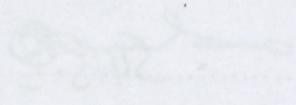


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**PERCEPTION OF CONSUMERS IN NAIROBI TOWARDS
COOKING OILS** //

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This Management Research Project is my original work and has not been submitted for
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Signed:  Date: 25-10-2007
Owