially the increase in the amount of women working outside the home, has forced the product suppliers to change their marketing practices. The consumers' health concerns have multiplied, making it a main food choice (Barrena & Sanchez, 2010). Barrena and Sanchez (2010) continue by saying that the so-called functional foods are currently one of the most active segments of the food industry in terms of product development.

Table 5.21 - Product Knowledge

Sub-Category		Quote
Health Benefits	1	If there is a product that claims to have a health benefit. Maybe this is good; we should give this a try. So I think definitely something with health benefits.
	2	Yes, also health benefits.
	3	Same with me, also health. If you're gymming and stuff; you want to look for the bars and strict eating plan.
	4	How it would affect your health.
	5	How good will it be for you? Can you use it instead of meat?
	6	Is it healthy?
	7	Now I would look at it, but ultimately the nutritional value
	8	If you talk about a healthy protein, even people who are vegetarians, for them that's an option.
	9	What is the alternative for your normal vegetarian protein? Tofu, soya?
	10	It must also be the right amount that you need. With protein, if you're not active, you're just going to get fat.
	11	Health is the most important thing.
	12	That's the big thing these days - its healthy stuff.
Sub-Category		Quote
Wholesomeness	1	So many things are synthetic nowadays and everything is made via this process and that process, it's not wholesome anymore. I think if you're punting the wholesomeness.
	2	What kind of replacement it is for meat protein? Can you substitute it for a meat protein?
Sub-Category		Quote
Natural Origin	1	That it comes from a natural origin. I think lots of people are going the green route.
	2	So for me I try to stick to natural products and as little chemicals as possible.
	3	Why you would use it instead of soya?

Sub-Category	Quote	
Allergens	1	We do not have anybody that is allergic. But I think once you start with someone in your house that has a food allergy, dairy and nuts and whatever. It influences everything
	2	The moment you have a problem, you look more for these things. Replacements etc.
	3	Would catch my eye and specifically the allergen part
	4	For somebody like me who is allergic to fish and shellfish, something that I can add to food, or that I can have cereal or whatever, that gives me healthy protein.
	5	When your kids have allergies.
	6	Because allergies are important, a lot of people suffer from allergies.
	7	I will look out for a product that contains a pea protein because it does not have an allergic effect.
	8	Now with my son, he is allergic to soya.
	9	Because I like maize. Because my youngest daughter, son and I are allergic to wheat germ, we would rather try maize instead of wheat (that is why I tried the new product).
Sub-Category	Quote	
Taste	1	But there's yummy things that are healthy, inside something that is also healthy. Unfortunately, it can be as nutritious as you want it to be, but if it does not taste nice.
	2	He's not going to eat it if he does not like it.
	3	And if it tastes ok.

Category 2 – Product information as presented by Figure 5.24.

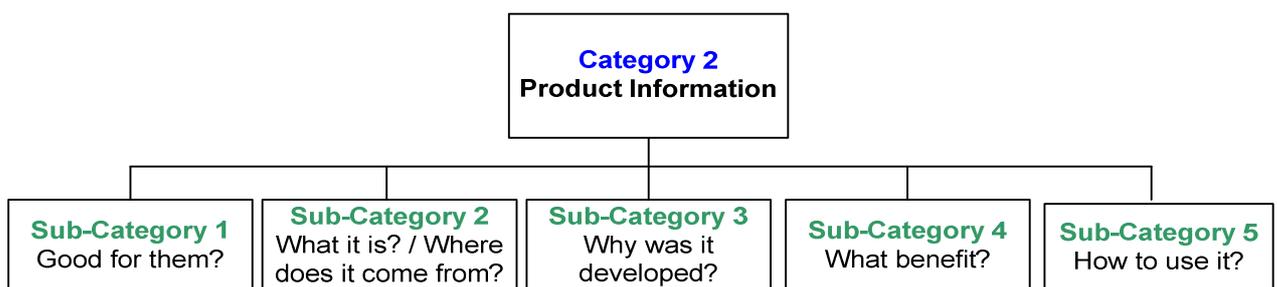


Figure 5.24 Product information required of products containing pea protein

The participants were of the opinion, that because the pea protein is such a new and foreign concept to them, they would need more information about the product before they can make an informed decision. As Figure 5.24 indicates, the participants had many questions which they would like answered before considering the product. As mentioned

in Table 5.22, their questions include whether the product is good for them, *“What it is and what it consists of and what it's going to cost me. Where I can find it and if it's good for you”*. The participants also wanted to know what pea protein was and where it comes from, because they felt that if they were more educated about the product, they would be able to determine the product's worth, as this participant states, *“Having a bit more information about it maybe a deciding factor, if maybe it is more expensive”* and *“Educate people first so that they know about it and what it's worth is”*. The participants continued, as indicated in Table 5.22, that they would like to know why pea protein was developed, *“What it is and all the things: Why was it developed? Where does it come from? What does it do? What benefits?”* and what the benefits of a pea protein product will be, *“Why is this better than the other products already on the shelf?”* Lastly, the participants had more practical concerns as to the use of the product, *“How to use it?”*

An increased number of consumers use labeling information to assist in implementation of a higher quality diet, according to Colby *et al.* (2010). Unfortunately, according to Colby *et al.* (2010), the consumers who use the labeling information for their higher levels of healthful eating behaviours or their weight loss goals cannot interpret the labeling information correctly. It is, therefore, very important that the consumers have additional product information to assist in their decision making process.

Table 5.22 - Product information

Sub-Category		Quote
Good for them?	1	I would just try it to find out whether it makes a difference, does it taste different.
	2	What it is and what it consists of and what it's going to cost me. Where I can find it and if it's good for you.
Sub-Category		Quote
What it is? / Where does it come from?	1	Having a bit more information about it maybe a deciding factor, if maybe it is more expensive
	2	Educate people first so that they know about it and what its worth is.
Sub-Category		Quote
Why was it developed?	1	What it is and all the things: Why was it developed? Where does it come from? What does it do? What benefits?
Sub-Category		Quote
What benefit?	1	And then the comparisons. Why this and not that. Why should I buy this?
	2	Why is this better than the other products already on the shelf?
Sub-Category		Quote
How to use it?	1	How to use it?

Category 3 – Person Centered Behavioural Influence as presented by Figure 5.25.

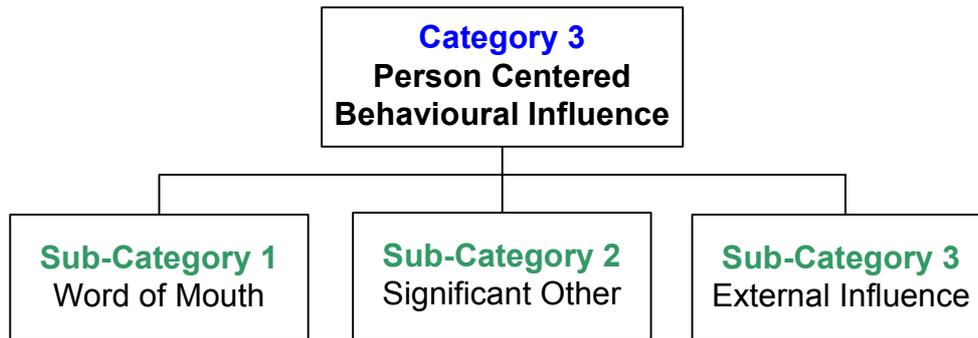


Figure 5.25 Person centered behavioural influence towards products containing pea protein

Figure 5.25 indicates the person centered behavioural influence that emerged as a category from the findings. This was mainly because certain participants felt that they would rather contact a person that is close to them and that they hold in high regard, to find out their opinion about a certain product, than doing research on the product themselves. There is, therefore, a certain element of word-of-mouth which can be considered more effective and influential on a person's decision, as described in Table 5.23, *"Word of mouth makes it more effective because now you know someone who has tried it and they enjoyed it"* and also *"I tell them about stuff and they try it"*. The participants, furthermore, felt strongly about the sway that a significant other or an important person in their lives, have on their opinions as these quotes state, *"And as I mentioned, one of my friends, she's very much the same as me, we've got the same interest in food and then it's important to hear from them"* and *"I think sometimes if it's somebody whom you think highly of"*. Additionally the participants stated that people, who have a strong influence in their lives, would have a far greater effect on the decision making than any other external influence, as this participant state, *"It's true, I picked up a lot of stuff from my aunt"*.

The participants, furthermore, mentioned other external influences that could influence their acceptability or even their interest in a new product containing pea protein. Although these influences were mentioned to a far lesser degree, it is still something that will influence their decision making process. The participants felt that if pea protein was included in a particular recipe, for instance in a magazine and they would like to make this recipe, then *"Yes, if you need it for that particular recipe. You're going to go for it"*. Alternatively if it fits into the planned menu for the week, *"I'll try it first. If I know that I can use it in my food that week"* they would search for the product in the local supermarket.

A similar concept to a person centered behavioural influence is discussed by Lysonski and Durvasula (2013) where consumer susceptibility is a trait that certain consumers have who are open to being influenced by others. This concept of consumer susceptibility is defined by Lysonski and Durvasula (2013) as the need to identify or increase one's image with significant others through the willingness to adapt to the expectations from others regarding purchase decisions.

Table 5.23 - Person Centered Behavioural Influence

Sub-Category		Quote
Word of Mouth	1	Word of mouth makes it more effective because now you know someone who has tried it and they enjoyed it.
	2	I tell them about stuff and they try it.
Sub-Category		Quote
Significant Others	1	I think sometimes if it's somebody whom you think highly of.
	2	It's true; I picked up a lot of stuff from my aunt.
	3	If I phone my friend and say "did you see what is at PnP?" and she says it's good, I'll buy it. Because she bakes and she knows food.
	4	And as I mentioned, one of my friends, she's very much the same as me, we've got the same interest in food and then it's important to hear from them.
Sub-Category		Quote
External Influence	1	I'll try it first. If I know that I can use it in my food that week.
	2	Yes, if you need it for that particular recipe. You're going to go for it.

5.4.5 Findings of the participant's attitude towards new food products containing pea protein in terms of the perceived marketing of the product

The fifth question was regarding the marketing of a product and typically where the participants would look for further information on the new product. The question was stated as follows: ***"The marketing of the product, where would you look for the product or notice it or where will you research a new product for information?"*** Three main categories emerged from the information. The main category which emerged refers to the marketing strategies in which participants mentioned the different strategies they would consider useful when marketing a new product. Additionally, two more categories emerged which included a target marketing strategy where the product was specifically aimed at a specific consumer group and product market strategy where the marketing was specifically aimed at pea protein.

This question was mainly used to determine where and how the participant would come in contact with a new product.

Category 1 – Marketing Strategies as presented by Figure 5.26.

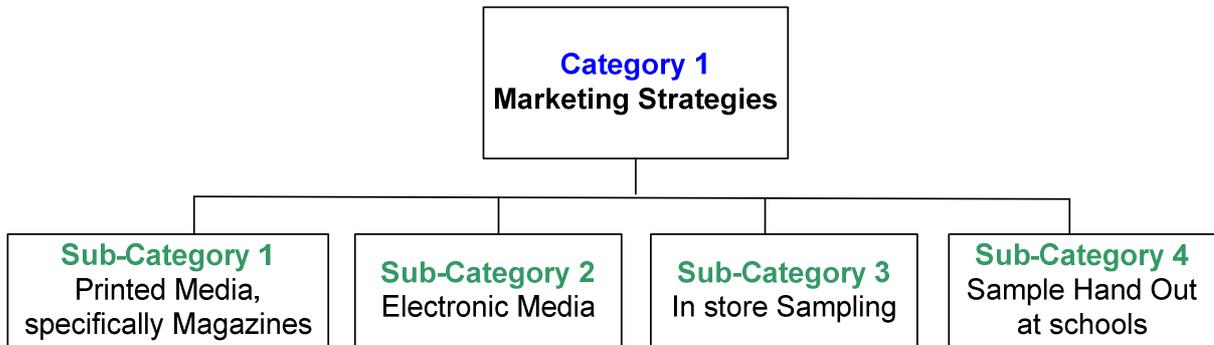


Figure 5.26 Marketing strategies to increase the acceptability of a product containing pea protein

Where the marketing strategies for pea protein are concerned, Figure 5.26 indicates that participants identified one dominant strategy they would prefer for the marketing of pea protein and that was through the printed media and more specifically through the use of magazines as this allowed them to read about the new pea protein product as indicated by these quotes from Table 5.25, *“If I read something in a magazine that’s where it triggers me”* and *“Someone must give me a flyer or there must be an article somewhere in a magazine or a newspaper or something that will come to me that I get in my hand and I will read it and say: “Ok this sounds interesting, we can try this”*. Other marketing strategies less mentioned for the marketing of pea protein were electronic media, in store sampling and sample handouts at schools. According to Table 5.25, the Internet was the more prominent electronic source preferred by the participants as these quotes illustrates *“I would go onto the internet to read more about it, it’s more accessible. Where exactly are you going to find it in the newspaper?”* and *“I definitely will (research it). I will Google it”* as this source allowed the participant to read up about the pea protein product. Although in store samples were also mentioned less often, as indicated in Table 5.24, participants still felt they would then be able to determine if they liked it or not as the quote indicates: *“You can actually display it somewhere so you can taste and see what it’s like”*. Particularly where marketing strategies for pea protein are concerned, participants suggested that sample handouts of pea protein would be effective at schools as this would be successful marketing channels to use as this quote indicates, *“A little snack bar sample and stapled a little card that tells you what pea protein is and handed it out at schools to the kids. It just speaks to me of involvement; investment”*.

As mentioned, today's consumers are using information to guide their purchase decision (Markopoulos & Clemons, 2013), by doing online research about a new product before a decision is made. Furthermore, although the participants mentioned that they would prefer to test a sample in-store or that they would like to see a handout at school; this might not be a good strategy for the manufacturer. The cost of samples is quite high and the company might not get their return on investment (Markopoulos & Clemons, 2013). However, there are other marketing strategies to follow for instance to advertise on television because a different audience segment will be reached (Markopoulos & Clemons, 2013). Kumar and Patra (2012) continue that it is important to deliver the right marketing message to the right audience using the right media vehicle, in order to generate the response in the consumers mind. Furthermore, it is generally found the all the media like electronic, print and outdoor media are increasing their exposure level in a wider sense to reach more consumers on a regular basis (Kumar & Patra, 2012)

Table 5.24 - Marketing Strategies

Sub-Category		Quote	
Printed Media, specifically Magazines	1	Magazines	
	2	If I read something in a magazine that's where it triggers me.	
	3	Or the newspaper. So if there is an article you would read it and then look for it.	
	4	Most likely for me to read in a magazine.	
	5	Yes to find out what it is. Unless you read it in a magazine or newspaper.	
	6	Maybe you saw it at the doctor's.	
	7	Someone must give me a flyer or there must be an article somewhere in a magazine or a newspaper or something that will come to me that I get in my hand and I will read it and say: "Ok this sounds interesting, we can try this.	
Sub-Category		Quote	
Electronic Media	1	On the internet and health shops.	
	2	I would go onto the internet to read more about it, it's more accessible. Where exactly are you going to find it in the newspaper?	
	3	Or on the radio.	
	4	I definitely will (research it). I will Google it.	
Sub-Category		Quote	
In store Sampling	1	You can actually display it somewhere so you can taste and see what it's like.	
	2	I'll go straight to the shop. It's there, consume it and it's not bad.	

Sub-Category		Quote
Sample Hand Out at schools	1	A little snack bar sample and stapled a little card that tells you what pea protein is and handed it out at schools to the kids. It just speaks to me of involvement; investment.
	2	Schools are a huge marketing tool.
	3	School.

Category 2 – Target marketing strategy as presented by Figure 5.27.



Figure 5.27 Target marketing strategies to increase the acceptability of products containing pea protein

The participants identified the need to market the new pea protein product with a particular target marketing orientation strategy (see Figure 5.27), particularly to children, therefore, with a specific consumer group in mind. The argument participants offered as to why children in particular should be targeted is because they have a big influence on the food purchases parents make as these quotes in Table 5.25 support, “I think it’s almost controlled by the kids”, “You mainly shop for children, what they eat and what they do not eat” and “Huge if they are with you. I will look at what is healthy”. However, parents still felt they had the final decision as to whether they would in fact purchase the product on the child’s demand as these quotes state “Very much so. Certain things, he chooses, but also again I will have the final say”, “Or what I want to buy because I know it is better? What looks attractive to them? Because if something catches their eye, I will look at it. But if its rubbish, I’ll put it back” and “Certain things he chooses, but also again, I will have the final say”. Participants, furthermore, indicated that advertising of pea protein to a specific consumer group as this quote, presented in Table 5.25 suggests, “It boils down to your target market” and “It will also depend on who you will introduce it to”, should indeed be specific and convey a particular message.

Once again the concept of tailored advertising, as discussed by Maslowska *et al.* (2013) is important. Maslowska *et al.* (2013) also mentioned that due to technological developments, tailored advertising has been adapted to adopt the online advertising strategies to include different domains, including email marketing, online shopping and health recommendations. These avenues can be developed to target a specific audience or target market for a specific product.

Table 5.25 - Target marketing strategy

Sub-Category		Quote
Children Specific	1	Very much so. Certain things, he chooses, but also again I will have the final say.
	2	On a scale of one to ten, I would say eight. I'll consider buying it, but it does not mean that I will buy it. I would not buy the product because they told me to.
	3	Or what I want to buy because I know it is better? What looks attractive to them? Because if something catches their eye, I will look at it. But if its crap, I'll put it back.
	4	Huge. If they're with you, you're the ones that look around and notice different things.
	5	Huge if they are with you. I will look at what is healthy
	6	But it must be something that catches their eye. The colour or a picture on it or whatever. Or something they see on TV. They know the ads by heart.
	7	What I want to buy because I know better.
	8	I'm at a stage now where I give my son the opportunity to choose, especially because he has breakfast at home. Certain things he chooses, but also again, I will have the final say.
	9	I think it's almost controlled by the kids.
	10	You keep thinking what they said. You know they do not like this and you want them to like it.
	11	They always like something new because the TV says it's nice
	12	You mainly shop for children, what they eat and what they do not eat.
Sub-Category		Quote
Consumer group specific	1	It boils down to your target market.
	2	Will it be beneficial to vegetarians? That is also a market where you can try it.
	3	It will also depend on who you will introduce it to.

Category 3 – Product Marketing Strategy as presented by Figure 5.28.

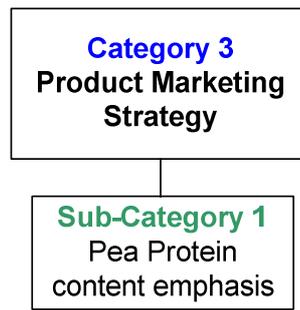


Figure 5.28 Product marketing strategy to increase the acceptability of products containing pea protein

Figure 5.28 indicates that participants were of the opinion that a specific product marketing strategy should also be followed which allowed for the emphasis to be placed on the pea protein presence in the new product. According to the quotes in Table 5.26, the participants suggested that this would draw their attention to the fact that the product contains pea protein, *“I do not think that I would really actually even know, unless it’s advertised that this product contains pea protein”* and also *“And it says pea protein in bold? Not in the little bit at the back? Then I would try it, probably yes”*.

Once again the participants are requesting further information on the product in a format that is easily accessible and understandable. Silayoi and Speece (2004) mention that the package standing on the shelf in the retail store, affects the consumer process and, therefore, the package design must insure that the consumer’s response is favorable.

Table 5.26 - Product Marketing Strategy

Sub-Category	Quote
Pea Protein content emphasis	1 I do not think that I would really actually even know, unless it’s advertised that this product contains pea protein.
	2 And it says pea protein in bold? Not in the little bit at the back? Then I would try it, probably yes.
	3 But if it’s the kind of product that I use, this is a big advertising campaign, it contains pea protein.
	4 Let’s say you have a new cereal and you advertise it and it says with added pea protein, I would look at it and something like that.
	5 Quick marketing, for example the Oreo adds. For me it was a very good campaign, in terms of it created awareness.
	6 When the Milo came out, I did buy it, because my son loves it. I did buy it because of that.

5.4.6 Findings of the participant’s attitude towards new food products containing pea protein in terms of the perceived branding importance of a product

The final question regarding the acceptability of pea protein as a protein substitute was regarding the branding of a specific product. The following question was asked: **“If it is a wellknown company, with a specific brand which launches a new product, would that convince you to buy that product?”** Two categories emerged from the data that once again showed loyal consumer behaviour and adventurous consumer behaviour. This question was asked in order to determine the participants’ attitude towards the branding of a product and whether they would feel more comfortable buying an unknown pea protein product when it was launched by a well-known company with an established brand or whether it would not have an influence on the purchasing decision. The sub categories which emerged were an indication that the loyalty of the consumer was in fact pointing toward brand loyalty more than any other form of loyalty. Furthermore, the sub category that emerged that explained the nature of the adventurous consumer was in fact indicating that these consumers are not loyal to the brand but would rather try anything new, irrespective of which brand it belongs to.

Category 1 – Loyal consumers as presented by Figure 5.29.



Figure 5.29 Brand loyal customer behaviour towards existing brands

Figure 5.29 clearly indicates that many of the participants were of the opinion that if a well-established brand introduced a new and unknown pea protein product that it would lend more credibility to that product, as indicated by this quote Table 5.27, *“Yes, I would be more inclined. You would, on past history; if they bring out a good brand. I am somewhat brand conscious when it comes to certain things”*. Another participant indicated that they might not try the new product immediately, but will wait some time, and if the product is still available, they would purchase it, as this quote states, *“An unknown brand, it would*

take me much longer to mull it over in my head before deciding, you know what has been here for five/ six months on the shelf already, so let's give it a try". Furthermore, should a particular retail store, with which quality is associated, decide to launch a new pea protein product, the participants would be more open to look at the product, as the quotes in Table 5.27 suggest, "If a company like Woolworths started using, specifically pea protein in their products, I think that would probably also swing my decision to buy. Because of the perception that people have about Woolworths' quality" and "If it says Woolies have brought pea protein onto the shelves, I'm sold". Additionally, there are certain brand names that the participants have more faith in than the unnamed brands, as stated by these participants, "Because it's Royco and you always buy Royco and you are okay with the other Royco's you've had, you will say it should work" and "I would be more susceptible for example; naming names for example buy a cereal by Nestle with added protein than Piet's Puff Kernels. One of the more established companies".

Reast (2005) mentions that brand extensions, where existing brands are stretched to incorporate a different product class, are becoming increasingly popular. Although brand trust seems a logical influence on the appraisal and usage of brand extension activities, especially where there is an increase level of risk associated with a purchase (Reast, 2005). Therefore, for example, the well-established brand of Starbucks extended their range from coffee to ice cream and the consumers trusted the new products because of the brand associated with it (Reast, 2005). Therefore, as the participants mentioned, should a well-known brand launch an unfamiliar pea protein product, it will give the product a stronger name, but also instill more trust in the consumer.

Table 5.27 - Loyal consumer behaviour

Sub-Category		Quote
Credibility	1	Yes, I would be more inclined. You would, on past history; if they bring out a good brand. I am somewhat brand conscious when it comes to certain things.
	2	An unknown brand, it would take me much longer to mull it over in my head before deciding, you know what has been here for five/ six months on the shelf already, so let's give it a try.
Sub-Category		Quote
Trusted Retail Store	1	If a company like Woolworths started using, specifically pea protein in their products, I think that would probably also swing my decision to buy. Because of the perception that people have about Woolworths' quality.
	2	It's backed by Woolworths.
	3	If it says Woolies has brought pea protein onto the shelves, I'm sold.

Sub-Category	Quote
Brand Names	1 I would be more susceptible for example; naming names for example buy a cereal by Nestle with added protein than Piet's Puff Kernels. One of the more established companies.
	2 Because it's Royco and you always buy Royco and you are okay with the other Royco's you've had, you will say it should work.

Category 2 - Adventurous Consumer Behaviour as presented by Figure 5.30.

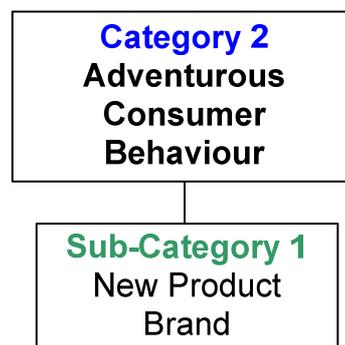


Figure 5.30 Adventurous consumer behaviour towards a new product brand

As mentioned and indicated in Figure 5.30, the adventurous consumer is not loyal to the brand but would rather try anything new, even if it is a completely new product brand. According to Table 5.28, there were a couple of participants who felt that they would try a new, unknown pea protein product regardless of the brand or the manufacturing company, as long as the advertising was done well and they were given enough information to make an informed decision, *“But again, sometimes you may try something new and if it works, you will buy it again”*. One participant mentioned, *“We found a new product; it's a Puccini product, but it's made from maize. And it's cheap and it's very nice”*, so although a product is completely unknown, does not mean that they will not try it, *“And on pea protein, it's a brand new thing. Of course you're going to look at it. Buy one thing perhaps with it and try it out”*.

The adventurous consumer has been described by Aroean (2012) as an innovative consumer. The author describes the innovative consumers as having a strong intention to buy a product at an early stage (when the product is new on the market), frequently buying the product and for certain types of products, will buy the upgrade as soon as it becomes available. Although it might be easy to make an assumption that innovative consumers will switch brands, Aroean (2012) found that this is not true. As long as the

innovative consumers are satisfied with their current brand, they will not switch brands, although they are still willing and eager to experience what other brands have to offer (Aroean, 2012).

Table 5.28 - Adventurous Consumer Behaviour

Sub-Category	Quote
New Product Brand	1 I will not say convince me. It gives it that credibility. It would give it that believability.
	2 But again, sometimes you may try something new and if it works, you will buy it again.
	3 And on pea protein, it's a brand new thing. Of course you're going to look at it. Buy one thing perhaps with it and try it out.
	4 We found a new product; it's a Puccini product, but it's made from maize. And it's cheap and it's very nice.

5.4.7 Findings of the participant's attitude towards new food products containing pea protein in terms of specific eating occasions

During the discussions regarding new products that contain pea protein, certain topics were raised and data emerged without any particular questioning. The participants started mentioning specific products they would like to see containing pea protein. This reflected a particular occasion when a new pea protein product should be consumed. Another category that emerged was particular of the convenience side a new product will result in.

Category 1 – Eating occasions as presented by Figure 5.31

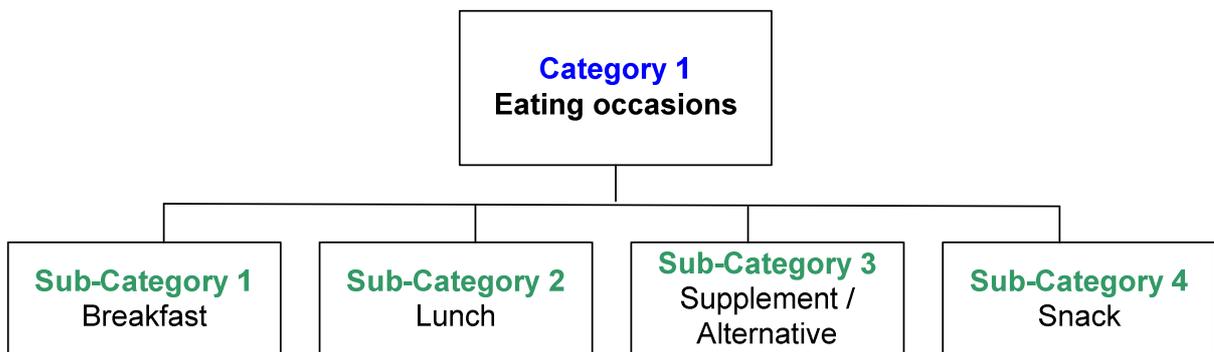


Figure 5.31 Eating occasions of pea protein products

Figure 5.31 clearly indicates the various eating occasions which emerged from the findings and the emphasis that the participants placed on the possibilities of new pea protein products. The participants felt that breakfast is a very important meal of the day. If

they could, therefore, include some protein, for instance, in their children's breakfast, the children would feel full for longer and not feel hungry so quickly, as these quotes from Table 5.29 indicate, *"Breakfast you know, especially if you have kids. You have to have a good breakfast and some protein somewhere and just cereal is not really enough"* and *"I would still say cereals. You know, because the higher the protein value in your breakfast, the longer it lasts"*. According to the quotes in Table 5.29, the participants also indicated that lunch is very important, particularly lunch boxes, *"The other thing is, something to put on bread. Something like a spread or a margarine"* and *"I think breakfast and lunch boxes. You are always looking for something to put in the lunch boxes"*. Another suggestion by the participants was a product like a biscuit, *"Something like Provitas or biscuits? Because that is the type of product you put in your lunch box. Like a savoury biscuit type thing"*.

Additionally, the participants felt that the pea protein could be used as a supplement in various products to increase the nutritional content of that product. As these quotes in Table 5.29 indicate, *"Snacks, soups, pasta, maize meal and a milk substitute"* and *"Would they put pea protein in bread as a supplement?"* and also *"It might be in bread, it might be in maize meal, it might be with rice, we do not know how it's going to be, but that would be the most important thing"*. Furthermore, due to the allergies that were discussed and the importance of the pea protein that is allergen free, some of the participants suggested that pea protein should be used as an alternative to milk or soya milk, as this quote indicates, *"But like with soya, I know that if you make coffee with soya milk, the last bit of the coffee, there's like a thick layer. So if a pea protein can be different than that, and it does not settle at the bottom, it would be nice"*

Lastly a fair amount of interest was shown by the participants in a pea protein product that could be eaten as a snack, as presented in Table 5.29, that is quick and convenient, as quoted by this participant, *"A snacky type of thing; you want something that is quick that you can grab in your hand or that will be quick – it does not need a lot of time preparing"*. Furthermore, as indicated in Table 5.29, the participants made various suggestions as to the format in which the products could come, *"An energy bar or something"*, *"Milkshake or a smoothie type of thing"*, *"Also in biscuits and things; in cakes"* and *"Even in a muffin, as a morning snack"* or *"Finger food to pack as a snack; not just for children, but for myself as well"*.

Many manufacturers have expanded into breakfast-eating occasions because there is a growth among five-to-nine year olds and 25 to 34 year olds, regarding the demand for cereal, energy and snack bars (Bainbridge, 2012). Apparently 63% of consumers consider

these bars as a healthy alternative to other snacks (Bainbridge, 2012). Furthermore, research revealed that one out of five eating occasions is now a snack but also that consumers view snacking as a way in which to improve their health (NPD Group, 2014).

Table 5.29 - Eating occasions

Sub-Category		Quote
Breakfast	1	I would still say cereals. You know, because the higher the protein value in your breakfast, the longer it lasts.
	2	So if I can have an option where I know I can get in that extra protein, sure.
	3	Depending on the range of product or what it's contained in, look at cereal bars and let's say breakfast foods.
	4	Breakfast you know, especially if you have kids. You have to have a good breakfast and some protein somewhere and just cereal is not really enough.
	5	Maybe mieliemeel or things like that.
Sub-Category		Quote
Lunch	1	I think breakfast and lunch boxes. You are always looking for something to put in the lunch boxes.
	2	The other thing is something to put on bread. Something like a spread or a margarine.
	3	Something like peanut butter or something like that
	4	Something like provitas or biscuits? Because that is the type of product you put in your lunch box. Like a savoury biscuit type thing.
	5	A side dish you can serve for someone that has allergies that cannot eat wheat.
	6	What kind of things you can use it in. I would like to put it into my soup.
	7	Something different that you put in a salad. Or on a sandwich, something like that.
	8	Even a loaf of bread.
Sub-Category		Quote
Supplement / Alternative	1	Snacks, soups, pasta, maize meal. A milk substitute.
	2	Bread.
	3	Margarine. A yoghurt or a milk shake.
	4	Would they put pea protein in bread as a supplement?
	5	It cannot go into milk products?
	6	But like with soya, I know that if you make coffee with soya milk, the last bit of the coffee, there's like a thick layer. So if a pea protein can be different than that, and it does not settle at the bottom, it would be nice.
	7	It might be in bread, it might be in maize meal, it might be with rice, we do not know how it is going to be, but that would be the most important thing.
	8	If they can put it into bread.

Sub-Category	Quote
Snack	1 But I also like the idea of snack bars and stuff for kids for lunch boxes
	2 My main thing is that I will try all different types of snack bars, because I need to be more creative as to what to put in the lunches.
	3 An energy bar or something
	4 A snacky type of thing; you want something that is quick that you can grab in your hand or that will be quick – it does not need a lot of time preparing
	5 Finger food to pack as a snack; not just for children, but for myself as well.
	6 Would it be possible to maybe put it into sweets?
	7 Milkshake or a smoothie type of thing.
	8 Put it into ice-cream
	9 Something you can put into the sports kits, so the kids can eat it quickly.
	10 Also in biscuits and things; in cakes
	11 Even in a muffin, as a morning snack
	12 Like a muffin. They will like the muffin and then you add the pea protein in there and they do not even know they're eating it.

Category 2 - Convenient Applications as presented by Figure 5.32.

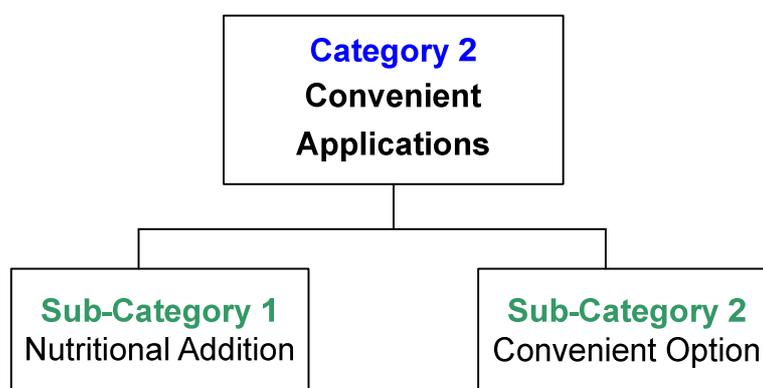


Figure 5.32 Convenient applications of pea protein product

Figure 5.32 indicates the second category that emerged as convenient applications where the participants felt that they can make their meals more nutritious by the addition of protein as these quotes presented in Table 5.30 suggests *“I would like something where you can take a tablespoon full and add it to your soup to just give it a little bit more body and flavour and stuff. Also sauces”* and *“It’s a question of adding a heaped teaspoon or tablespoon of this into the food and it does not alter the taste, it does not alter the consistency or anything like that”*. Additionally, the participants felt that, as mentioned in

Table 5.30, the pea protein product should be convenient to use or consume, *“So your pasta becomes your protein instead of just your carb. It becomes the protein meal as well”* and *“Quick and go. No mess no fuss. As long as it can go in the microwave its fine”*. It should also be convenient to consume on the go, as this participant states, *“I agree. On the go. Chew on the way to the club”*.

Blumenfeld (2013) mentioned pea protein is currently available in a powder form which can be added to soy milk, juice or water or it can even be added into oatmeal, in order increase the protein content of the beverage or oatmeal. Daniells (2013), furthermore, mentions that pea protein is becoming increasingly popular in sport nutrition products where it is used in combination with whey proteins. Pea proteins are also used in food and beverages products and from snack and protein bars to ready-to-drink beverages and powders, offering a convenient but healthy product to consume (Daniells, 2013).

Table 5.30 - Convenient Applications

Sub-Category	Quote
Nutritional Addition	1 It's a question of adding a heaped teaspoon or tablespoon of this into the food and it does not alter the taste, it does not alter the consistency or anything like that.
	2 I would like something where you can take a tablespoon full and add it to your soup to just give it a little bit more body and flavour and stuff. Also sauces.
	3 Yes, like sauces and "Bisto" type products.
	4 A pea flour to bake with.
	5 Would you be able to buy it in powder form or will they only use it in products? Like to put it in your porridge.
Sub-Category	Quote
Convenient Option	1 So your pasta becomes your protein instead of just your carb. It becomes the protein meal as well.
	2 Yes, it must open easy and close easy and do not spill all over the place.
	3 Quick and go. No mess no fuss. As long as it can go in the microwave its fine.
	4 I agree. On the go. Chew on the way to the club.
	5 It can go into a custard or a cream or something.

5.5 Sentence Completion

The third objective was set to explore consumers' attitude towards the unfamiliar pea protein product in order to determine what the consumers will find acceptable when a product does contain pea protein and what their purchase intent of this product will be. A sentence completion exercise was performed by the focus groups participants that asked them to complete two separate questions that addressed the acceptability of pea protein product and the intention to purchase a new pea protein product. These questions and their findings are presented as subheadings in the following sections.

5.5.1 Question 1 - I will find a product which has a high content of pea protein acceptable when.....

One main category emerged from the findings of this question. This category described the most important criteria which will make a pea protein product acceptable to the consumer. These criteria included that the packaging had to be attractive, the product has to contain health benefits and the product should be able to be accommodated into the consumer's existing lifestyle. Furthermore, the product and product information has to be available and moreover the product has to be cost effective, but also have an acceptable taste.

Category 1 – Criteria for acceptable pea protein product as presented by Figure 5.33.

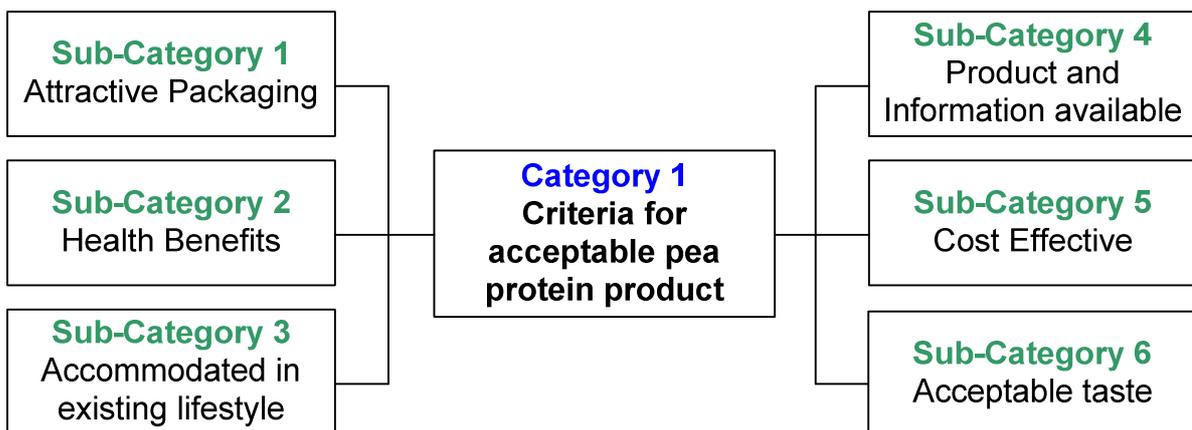


Figure 5.33 Criteria for acceptable products with high pea protein content

According to Figure 5.33 the sub-categories that emerged from the findings clearly indicate the various criteria necessary for an acceptable pea protein product. The importance that the pea protein product should be packaged in attractive packaging was highlighted, as these quotes in Table 5.31 suggest, *“The packaging is thrilling, totally*

different from all the other products” and *“Packaging is attractive and effective”*. Although the attractiveness of the packaging was a major concern to the participants, it should also be easy to use as well as reusable, *“Packaging must be easy to use and re-use”*, and the packaging should assist in presenting an edible appearance to the product *“It looks attractive and edible”*. Moreover, a product high in pea protein was found to be acceptable to the consumer if it complies with the participants’ perceived idea of health benefits. In particular, the product will be more favourably considered if it is nutritious, as these quotations suggest, *“If I obtained more nutrition and benefits from the product”*, *“Has the added nutritional value stated on the packaging”* and *“Added nutritional value”*. Additionally, the participants felt strongly about a product that is healthy, but is also natural or has natural ingredients, as the quotes from Table 5.31 indicate, *“If it offers healthy, organic and a natural base in order to avoid the usual toxins that are in the current food we buy”*, *“It is a natural product - i.e. very few other chemicals added (ingredients label)”*, *“It is healthy and it has natural contents”* and *“If it offers healthy, organic and a natural base in order to avoid the usual toxins that are in the current food we buy”*. The participants, furthermore, mentioned the importance of products that are allergen free because their children might have allergens, *“My children have allergies”* or even if a product can assist with a medical condition, *“If it will help my medical condition”*.

Furthermore, the findings indicated that the participants were mainly of the opinion that the new pea protein product should be able to be accommodated in the existing lifestyle they lead. In particular the participants should be able to use the product in dishes, as these quotes from Table 5.31 suggest, *“It’s healthy and can be used in many dishes”*, without a problem, it should fit in with their diet *“If I can use it in my daily diet”*, be used as a snack *“It can be used as a snack/packed into a lunch box”*, or replace meat *“Replaces meat in diet”* to name a few applications. Additionally, the participants were of the opinion that should the product be readily available and if they were informed about the product it would make the product more acceptable, as these quotations suggest, *“If there is an information kiosk, giving details on the products”* and *“It is readily available and I have enough information about it”*.

Two further criteria were also mentioned by many participants who indicated the cost effective criteria the participants used, include such points as *“priced right”*, *“economical”* and *“affordable”*. Additionally it was also mentioned that the new pea protein product should be *“value for money”*. The last sub category that emerged was that if the product tasted acceptable it would be considered an acceptable product to consume. However, where taste was concerned the product should taste good before it will be purchased as

these quotes suggest *“If the taste of the product still is to my liking”*, and *“No sacrifice in taste”*. Additionally the opinions of the participants’ family and children will also determine whether the product will be acceptable, as indicated by the quotes in Table 5.31, *“It is tasty and my children eat it”* and *“If my family are willing to try something new”*.

Silayoi and Speece (2007) mention that manufacturers use packaging attributes such as colours, designs, shapes, symbols and messages to attract and sustain attention. These attributes furthermore, help the consumer to identify the product on the store shelf (Silayoi & Speece, 2007). The packaging design, therefore, has to catch the attention of the consumer reiterating the importance of attractive packaging. In recent years, the packaging has been used as a vehicle for communication with the consumer where important messages and information can be described (Silayoi & Speece, 2007). The participants have mentioned the importance of health benefits and as discussed in previous chapters, pea protein is a healthy, non-GMO, allergen free ingredient which can be used in almost any application. Convenient products have become a requirement for most consumers, mainly due to the time-pressure they are under (Silayoi & Speece, 2004). Consumers are also facing longer commuting times and increased interruptions from technologies like cell phones and emails (Convenience Foods, 2005), therefore, requiring convenient products which can be accommodated into the existing life-style. The cost effectiveness of the product (East, 1997) and good taste of the product (Muth *et al.*, 2002), furthermore, plays an important role in the acceptability of the pea protein product.

Table 5.31 – Criteria for acceptable pea protein products

Sub-Category	Quote
Attractive Packaging	1 The packaging is thrilling, totally different from all the other products.
	2 Packaging must be easy to use and re-use.
	3 It looks attractive and edible.
	4 Packaging is attractive and effective.
	5 If the presentation is good.
	6 The packaging appeals to me.

Sub-Category	Quote
Health Benefits	1 If it is beneficial to our health.
	2 It conforms to the ingredients which are healthy.
	3 Allergies.
	4 My children have allergies.
	5 If I obtained more nutrition and benefits from the product.
	6 I see the benefits of consuming the product.
	7 If it will help my medical condition.
	8 It does not also have a high fat and sugar content.
	9 It's healthy.
	10 The product is healthy.
	11 If is of nutritional value.
	12 Healthy and nutrition.
	13 Have healthy benefits.
	14 Has the added nutritional value stated on the packaging.
	15 It is a natural product - i.e. very few other chemicals added (ingredients label).
	16 It is healthy and it has natural contents.
	17 It can offer health benefits over alternative product sources.
	18 If it offers healthy, organic and a natural base in order to avoid the usual toxins that are in the current food we buy.
Sub-Category	Quote
Accommodated in existing lifestyle	1 If I can use it in more, for example, dishes.
	2 If I can use it in my daily diet.
	3 If it's part of my daily use.
	4 It's healthy and can be used in many dishes.
	5 It can be used as a snack/packed into a lunch box.
	6 Replaces meat in diet.
	7 It is in a product that I want to buy.
	8 Adds to way of living.
	9 Is something that I would use?
	10 It is of an overall good quality.
	11 It offers me a hassle free way of incorporating protein into food for my kids and if it offers convenience along with its goodness.
Sub-Category	Quote
Product and Information available	1 If there is an information kiosk, giving details on the products.
	2 I know what pea protein is.
	3 It is readily available and I have enough information about it.
	4 It is always available.

Sub-Category	Quote
Cost Effective	1 If it can be used more cost effectively in dishes.
	2 It is in a product which is affordable.
	3 If it's cheap and I can afford it.
	4 The price is good.
	5 Affordable.
	6 The product is affordable.
	7 Economical.
	8 Value for money.
	9 If the price is not too high.
	10 The price is right.
Sub-Category	Quote
Acceptable Taste	1 It tastes good.
	2 If the taste is good.
	3 If it tastes good; looks good.
	4 It does not have a husk "texture".
	5 Tastes good.
	6 If the taste of the product still is to my liking.
	7 The product tastes good.
	8 It is tasty and my children eat it.
	9 No sacrifice in taste.
	10 If it tastes good.
	11 If my family are willing to try something new.

5.5.2 Question 2 - I intend to purchase a product which has a high content of pea protein if....

The second question asked during the sentence completion exercise was specifically used to determine the purchase intent of the participants and which attributes of the product containing pea protein would be found acceptable and also be considered to influence the participants' purchasing intent. Purchasing intent of the consumer was characterised by eight sub-categories which included the acceptable taste of the product, the importance of the nutritional content, a meat and meal replacement and easy and convenient to use. The product, furthermore, had to have health benefits, has to be cost effective and an awareness must have been created so that the consumers knows about the product and lastly the product has to be environmentally friendly.

Category 1 – Purchasing intent criteria as presented by Figure 5.34.

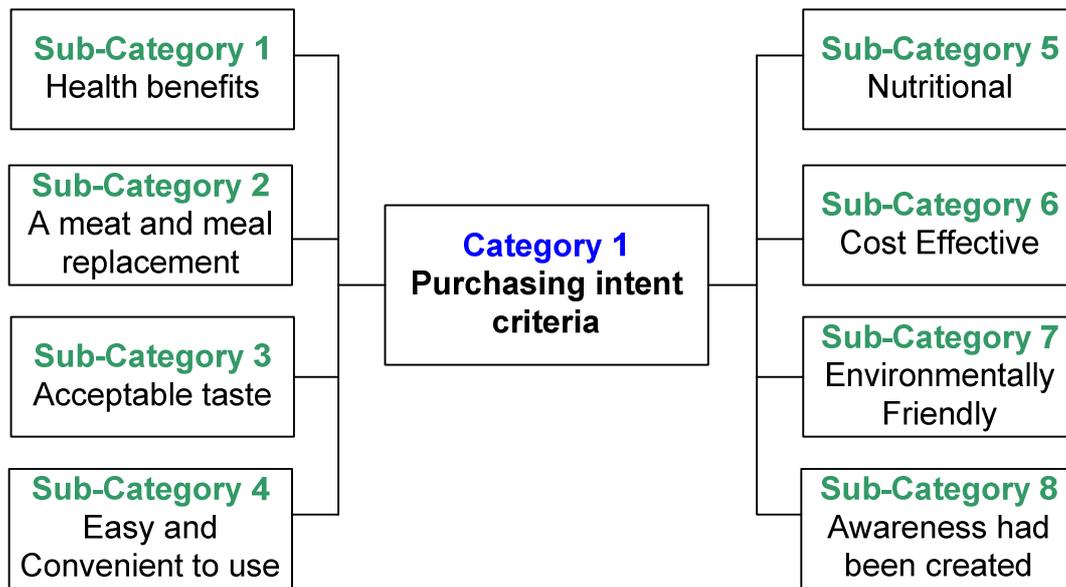


Figure 5.34 Purchasing intent criteria of a product containing pea protein

Figure 5.34 indicate that the main sub-category that emerged from the data of the second question of the sentence completion exercise was the health benefits. The importance of the health benefits of the pea protein product is indicated by these quotes in Table 5.32, *“It will improve the health of my family. After trying a few times I can see an improved difference. Should I start serious work-outs I would consider changing my entire diet to pea protein products”*; *“There is a benefit to me health wise”*; *“It’s a healthy option”* and *“I am looking for more natural products and products that will benefit my health”*, to mention but a few. The participants also had a strong consideration for the replacement of red meat *“It’s a good alternative for meat”*; and as meal replacement in their diet, *“As a substitute for a meal”* and *“Conscious of what I am consuming. Protein is mainly ideal for me when on a protein diet especially when exercising”*.

Additional sub-categories emerged where the product has to have an acceptable taste, *“When the product tastes nice”*; it is easy and convenient to use, *“It is easy to use”*; nutritional, *“Awareness of nutritional benefits”* and cost effective, *“The comparative price is good”*. Moreover, the participants briefly mentioned the environmental concerns, *“Environmental considerations”* and lastly they felt that the awareness of the new product had to be created, *“If it is promoted more and when the advantages are printed on the packaging”*.

Nyanzi *et al.* (2010) are of the opinion that health benefits are often a foremost determinant of food product acceptability. Although consumers will evaluate functional foods in the same manner as any other foods, the consumer will recognise the importance of health benefits; however, it cannot outweigh the significance of sensory properties of the product (Siró *et al.*, 2008). In addition to the health, nutrition and taste, consumers prefer products that are convenient to plan, shop, prepare, cook and clean (Rimal *et al.*, 2007). In addition the importance meal replacements with high-protein claims, furthermore, showed a respectable 37% growth in the past five years before 2012 (AIDP Inc. Plant Proteins, 2013).

Although the participants only briefly mentioned the environmentally friendly aspects, it is important to reiterate that during the processing of pea protein from the protein plant, no chemical solvents are used (Mercola, 2014). This is both to maintain the functional properties of the pea protein and to obtain the best nutritional value. Additionally, pea protein is GMO-free and safe for human consumption, but the pea crop also plays a beneficial part in an environmentally sustainable and ethical process (Roquette©.Freres, 2012).

Table 5.32 – Purchasing intent criteria

Sub-Category	Quote
Health Benefits	1 It becomes available and consists of healthy ingredients which are useful in food preparation such as pasta or porridge.
	2 It's a healthy option.
	3 Is comfortable for the family and have no side effects or risk.
	4 I have certain health issues that needs considering
	5 I am looking for more natural products and products that will benefit my health.
	6 If will benefit my children's eating habits.
	7 I need to supplement protein intake - diet / vegetarian.
	8 I want to encourage my family to eat more veggies, when I want to introduce more natural product in daily eating and when I want to try something new that is healthy.
	9 It has benefits that out-weigh the benefits of the product I am currently buying and if it can show a healthier eating regime especially for a fussy husband and children.
	10 It will improve the health of my family. After trying a few times I can see an improved difference. Should I start serious work-outs I would consider changing my entire diet to pea protein products.

Sub-Category		Quote
A meat and meal replacement	1	Use it in my food, sauces, coffees. As a snack for my family and can use it in my meat and baking.
	2	It's a good alternative for meat.
	3	It is versatile and filling.
	4	As a substitute for a meal.
	5	It can be brought out in a snack bar, cereal or meal replacement that I can add when cooking.
	6	Sports training. Recovery or when I am travelling and food (healthy) is not readily available.
	7	Conscious of what I am consuming. Protein is mainly ideal for me when on a protein diet especially when exercising.
	8	I decided to eat less meat due to weight problems and I need more protein for my exercises.
	9	I can replace meat, milk/dairy protein with it.
	10	If it can incorporate the proteins in food which can eliminate maybe extra multivitamins which we can eliminate. Also avoiding eating meat too often, another form of protein which can be disguised would be refreshing.
Sub-Category		Quote
Acceptable taste	1	It tastes nice / acceptable.
	2	When the product tastes nice.
	3	Easy to use and tasteful
	4	Proven edibility to myself and family.
Sub-Category		Quote
Easy and Convenient to use	1	It's easy to use / present.
	2	It is easy to use.
	3	Easy to include in my diet.
	4	Is user friendly and I can put it in lunch boxes.
	5	Convenient to use.
	6	It is convenient.
	7	How to prepare it.
	8	If it has a long shelf life.
Sub-Category		Quote
Nutritional	1	Good nutritional value.
	2	Nutrition is sufficient.
	3	Awareness of nutritional benefits.
Sub-Category		Quote
Cost Effective	1	It's affordable.
	2	If it is affordable.
	3	If it's competitive with other proteins.
	4	The comparative price is good.
	5	Easy to find and in my budget.
Sub-Category		Quote
Environmentally Friendly	1	Environmental considerations.

Sub-Category	Quote	
Awareness had been created	1	If it is promoted more and when the advantages is printed on the packaging.
	2	I've heard it through word of mouth and signage around the stores or billboards.
	3	Colourful and smell nice.
	4	Has been well advertised.
	5	I know more about it.
	6	I have been educated on the products, it is on the shelves at my supermarket and it is clearly stated on the packet / tin.

5.6 Vignette Exercise

As mentioned before, the vignette is essentially a very short story that when carefully constructed and pre-tested, simulates real life experiences (Schoenberg & Ravdal, 2000). Therefore, a vignette exercise was used to address objective four in order to identify the acceptability attributes that influences the intention to purchase a pea protein food product. The participants were requested to read and study the marketing information about pea protein and a snack bar containing pea protein. The participants were then requested to read the vignette and to list and rank three of the most important aspects that would convince them to add the cereal bar to their shopping basket. The sub-categories which emerged from the data are discussed in the following section and because the participants were requested to rank their answers according to the most important aspects that would convince them to add this cereal bar to their shopping basket, the sub-categories, by number, correspond with the most important perceived acceptability attributes.

Category 1 - Cereal bar acceptability and purchasing intent influences as presented by Figure 5.35.

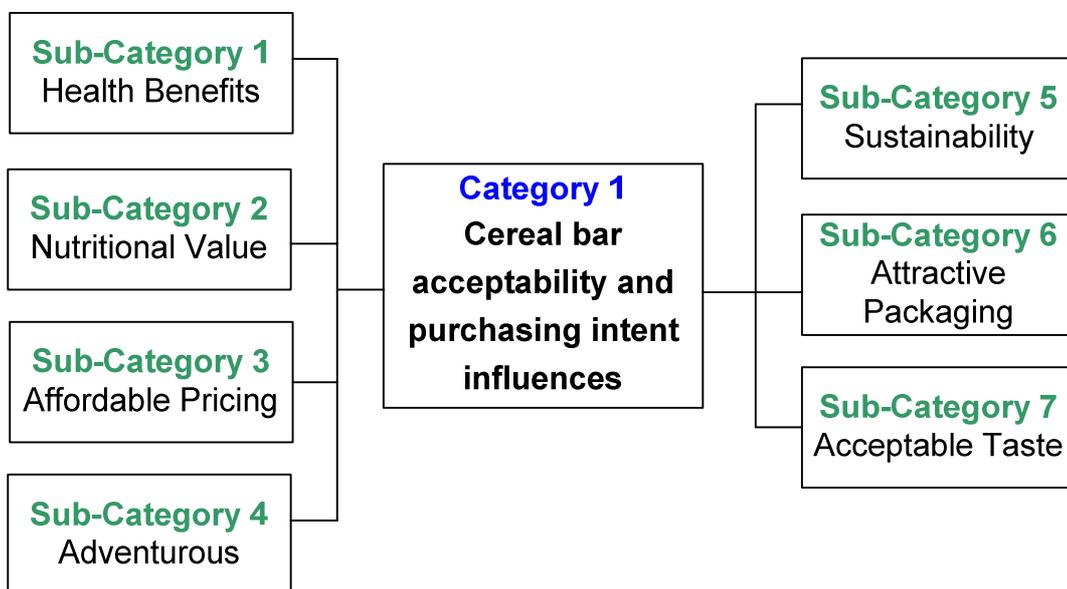


Figure 5.35 Acceptability attributes that influences the intention to purchase a pea protein food product

Regarding the participants' purchasing intent of a cereal bar containing pea protein, as Figure 5.35 indicates, the main attribute or sub-category that emerged was the health benefits, as stated in Table 5.33; "Health aspect - Once again what difference is it going to

add to my health. It will be substituting vegetables or other proteins that I might be lacking” and *“Specific health needs - my daughter is wheat sensitive so I always look for something that is wheat-free”*. The participants, furthermore, mentioned the nutritional benefits that should be part of the products, *“Gaining more benefits from a cereal in terms of energy and physical activity. It’s got to give back, it will make a world of difference”*, *“Energy - if the product supplies energy for the body, it will help as we are always on the go, even at the office, lunch times are rare”* and *“If it can be used in existing products to increase the nutritional value”*. Additionally, the price should be affordable, as indicated by the quotes in Table 5.33, *“It must be an affordable price or at least buy one, get one free”* but the product should also be value for money *“Price is a definite consideration - value for money is NB - I’ll pay more for real nutritional value”* and *“Value for money - having to shop for family of 4 and including lunchboxes for 5 days can get expensive so is a great deciding factor”*. The next sub-category that emerged was the adventurous participants or consumers. These participants agreed that they would like to try the new product, provided they have enough information about it *“If I know enough about the product I will try it because I love trying something new and healthy”*. Also to put into lunch boxes to keep it interesting, *“New - need to try a new product for them to keep the lunches exciting”*.

Moreover the participants mentioned that sustainability of the product was important to them, where they could eat a snack or have something on the go that would sustain their energy level and keep them fuller for longer, as these participants stated in Table 5.33; *“GI and GI loading - sustained energy and weight control and how many chemicals listed on the label - prefer natural”* and *“Protein - my son plays soccer and swims, therefore, he needs the added protein. It is also more filling - you know that your family will be fuller for longer”*.

Attractive packaging was mentioned as an important decision making criteria as stated by the quotes, *“The packing of the brand will attract me as if there’s colour and images it would be easier to convince the kids to eat”* and the packaging should also be colourful, *“Must be in a colourful pack which will draw attention”*. The acceptable taste was mentioned in the sense that the product has to taste good because if the product does not taste good the participants stated that they would not buy it again, *“If it tastes nice I will try it in snacks and food. It must look tasteful and healthy”* and *“Has to taste good and have a good and satisfied aftertaste in your mouth.”*

One of the major attributes that the participants found important for the acceptability and purchasing intent of the cereal bar, was that it had to be healthy. As mentioned in paragraph 2.2.4, medical studies have been undertaken to test the health benefits of pea protein which included promoting muscle maintenance and development which helps to prevent osteoporosis (Roquette©.Freres, 2012), the possibility that protein from peas may reduce blood pressure and improve kidney health (Daniells, 2009) as well as the yellow pea which might be able to assist in lowering blood pressure (Adams, 2013). Additionally, according to Proteins and Derivatives (2013), pea protein is extremely nutritive and highly digestible and as a slowly-digested protein source, pea protein also has a positive impact on satiety which assists with weight management (Roquette©.Freres, 2012; Proteins and Derivatives, 2013). Regarding the affordable pricing, consumers often judge whether a product is of good value or not and whether they should buy it or not, based on the apparent value of the price (East, 1997). Additionally, the packaging and taste of the product can also assist with the perception of quality and health (Cronje *et al.*, 2004) and, therefore, the acceptability and improved purchasing intent. The fact that consumers expect the food product to taste nice remains one of the main requirements (Fuller, 2005) of an acceptable food product.

Table 5.33 – Cereal bar acceptability and purchasing intent influences

Sub-Category	Quote
Health Benefits	1 If it will not cause constipation and if it will not block arteries like animal fats.
	2 Health aspect - Once again what difference is it going to add to my health. It will be substituting vegetables or other proteins that I might be lacking.
	3 Health - my kids are poor eaters, but they have their favourites on food types. If it is what they like and it will help with the energy levels and health, I'll take it. Also medical condition - if the product has no allergies and my kids love it, I will definitely buy it.
	4 Specific health needs - my daughter is wheat sensitive so I always look for something that is wheat-free.
	5 Because of my son's need for more protein in his diet and does not eat meat, they would be a definite winner.
	6 Sugar / fat content - health considerations.
	7 Pea protein "sounds" healthy - I'm trying to get my husband to eat more healthily.
	8 Convenience - a product that would be eaten and enjoyed with a benefit of extra protein.

Sub-Category	Quote
Nutritional Value	1 If it can be used in existing products to increase the nutritional value.
	2 The nutritional value: What is the combination of nutritional ingredients, e.g. sugars, carbs etc.
	3 Gaining more benefits from a cereal in terms of energy and physical activity. It's got to give back, it will make a world of difference.
	4 Energy - if the product supplies energy for the body, it will help as we are always on the go, even at the office, lunch times are rare.
	5 Nutritional value of lunchbox foods - it's difficult to find variation in nutritional foods for lunchboxes.
	6 High nutritional value and taste - especially when it's for kids - taste will be important.
	7 I would buy it for myself as I do not enjoy green vegetables and as a source of plant protein I would put it in my lunchbox
	8 Nutritional benefit: connects to value for money if nutritional benefit balance in on price factor therefore the two go hand in hand.
	9 Versatility - being able to have a product that proverbially kills 2 birds with 1 stone - nutritious and yummy (kids).
	10 Would buy definitely as my son is a junk eater and this would substitute his diet.
	11 I try to give my family the most wholesome food possible so having a product that's natural would be great.
Sub-Category	Quote
Affordable Pricing	1 Price of the cereal bar - if it is not too expensive; it may be worth a try.
	2 Affordable and colourful and easy to use.
	3 Is it affordable?
	4 It must be an affordable price or at least buy one, get one free.
	5 If it is reasonably priced.
	6 Price is a definite consideration - value for money is NB - I'll pay more for real nutritional value.
	7 Does the price compare well with other cereal bars - too pricey will not fit in a budget.
	8 Price.
	9 Value for money - having to shop for family of 4 and including lunchboxes for 5 days can get expensive so is a great deciding factor.
	10 The price - if the product is not too highly prices, but still offers the benefits of healthy eating.

Sub-Category	Quote
Adventurous	1 Curiosity - always trying something new.
	2 New - need to try a new product for them to keep the lunches exciting.
	3 If I know enough about the product I will try it because I love trying something new and healthy.
	4 The fact that there is pea protein in it - I might not know what it is, but would want to try it because of the added protein value.
	5 Is the product I already use easy to replace and will I readily be able to find the product and will I be able to include these product in my menu when working out my shopping list.
	6 Is it going to be easy to prepare - I'm always looking for time-savers.
	7 The fact that it is a new product - I like trying new products.
	8 Change is as good as a holiday.
Sub-Category	Quote
Sustainability	1 Does it count as a protein snack like cheese, yoghurt ham etc. I want the lunch boxes to contain protein, as it helps with regulating blood sugar levels.
	2 Why is this protein different than the ones already on the market and will it improve my way of lifestyle.
	3 Protein - my son plays soccer and swims, therefore, he needs the added protein. It is also more filling - you know that your family will be fuller for longer.
	4 If I can clearly see that "pea protein" is high in protein.
	5 The feeling of being satisfied (feeling less hunger pangs) for longer - help with healthy eating. Sustainability - helping to provide energy - physical and mentally.
	6 GI and GI loading - sustained energy and weight control and how many chemicals listed on the label - prefer natural.
	7 Shakes, because it's high in fiber, cereals and snacks which are healthy and easy for lunch boxes.

Sub-Category		Quote
Attractive Packaging	1	The Packaging: Is the snacks individually wrapped, for convenience.
	2	The packing of the brand will attract me as if there's colour and images it would be easier to convince the kids to eat it.
	3	Must be in a colourful pack which will draw attention.
	4	If the packaging is enticing.
	5	Packaging - does it look appealing again with children in mind.
	6	Presentation and packaging - it must look nice to eat.
	7	If the snack bars look yummy on the cover that make you feel like you would be willing to try something new.
	8	I would see what information would be on the packaging indicating the benefits of having pea protein in the cereal bar.
	9	For myself, if the packaging appealed to me and curiosity.
Sub-Category		Quote
Acceptable Taste	1	Taste: Is the snack available in different flavours e.g. strawberry, vanilla, chocolate etc.
	2	If it tastes nice I will try it in snacks and food. It must look tasteful and healthy.
	3	Does it look tasteful.
	4	Has to taste good and have a good and satisfied aftertaste in your mouth.
	5	Be tasteful and delicious. Kids must be convinced that it is healthy, tasty and to their benefit.
	6	Taste / looks tasteful: That the value for money and nutritional benefit has not been sacrificed for taste.
	7	Small trial packages - so that I can sample the taste.

5.7 Summary

The aim of the research was to conduct an exploratory study of the influence that external product attributes have on consumers' perceived acceptance of pea protein as a protein substitute in food products. The study explored in detail the various different attributes of the product that will have an influence on the purchasing intent of the participants.

In light of the objectives set out for the study a qualitative research methodology was applied. A triangulation of methods was used to gather information and to capture data from the different methods used in order to determine whether new information emerged from the data regarding the perceived acceptability of pea protein as an alternative protein source. The data collection process consisted of focus group interviews which were followed by a sentence completion and a vignette exercise. A qualitative approach was used for the analysis of the data from all three data collection methods. Through the analysis of the data regarding the various acceptable attributes, the similarities and differences concerning participants' opinions and experiences emerged. Certain conclusions can be drawn from the findings of the study which gives rich insight into and understanding of how participants perceive new products containing pea protein and how it would influence their purchasing decision.

The next chapter will provide a more extensive analysis of the conclusion of the study and its contribution to theory.

CHAPTER 6: CONCLUSION OF THE STUDY

This chapter presents the conclusions and implications of the findings, as well as further research possibilities regarding the influence that external product attributes have on consumers' perceived acceptance of Pea Protein as a protein substitute in food products.

6.1 Introduction

Throughout the preceding chapters the interest and importance of pea protein was presented. A detailed discussion regarding the influence of external product attributes such as product price, marketing of the product, packaging attributes, branding importance and new product education and knowledge, on new food products and in all probability on pea protein products, were suggested. The Theory of Reasoned Action was presented as a promising theoretical approach to understand the dynamics of consumers' intention to purchase a new food product which also informed the proposed conceptual framework of the study. Additionally the research methodology that best supported the objectives of the study was described, followed by the findings obtained through the various research instruments employed in the study. Therefore, this chapter aims to conclude the exploratory study of the influence that external product attributes have on consumers' perceived acceptance of pea protein as a protein substitute in food products by presenting brief comments and interpretations on the main findings of the study. The implications and limitations of this study as well as the contribution of this study to manufacturers, retailers and marketers as well as recommendations for further research are also presented in this chapter.

6.2 Summary of the study

The aim of this research was to undertake an exploratory study of the influence that external product attributes have on consumers' perceived acceptance of pea protein as a protein substitute in food products. As mentioned in Chapter 1, pea protein has been identified as a possible substitute for red meat, which contains the most complete combination of essential amino acids. Since protein is vital for human health and because pea protein is a natural, non-allergenic and non-GMO (genetically modified organism) product, it, therefore, justified further investigation of the product itself and the general impression consumers might have of pea protein as a protein substitute. External product attributes such as product price, marketing of the product, packaging attributes, branding importance and new product education and knowledge, were described as those

influences outside a product that have an effect on the product and which might influence the acceptability of the product where the consumer is concerned. According to Veale and Quester (2009), extrinsic product attributes have no real effect on the quality of the product although they found that extrinsic product attributes had a significant influence on consumer perception of product quality.

Therefore, the various external product attributes which could have an influence on the consumer's perceived acceptance of a pea protein product were identified in the literature which included the product price, marketing of a new product, new product education and knowledge deemed necessary for the acceptability of new product. In addition packaging attributes and the importance of branding of a product were also recognized. These external product attributes were also considered to be qualities that, according to the literature and discussions in Chapter 2, do have some influence on the consumer's acceptability of a new product and ultimately influence the purchasing decision. The analysis of the data produced a broad range of findings that may be of interest to some food manufacturers in the industry, when confronted with the introduction of a new food product. In light of the fact that a non-probability sampling strategy was followed within an exploratory design, the findings that relate to each of the objectives have to be considered within the context in which the study was designed. A discussion is presented next that will conclude the main findings of the study. This discussion will be presented as a summary of the main findings that relate to the objectives of the study.

6.2.1 Objective 1 - To determine the influence of perceived extrinsic product attributes on the acceptability of new food products in general

The external product attributes that were identified from the literature that could influence consumers' perceived acceptance of a new food product were: a) influence of price, b) marketing of the product, c) packaging attributes of new food products, d) branding importance of a product and e) new product education and knowledge.

When considering the findings overall, it can be concluded that in the instance of this study the female shoppers who took part in the study, who were the main grocery and food shopper in the household, understand the importance of what they are purchasing and what meals they prepare for their household. The participants were divided into two consumer behaviour groups – the product comfortable consumers and the adventurous consumer.

The product comfortable consumers felt that they were happy with the products they know and the products they were comfortable with and would not necessarily consider new food products. These participants were also very product brand conscious and preferred to only use the brands they were familiar with. Furthermore, these participants displayed a sense of time-pressure when making their purchasing decisions which meant that they would inevitably purchase the products they were familiar and comfortable with and easily recognizable on the store shelf.

In contrast, the adventurous consumer group showed no loyalty to a specific product or brand and indicated that they would try new products, provided that they've been exposed to the product through media and advertising. The new product would, therefore, not be completely foreign and they would be able to make an informed decision.

Based on the findings it is possible to conclude that the product comfortable consumers will not normally consider new and alternative products; however, the findings of this study are rather highlighting the behaviour different consumer groups might show towards new products. In this instance, the product comfortable consumers indicated that should they have enough time to browse and they have been introduced to a new product, thus they have more information and knowledge about a new food product and the in-store display draws their attention, they might consider purchasing it. The product comfortable consumer would also be more willing to purchase a new food product supported by a well-known and familiar brand rather than a new food product launched by an unknown brand.

The findings suggest that the key to the possible consideration of a new food product is what the consumer knows about the product. The participants from both consumer groups indicated the need to be introduced to a new product before they are able to make making a purchasing decision. The introduction could either be via the printed media for instance magazines or newspapers or via electronic media. Alternatively they could come in contact with in-store promotions, which would draw their attention to the product. It is, therefore, of the utmost importance that the promotional material or medium provide as much relevant information regarding the new food product as possible. This will pique the consumer's interest to consider purchasing the new food product.

On the other hand, a significant other, such as a family member, friend or colleague, would also be able to sway the consumer to consider a new food product. The significant other's opinion was considered a trusted opinion and mostly followed, without the participants necessarily having further information about a new product. It is important to

note that a heightened awareness of a new product would be critical to new product acceptance and sales as consumers seem to be moving towards informed decisions based on knowledge and understanding of a product rather than impulsive purchases that may be costly and disappointing.

Furthermore, when consumers' interest in the new food product is captured, important to them are economic considerations such as whether the product is in fact good value for money and possibly priced correctly in comparison to other products of the same category. Thus it is of the utmost importance that the product, not only capture the consumer's interest but also provide a perceived financial benefit. Although price is important to consumers, especially in tight economic situations currently experienced in South Africa, it does not mean that a cheaper new product is always better, as participants do not necessarily associate quality with price. What participants did suggest is that a new food product should be priced in the mid-range of product pricing, where it could be perceived as value for money. This would place the new food product in a comfortable pricing zone which would allow them to weigh up the options of either purchasing or not and what the consequences of their purchase may be.

In contrast, the esthetics of a new product seems to be another key factor in determining new product purchase. In this instance, the packaging of a product becomes quite important and an attractive design that will catch the participants' eye is imperative. Should the packaging also include additional qualities such as a serving suggestion, which could influence the perceived usefulness of the product, it may heighten the decision to include the new product in the shopping basket. However, other additional qualities such as cooking instructions would assist the new buyer to conceptualise the use of the product, therefore, enhancing the attractiveness of purchasing the new product. One additional criterion that participants were adamant would influence their purchase of a new product, is the inclusion of the product's contents, in terms of whether it will add value to the consumer's health or diet and whether it has added nutrition.

Consumers would, therefore, be willing to purchase a new food product should they have been exposed to promotional material regarding the product which had eye catching, attractive packaging which provided relevant and informative product and nutritional information. If the product fell into the comfortable pricing zone with a perceived value for money and was introduced by a well-known and trusted brand, the resistance to purchasing would be lowered.

Therefore, with regards to the influence that extrinsic product attributes have on the acceptability of a new food product, the product comfortable consumer will likely be resistant to purchase the product regardless of all the external influences, unless they have been influenced by a significant other because the significant other's opinion is far stronger than any promotional material or advertising. The adventurous consumer is the one who would look for new products to try and will take the various extrinsic product attributes into consideration, but in the end they are more likely to try the product because the product is new and exciting and they like to experiment with new products.

6.2.2 Objective 2 - To determine the influence of perceived extrinsic product attributes on the acceptability of food products that specifically contains pea protein

The external product attributes that were identified from the literature that could influence consumer's perceived acceptance of new a food product which specifically contains pea protein were: a) influence of price, b) marketing of the product, c) packaging attributes of new food products, d) branding importance of a product and e) new product education and knowledge.

Similar findings of the influences of the external product attributes on the acceptability of new and unfamiliar food products were observed between the general food product and the food product containing pea protein. Once again the participants were divided into two consumer behaviour groups. The product comfortable consumers, being initially cautious towards any new food product, especially a food product they are unfamiliar with are very brand conscious and preferred to purchase only brands that are familiar and that they were accustomed to. Although these participants displayed a strong brand loyalty, they indicated that should they be exposed to additional product info and had the opportunity to become more familiar with the new food product containing pea protein, they might consider purchasing it. These participants did, however, reiterate the importance of the opinion of a significant other who would influence their decision making processes, depending on whether or not the significant other gave the new pea protein food product a good or bad review.

The other consumer behaviour group was once again the adventurous consumers who would purchase new products purely because they are curious about the product and should they have a positive experience, they will purchase it again. This consumer group, therefore, showed a keen interest in the new pea protein product, however, they mentioned again, that they would prefer to have additional knowledge about the product in

order for them to make an informed decision. Therefore, in this instance there is no difference between the extrinsic product attributes consumers deem important when looking at the acceptability of a new product in general and when it is a new product containing pea protein.

On the other hand, most participants in this instance indicated an interest in a healthy protein alternative to conventional protein products, provided that additional information regarding the product is available. The participants specified that the health benefits, added nutritional value, wholesomeness, natural origin and the fact that the product could be a possible vegetable replacement should be clearly stated. Furthermore, the nutritional information and any other additional information regarding the product needs to be clearly visible on attractively designed, eye-catching packaging. Therefore, in the event that the participant perceives the product as nutritionally beneficial to their household and that the product will increase the dietary value of a meal, the participants will consider purchasing the product containing pea protein. Additionally, many of the participants stated that even if the food product containing pea protein is slightly more expensive, provided that there is perceived added value, their willingness to pay more for the product would increase. The significance of the nutritional information on the packaging could not be stressed enough by the participants. However, the emphasis on nutritional information may be related to the fact that the new product specifically boasted the word protein which was a nutritional connotation. Once again the advertising of the product is extremely important. The increase of awareness can be done via printed or electronic media, but due to the nature of this specific product, namely pea protein, the emphasis in the media has to be on the added benefits. Therefore, the participants first wanted to find more information about pea protein in general and suggested that the printed media and electronic information are marketing media which would allow them to be exposed to additional information.

A further conclusion is that significant others play an important part in the decision making process that the participants would go through when confronted with a new pea protein product. Several participants mentioned that they would rather contact a friend or family member whom they trust and should this person have a positive review of the pea protein product, that they would try it as well. Additionally, should the participant have the opportunity to test a sample in-store or should they receive a sample handout, they would be more willing to consider a new and unfamiliar product. Moreover, should their children be present or specifically ask for a certain product, this would also lower their resistance to purchasing a new product that contained pea protein. This points to the fact that children have a strong influence on the participants' purchasing decision making process

which could end with the purchase of a new pea protein product.

Regarding the extrinsic product attributes of a pea protein product, the participants highlighted various eating occasions which could possibly influence their purchasing decision. The participants indicated a particular need for healthy and nutritious products like snack bars that can be added to lunch boxes, both for the children and the adults for the household. Furthermore, the participants recognized the need for a healthy breakfast and mentioned that should products with high protein content, for example a cereal product, be available, they would definitely consider buying the product. In addition the participants pointed out that products that are suitable for lunch time or as a supplement in between meals, would also be of great interest to them. However, the products containing the pea protein should be convenient to use, either as a ready to eat product or if it is added to a meal to increase the nutritional value.

Therefore, with regards to the extrinsic product attributes that could influence the consumers' acceptability of a product containing pea protein, the consumers indicated that they would take the various attributes into consideration before making their purchasing decision and although there are many factors that could influence their decision, it comes down to whether the consumer is an adventurous consumer or a product comfortable consumer. The adventurous consumer would be easier to convince to try a new pea protein product, because they browse the grocery shops and look for new products or notice promotional products. These consumers are curious and would feel that as long as they've been exposed to the pea protein product via marketing, either media or internet and they have been informed about the added benefits, they are comfortable to try the new pea protein product.

In contrast, the product comfortable consumer will be harder to convince to try the new pea protein product because they are so used to their brand and they are usually very focused during their shopping trips. The product attributes, whether better prices or quality or even nutritional and health benefits will have to be clear and the marketing message needs to be very strong in order to convince them that the pea protein product is a good alternative or substitute to their current product and brand.

The acceptability of a new food product in general and a new food product containing pea protein is, therefore, very similar. Both consumer behaviour groups use the extrinsic product attributes to influence their attitude towards the new product and, therefore, influence their purchasing decision. The consumers will, therefore, follow the same route

from introduction to a new food product to the end result of purchasing the product and whether the product contains pea protein or not would not influence their decision. The consumers will still need to be convinced about the advantages of the new products through additional education or information and exposure through media. In the case of pea protein, the marketing can be focused on the added health and nutritional benefits, giving the pea protein product an advantage over a general product.

6.2.3 Objective 3 - To explore consumers' attitude towards the unfamiliar pea protein product in order to determine what the consumers will find acceptable and what their purchase intent of this product will be

The participants indicated that they will find an unfamiliar food product containing pea protein acceptable if the product is packed in attractive packaging which is eye catching and indicates clearly on the packaging the health benefits of the product. The importance of the availability of more in-depth information about the product was reiterated. The participants, therefore, need to feel that their knowledge of the product's health and nutritional benefits has increased and that they have been made aware of the advantages of the pea protein via media, both printed and electronic. Additionally the product will be acceptable if it can be accommodated into the participant's existing lifestyle; if it is, therefore, convenient and easy to use and if the product is marketed for example as a meal or meat replacement and the consumer is convinced that the product is convenient and can be accommodated into their existing lifestyle. Lastly the participants felt that the product had to be cost effective and priced competitively and had to have an acceptable taste, indicating that they would prefer to taste a sample either in-store or at home, before they make their purchasing decision.

The participants' purchasing intent when they come in contact with a new and unfamiliar food product containing pea protein was influenced by whether or not the product will have an acceptable taste. Therefore, should the product have an acceptable taste, the participants would purchase the product. Should the product be nutritional and it can be used as a meal and meat replacement that would also increase the purchase intent of the participants. Furthermore, the product had to be easy to use and convenient, indicating that the participants did not want to be inconvenienced in the way they use the product. The health benefits were once again quite important, as is the cost effectiveness of the product. Lastly the participants felt that their purchasing intent would increase, provided that the awareness regarding the pea protein product has been created and the environmentally friendly status of the pea protein is clearly stated.

Therefore, in order for the consumers to find a pea protein product acceptable and to increase their purchasing intent they need to be exposed to the product through marketing either printed media or electronic, and be educated about the added health and nutritional benefits of the product. The consumers will then purposely look for the product the next time they do grocery shopping and an added advantage would be attractive and eye-catching packaging. Provided that the price is competitive compared to similar products, the consumers will then purchase the product.

6.2.4 Objective 4 - To identify the acceptability attributes that influence the intention to purchase a pea protein food product

Although the participants had a specific product in mind when they answered the questions, the findings were very similar to the findings reached for the other objectives, except the importance rank was different. This time the participant indicated that health benefits and nutritional value are the most important attributes a product should contain in order for their purchasing intent to be influenced. Once again affordable pricing was indicated as important criteria that could influence the outcome. The adventurous participants mentioned that they would try the product because it is healthy and they are willing to try something new, even if they do not know exactly what pea protein is. Sustainability was mentioned for the first time, indicating that the participants were looking for a product that could be eaten during breakfast, lunch or even as a snack and that will, therefore, assist with their energy levels for a longer period of time. Attractive packaging was once again mentioned and the most important aspect was that the packaging needed to be eye catching. Therefore, the packaging needs to draw attention so that the participants would notice it on the grocery store shelves. Lastly an acceptable taste was mentioned to be an important aspect that will influence the purchasing intent, although the other criteria might influence the initial purchase, the taste will influence the second purchase.

Therefore, in order to influence the consumers' intention to purchase the pea protein product, the added health and nutritional benefits should be marketed through the various channels in order to promote and create awareness of the pea protein products. The product needs to be packed in attractive, eye catching, and easy to use packaging which reflects the nature of the product and highlights the nutritional and added benefits. The new product should also be promoted in store. Should these main factors be present the consumers' intention to purchase the pea protein product will increase radically.

6.3 Interpreting the conceptual framework

In order to influence or change the person's attitude towards a new and unfamiliar product, in this case a pea protein product, the various stimuli that may cause the transformation need to be identified. By using the TRA, this study examined the attitudes of a consumer towards a new product when they are introduced to a different and unfamiliar product in order to understand what will possibly change the behavioural intent to the actual behaviour of purchasing the product. A schematic conceptual framework was designed in order to explain the influence which extrinsic product attributes have on the acceptability of a product and in turn on the purchasing intent of a consumer. These external attributes were initially identified in the literature, but through the findings of this study the various extrinsic attributes were confirmed. These extrinsic attributes include the marketing of a product, packaging and labeling, product branding, price and value for money and new product education and knowledge. Additionally, from the findings emerged additional attributes which will influence the acceptability of the pea protein product. These attributes, as indicated in Figure 6.1 are the health and nutrition as well as eating occasions. Health and nutrition were prominent attributes that the participants kept referring to and stating the importance of a health and nutritious product. Eating occasions was the other attribute which spontaneously emerged from the findings, where the participants stated that they would find a new pea protein more acceptable if it was associated with a specific eating occasion, for instance a snack bar which could be packed into a lunch box.

Another factor that is recognized from the TRA and confirmed in the findings of this study, which will influence a person's beliefs, is the social pressures or subjective norm. The significant others, or people who a person holds in high regard, are easier to influence a person's behaviour because their opinion is trusted and, therefore, effortlessly believed. Their opinion to approve or disapprove certain behaviour might influence the behavioural intent. The findings from the research also confirmed the importance of the opinions of significant others.

The findings from the previous objectives clearly state the importance and the influence that the various extrinsic product attributes, as presented in the conceptual framework, have on the acceptability of a new pea protein product. In turn, this new product acceptability influences the consumers' personal attitude as well as the significant others' attitude towards the behavioural intent which in the end is the actual behaviour of purchasing the new and unfamiliar pea protein product.

6.3.1 Objective 5 - To propose a conceptual framework which identifies the influence that various extrinsic attributes have on new product acceptability and its influence on consumer purchasing decision.

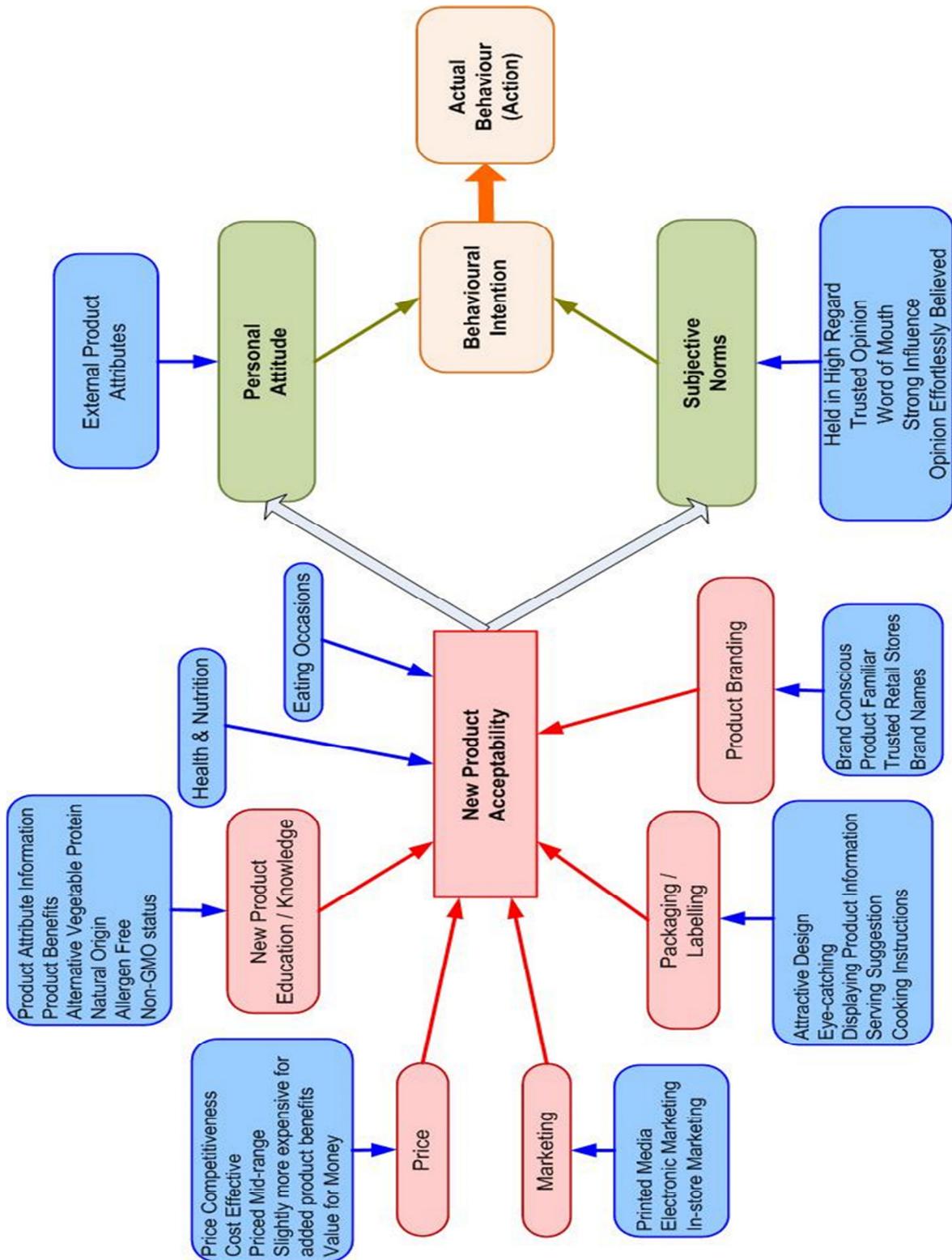


Figure 6.1 Schematic presentation of conceptual framework for the prediction of various influences on personal attitude, behavioural intention and ultimately actual behaviour.

The proposed conceptual framework presented in Figure 3.3 in paragraph 3.5, suggests that in order to influence or change the consumer's attitude, the various stimuli to cause the transformation needed to be identified. As mentioned, the various extrinsic attributes that were identified included the marketing, packaging and labeling, product branding, price and new product education and knowledge.

The amended framework in Figure 6.1, suggests that the various extrinsic attributes which has been identified, would influence the acceptability of a new pea protein product. However, each external product attribute includes different elements that are relevant to a particular attribute and that make up the reasons why a new product will be chosen. The different elements are mentioned as follows:

- New product education and knowledge
 - Further information regarding the product attributes and benefits needs to be given to the consumers
 - Alternative vegetable protein
 - Focus on the natural origin, allergen free and non-GMO status
- Price
 - Price competitiveness
 - Cost effective, priced mid-range
 - Could be slightly more expensive if the added benefits of the product are known
 - Value for money
- Marketing
 - Printed media for example magazines and newspapers
 - Electronic marketing via television and radio
 - In-store marketing
- Packaging and Labelling
 - Attractive design
 - Eye-catching
 - Containing information regarding the new product and/or ingredient
 - States the serving suggestion or cooking instructions
- Product branding
 - Brand conscious and product familiar, therefore, loyal to existing products
 - A new and unfamiliar product which is launched by an established brand, will be accepted more favourable

As mentioned, additional product attributes were identified because the participants placed extra emphasis on the importance of these attributes. The first attribute was the health and nutrition. The participants indicated that as long as a product is healthy and it would add extra nutrition to their or their family's diet, they would purchase the product. In fact, they felt so strongly about the health and nutrition of the pea protein that it is almost more important than other attributes, for instance even if the product costs slightly more, they would still try it. Furthermore, the eating occasions which emerged from the findings will also have a direct influence on the new product acceptability and in particular the new pea protein product. The participants identified very specific eating occasions where a pea protein product could fill a need, for instance a snack for a lunch box or protein enriched breakfast cereal. Therefore, should the new pea protein product be healthy and nutritious and fill a specific eating occasion need, the acceptability and ultimately the behavioural intent will be positively influenced.

Therefore, as suggested by the conceptual framework in Figure 6.1, there are external product attributes which will influence the acceptability of the new food product; this will in turn influence the personal attitude of the consumer. As stated by the Theory of Reasoned Action, the significant others will have an influence on the consumers' behavioural intent. Certain elements emerged from the findings of this study that confirmed the influence of the significant others. As indicated in Figure 6.1, the significant others are held in high regard, their opinion is trusted and effortlessly believed and they have a strong influence on the behavioural intent of other people. All these various elements and attributes play an influential role in the behavioural intent of the consumers and whether or not they will accept a new pea protein product. However, as indicated in the findings, should these elements and attributes have a positive effect on the consumers and their behavioural intent is influenced, their intention to purchase will also be influenced and they will take the action to purchase the product.

The main purpose of developing a conceptual framework was to assist researchers to identify possible variables that influence purchasing decisions regarding new and unfamiliar food products. The conceptual framework would also contribute to theory building when exploring consumer perceptions of food products containing pea protein and its influence on consumer purchase decisions. Manufacturers would not be able to influence purchase decisions without an understanding of how consumer perceptions regarding new food products containing pea protein would impact consumer's purchase decision.

6.4 Contribution of the study

It is believed that this study will assist the industry in better understanding the consumers' acceptability of pea protein products. Therefore, indicating what consumers are looking for in a product and in that way assisting the research and development of new products. It can also assist the marketing of these products by showing which criteria the consumers believe to be important in their decision making process. Marketing can, therefore, focus on these criteria. Furthermore, it is believed that this study has opened a field of a previously unfamiliar subject.

Through this research the understanding of the consumers' perceived attitudes towards new food products containing pea protein has increased and, therefore, will assist manufacturers to do precise product development and to launch food products into the market which will be acceptable to consumers. Previous research focused on the sensory or consumer preference of a product, but left out the extrinsic values and the influence it will have on the consumers' acceptability of pea protein as an alternative protein source.

It was noted from the findings that these external attributes would influence the new product acceptability and, therefore, giving the research and developers as well as the marketing team of a manufacturing company the information necessary to understand better the requirements from the consumers regarding the product containing pea protein and how this product should be marketed as a healthy alternative to other vegetable protein sources.

A final conclusion could be drawn that most participants were of the opinion that they would be interested in the pea protein product and consider purchasing it and incorporating it into their daily diet provided they know more about the product and sufficient background information has been supplied. Although the conclusions made in this study cannot be generalized to the broad population certain recommendations can be made.

6.5 Limitations of the study

In this research, a qualitative and exploratory research design was incorporated in order to achieve a better understanding and to have the opportunity to explore the view point of the participants regarding their attitude towards a pea protein product. However, one of the main limitations of this study is the relatively small sample size from a particular area in South Africa and, therefore, the sample was very selective. The sample, therefore, remains one of convenience which limits the ability to generalize or transfer findings to a bigger group of consumers. Furthermore, the study location was within a limited area, namely Gauteng. For this reason no assumptions or generalizations were made regarding the findings of the study. However, findings from this research can be used to direct future qualitative studies with a larger sample size representing a larger consumer population that would ensure better transferability of the findings. It is, however, important to remember that a non-probability sample was applied and the study followed an exploratory design, the findings cannot be generalized and are only applicable to the participants of the study.

Another limitation is that the topic of this study is very new and unfamiliar; there are, therefore, no previous studies with which to compare the findings. This study was exploratory in nature and the instruments were chosen specifically to explore a new and unfamiliar topic. The transferability of this study might be limited, but care was taken to describe the research context in as much detail as possible. In doing so, an attempt was made to enhance the transferability, should another researcher wish to duplicate the study.

6.6 Recommendations to the food industry

When taking the participants' comments and opinions into consideration, it is obvious that the consumers have become more aware of what they consume and what they require and expect from their food products. Should a food manufacturing company wish to develop a pea protein product, they would need to promote the product beforehand and create an awareness of the advantages and benefits of pea proteins. This can be done by editorials in magazines as well as promotions in printed media.

Furthermore, the food manufacturers have to be aware that should they introduce a new and unfamiliar food product to consumers that this product needs to be packed in an attractive, eye-catching and easy to use packaging. It should also contain all the

necessary nutritional information regarding the product as well as the benefits to the consumers' health. Furthermore, the product should be priced competitively in order to make it more affordable to the consumers. The competition between products and brands is fierce and, therefore, manufacturing companies need to differentiate their products to keep consumers interested in their product or brand. Pea protein is a new and innovative product and can, therefore, add that differentiation and benefits to food products. Lastly, the product should have a good taste in order to persuade the consumers to purchase the product again.

6.7 Future Research

One of the main criteria indicated for the acceptability of a food product containing pea protein has been the taste. This research was theoretical and exploratory in nature and, therefore, there were no actual products which the participants could taste. It is, therefore, recommended that another sensory study is done to determine the actual viability of the pea protein products based on sensory evaluation.

Additionally, the inclusion criteria for this study was identified as female shoppers who are in charge of household grocery and food purchases and were, therefore, specifically recruited to participate in the research. However, based on a study done by Jensen (2011), it is recommended that further studies specifically include males because men are doing more of the household grocery shopping and they are not as brand loyal as females and would, therefore, be more willing to try and experiment with new food products. A study based on the gender differences of the acceptability of new products, could highlight different extrinsic attributes that would influence the purchasing decision.

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APPENDIX 1: APPLICATION FOR ETHICS APPROVAL



Dr Antje Higgo
Chair: Ethics Review Committee, CAES

Tel: (011) 471 2984
Fax: (086) 642 7379
abartkow@unisa.ac.za

15 November 2010

To: Prof E Kempen
kempeel@unisa.ac.za

Dear Prof Kempen,

Request for Ethical approval / Research project involving humans, animals, other living organisms or gene's as submitted for student T Quina in October 2010

Your application for ethical clearance in respect of above mentioned study has been received and was considered by the CAES Research Ethics Review Committee.

The committee is pleased to inform you that ethical clearance has been granted for this study as set out in your application for ethical clearance as well as in the documents attached to your application.

Please be advised that the committee needs to be informed should your sampling method, interviews or other data sampling tools be adjusted after your pilot trial. In this case, a new application for the amendments needs to be submitted.

We trust that sampling and processing of the relevant data will be undertaken in a manner that is respectful of the rights and integrity of participants, as stipulated in the UNISA Research Ethics policy.

Congratulations on an interesting and relevant study. We would like to wish you well in this research undertaking.

Kind regards,

A handwritten signature in black ink, appearing to read "Dr A Higgo".

Dr A Higgo



University of South Africa
Pfeifer Street, Muckleneuk Ridge, City of Tshwane
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www.unisa.ac.za

APPENDIX 2: RECRUITER GUIDELINE

TITLE OF RESEARCH PROJECT

Exploring the influence of external product attributes on consumers' perceived acceptance of Pea Protein as a protein substitute in food products.

Dear Mr/Mrs/Miss/Ms _____ Date...../...../2011

When you are recruiting potential participants, please inform them of the following:

1) THE NATURE AND PURPOSE OF THE STUDY

The purpose of this research project is to determine consumer acceptance of pea protein as a protein substitute by determining the influence of extrinsic attributes on acceptability in terms of the price of the product, new product education and knowledge, the marketing of the product and the packaging and branding. It will also determine how acceptability influences the intention to purchase and explore the attitude of consumers towards an unfamiliar concept such as pea protein. This study will make use of focus group interviews to gather information from consumers who are the primary decision makers in a household.

2) THE RESEARCH PROCESS

- The study requires your participation in a focus group interview to discuss the acceptability of pea protein as a protein source.
- The focus group is led by a facilitator.
- The focus group environment offers you the opportunity to express your opinion on the subject of pea protein as an unfamiliar protein source.
- There are no right or wrong answers.
- You do not need to prepare anything in advance.
- All participants will be given the opportunity to express an opinion, or agree or disagree with the opinion of other focus group members. The group may debate the opinions of individual members of the group.
- You will also be requested to complete a sentence. An open ended question will be asked of you and you can complete this question and express your opinion in any way.
- The duration of the focus group interview should be between 2 to 3 hours.

3) NOTIFICATION THAT THE FOCUS GROUP INTERVIEW WILL BE RECORDED

Your attention is drawn to the fact that the focus group interview will be recorded to ensure that valuable information elicited during the interview is captured and the context of the information can be reviewed in detail. Following the focus group interview, the recorded material will be transcribed. You may peruse the transcription of the recording of the focus group interview in which you participated at any time.

4) CONFIDENTIALITY

The opinions of the focus group are viewed as strictly confidential, and only members of the research team will have access to the information. No data published in dissertations and journals will contain any information by means of which focus group members may be identified. Your anonymity is, therefore, ensured.

5) WITHDRAWAL CLAUSE

Please ensure that all participants understand that they may withdraw from the focus group at any time. They will participate voluntarily until such time as they request otherwise.

6) POTENTIAL BENEFITS OF THE STUDY

It is believed this study will assist the industry in better understanding the consumers' acceptability of pea protein. Therefore, indicating what consumers are looking for in a product and in that way assisting the research and development of new products. It will also help the marketing of these products by showing which criteria the consumers believe to be important in their decision making process. Marketing can, therefore, focus on these criteria. Furthermore, it is believed that this study has opened a field of a previously unfamiliar subject.

Please do not make any promises of compensation as this might influence the participants' reason for volunteering and might bias their opinions during the interview process.

Please inform the facilitator of a time and date that is most convenient for all participants.

APPENDIX 3: CONSENT FORM

TITLE OF RESEARCH PROJECT

Exploring the influence of external product attributes on consumers' perceived acceptance of Pea Protein as a protein substitute in food products.

Dear Mr/Mrs/Miss/Ms _____ Date...../...../2011

NATURE AND PURPOSE OF THE STUDY

The purpose of this research project is to determine consumer acceptance of pea protein as a protein substitute by determining the influence of extrinsic attributes on acceptability in terms of the price of the product, new product education and knowledge, the marketing of the product and the packaging and branding. It will also determine how acceptability influences the intention to purchase and explore the attitude of consumers towards an unfamiliar concept such as pea protein. This study will make use of focus group interviews to gather information from consumers who are the primary decision makers in a house hold.

RESEARCH PROCESS

1. The study requires your participation in a focus group interview to discuss the acceptability of pea protein as a protein source.
2. The focus group is led by a facilitator.
3. The focus group environment offers you the opportunity to express your opinion on the subject of pea protein as an unfamiliar protein source.
4. There are no right or wrong answers.
5. You do not need to prepare anything in advance.
6. All participants will be given the opportunity to express an opinion, or agree or disagree with the opinion of other focus group members. The group may debate the opinions of individual members of the group.
7. You will also be requested to complete a sentence. An open ended question will be asked of you and you can complete this question and express you opinion in any way.
8. The duration of the focus group interview should be between 2 to 3 hours.

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Your attention is drawn to the fact that the focus group interview will be recorded to ensure that valuable information elicited during the interview is captured and the context of the information can be reviewed in detail. Following the focus group interview, the recorded material will be transcribed. You may peruse the transcription of the recording of the focus group interview in which you participated at any time.

CONFIDENTIALITY

The opinions of the focus group are viewed as strictly confidential, and only members of the research team will have access to the information. No data published in dissertations and journals will contain any information by means of which focus group members may be identified. Your anonymity is, therefore, ensured.

WITHDRAWAL CLAUSE

I understand that I may withdraw from the focus group at any time. I, therefore, participate voluntarily until such time as I request otherwise.

POTENTIAL BENEFITS OF THE STUDY

It is believed this study will assist the industry in better understanding the consumers' acceptability of pea protein. Therefore, indicating what consumers are looking for in a product and in that way assisting the research and development of new products. It will also help the marketing of these products by showing which criteria the consumers believe to be important in their decision making process. Marketing can, therefore, focus on these criteria. Furthermore it is believed that this study has opened a field of a previously unfamiliar subject.

INFORMATION

If I have any questions concerning the study, I may contact the supervisor, Prof. Elizabeth Kempen, at the Department of Life and Consumer Sciences, Florida campus, Unisa, tel: 011 471 2241.

CONSENT

I, the undersigned, (full name) have read the above information relating to the project and have also heard the verbal version, and declare that I understand it. I have been afforded the opportunity to discuss relevant aspects of the project with the project leader, and hereby declare that I agree

voluntarily to participate in the project.

I indemnify the university and any employee or student of the university against any liability that I may incur during the course of the project.

I further undertake to make no claim against the university in respect of damages to my person or reputation that may be incurred as a result of the project/trial or through the fault of other participants, unless resulting from negligence on the part of the university, its employees or students.

I have received a signed copy of this consent form.

Signature of participant:

Signed at on

WITNESSES

1

2

APPENDIX 4: PERSONAL DEMOGRAPHICS

TITLE OF RESEARCH PROJECT

Exploring the influence of external product attributes on consumers' perceived acceptance of Pea Protein as a protein substitute in food products.

Personal Demographics:

1. Please state your Age

16-25	
26-35	
36-45	
46+	

2. Please state your Gender

Male	
Female	

3. Please state your Race

Black	
Coloured	
Indian	
White	

4. Please state your gross monthly household income category

0-5 000	
5 001 – 10 000	
10 001- 15 000	
15 001- 20 000	
20 000+	

5. Educational level

None	
Some primary grade 1 – 6	
Primary complete (grade 7)	
Some high (grade 8 – 11)	
High complete (grade 12)	
University of Technology Diploma/degree	
University degree B, honours, masters, doctorate	
Other post matric qualification certificated courses, short course certificates, programs	

APPENDIX 5: FOCUS GROUP INTERVIEW GUIDE

TITLE OF RESEARCH PROJECT

Exploring the influence of external product attributes on consumers' perceived acceptance of Pea Protein as a protein substitute in food products.

Focus Group Interview Guide.

Welcome and Introduction.

Completion of Consent Forms and Demographics Forms.

Starting with Focus Group Discussion:

- 1) What is your general attitude towards new products on the shelf?
- 2) What will make a new food product acceptable to you, in terms of:
 - a) the price of the product,
 - b) new product education and knowledge,
 - c) the marketing of the product and
 - d) the packaging and branding.

Introduce the participants a concept pea protein product by showing them a product sample and literature.

- 3) What will make a food product containing pea protein acceptable to you, in terms of:
 - a) The price of the product, (Is the price reasonable?) / Similar price as other products.
 - b) New product education and knowledge, (Can you find understandable information on the wrapper?)
 - c) The marketing of the product (Does the bar look nice to eat?)
 - d) The packaging and branding (Does the wrapper of the bar look appealing?)
 - e) Would your kids like to try it out? If other kids eat it, will they try it?
 - f) Do you think it is worthwhile to test it?

APPENDIX 6: SENTENCE COMPLETION

TITLE OF RESEARCH PROJECT

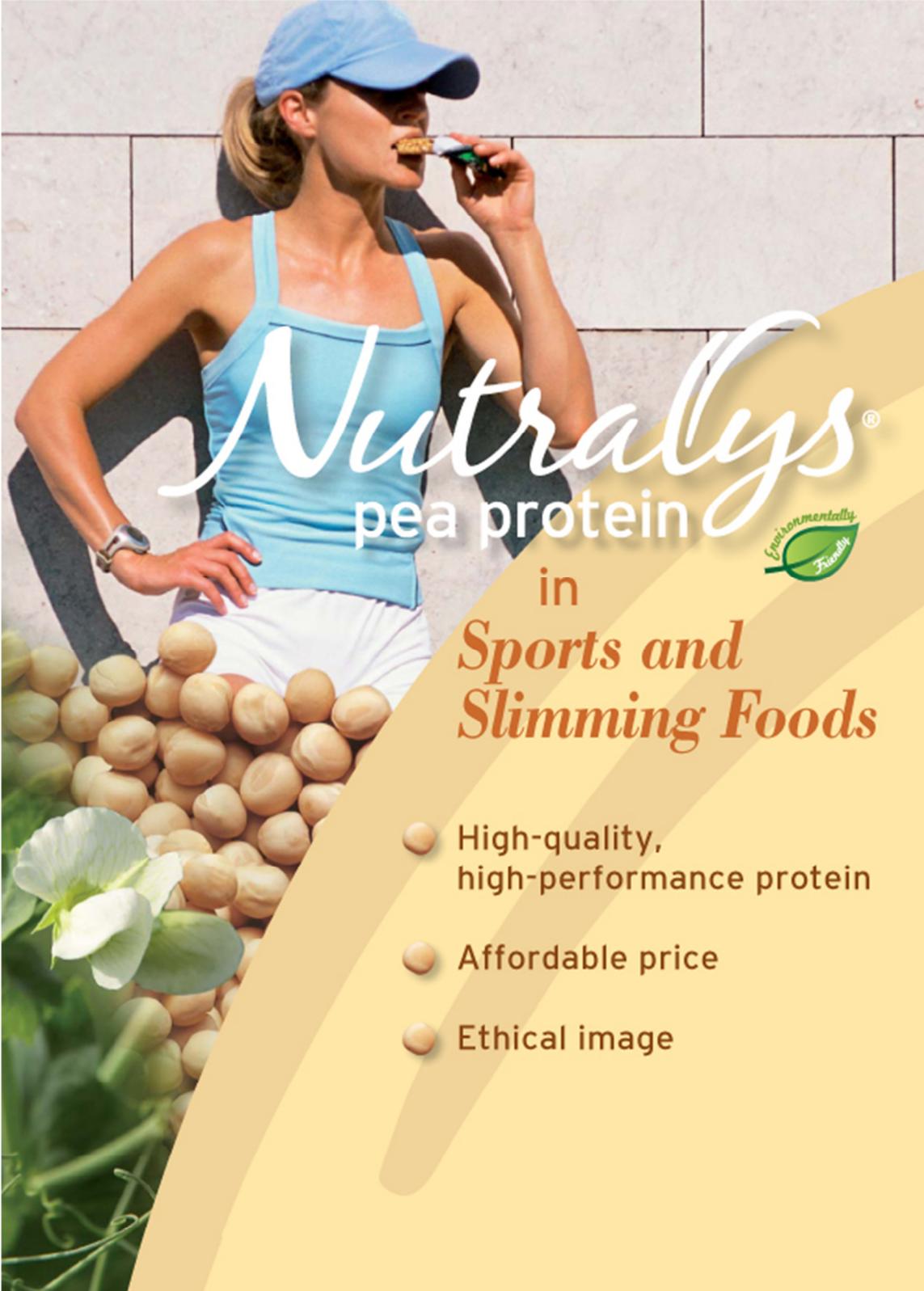
Exploring the influence of external product attributes on consumers' perceived acceptance of Pea Protein as a protein substitute in food products.

Sentence Completion. Please give three (3) reasons for each point.

I will find a product which has a high content of pea protein acceptable if

I intend to purchase a product which has a high content of pea protein when

APPENDIX 7: MARKETING INFORMATION OF A SNACK BAR CONTAINING PEA PROTEIN



Neutralys[®]
pea protein

*Environmentally
Friendly*

in
***Sports and
Slimming Foods***

- High-quality,
high-performance protein
- Affordable price
- Ethical image

Nutralys®

pea protein



Satisfying current food concerns and nutritional requirements, NUTRALYS® opens up new opportunities for manufacturers looking for alternative protein sources.



Meeting consumers' expectations

● High-quality vegetable protein

- Highly purified : 86% protein, 98% digestibility*
- Balanced amino acid profile : PDCAAS 93**
- High level of amino acids, of interest for sports people.

Sport factors	pea protein content
BCAA***	17,9%
Arginine	8,7%
Glutamic acid	16,7%

*Measured on piglets **FAO 2008 ***Branched Chain Amino Acid

● Ethical image

- Dry non-GMO pea grown in France
- No allergen warning label required
- Environmentally friendly and organic compatible.



● Applications

- High-protein biscuits and pasta
- Protein powder mixes: shakes, soups
- Protein bars
- High-protein extruded snacks

Satisfying producers' requirements

● Easy to use

- Free-flowing, low dust, good dispersion, no lumps
- Great tasting final product with flavours adapted to vegetable protein
- Range: particle sizes, solubility adapted to application needs.

● Affordable price

- 100% vegetable-based range
- Dairy protein substitution
- Product affordable for sports people.



ROQUETTE

Turning nature to your advantage

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The information in this technical bulletin is to our best knowledge true and accurate but all instructions, recommendations or suggestions are made without guarantee. Furthermore, no liability is accepted if use of any product in accordance with these data or suggestions infringes any patent. Please refer to the local legislation for potential nutritional and health claims on finished products.
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www.pea-protein.com

NUTRALYS® PEA PROTEIN

BENEFITS FOR FOOD FORMULATION

PROTEIN MARKET AND FOOD INNOVATION

Demand for protein ingredients is growing as they ally nutritional and functional benefits.

- NUTRALYS® is the **new pea protein** launched by ROQUETTE. It is extracted from yellow pea (*Pisum Sativum*), grown in France (non GM)
- Its properties create several **opportunities for innovation** by the food producer.



NUTRALYS®: NUTRITIONAL BENEFITS

- The indispensable **amino acid profile** of pea products is very close to that of the **ideal protein** for human nutrition as recommended by FAO/WHO.
- It is rich in **lysine, branched chain amino acids, glutamine and arginine**, which are beneficial for growth, performance and recovery from stress.
- Its **digestibility (97%)** is similar to that of the **best animal protein**.

NUTRALYS®: TECHNOLOGICAL BENEFITS

ROQUETTE has developed an original process for the extraction of yellow pea soluble proteins while maintaining its excellent functional properties.

- It allows a **high impact on texture and good emulsifying capacity**.
- The pea isolate obtained is **spray dried and granulated** for perfect free-flowing and good dispersibility.
- NUTRALYS® is very easy to use in several food formulations:
Meat and fish products, noodles and prepared foods, cereal based and baked goods, drinks and dietetic foods...

NUTRALYS® AND FOOD FORMULATION

Nutritional advantages

- Legume protein source
- 85 % protein on D.S.
- High digestibility
- Amino acid profile

Labelling advantages

- Non GM or no GM pea authorized in EU
- Kosher, Halal
- Environmentally friendly
- Not in the European major allergen list

Functional advantages

- Neutral taste
- Emulsifying properties
- Fat and water binding
- Texture improvement
- Easy dispersion, low clast formation and viscosity

MPS ref 05 2005 – 07 2005 – 10/2005 – 05/2006



26080 LESTREM CEDEX FRANCE – Tel.: +33 (0)3 21 63 36 00 – Fax: +33 (0)3 21 63 38 50

These details are sent to you for information only, we believe them to be reliable.

APPENDIX 8: VIGNETTE

TITLE OF RESEARCH PROJECT

Exploring the influence of external product attributes on consumers' perceived acceptance of Pea Protein as a protein substitute in food products.

A Vignette / short story.

You are doing your weekly grocery shopping at your local supermarket and on your shopping list you have written in big letters that you need something for the lunch boxes, both for the kids and for your husband.

Because you are adventurous and also desperate to find something new and nutritious, you are looking for something special.

You remember hearing or reading somewhere that a diet high in protein helps with sustainability and the feeling of being satisfied. You wonder, what can you add to the lunch boxes that will be high in protein and also tasty at the same time?

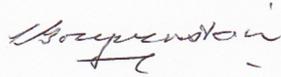
You walk up the aisle to the cereal section. They are advertising a new cereal bar which has a high pea protein content. You have never heard of "pea" protein before.

List and rank three (3) of the most important aspects that will convince you to add this cereal bar to your shopping basket? Please give a reason for each.

APPENDIX 9: ENGLISH LANGUAGE EDITING CERTIFICATION

ENGLISH LANGUAGE EDITING CERTIFICATION

This is to certify that the English language editing of this dissertation by Mrs T Quinn was done by Prof L A Greyvenstein.



Lesley Ann Greyvenstein (Prof)
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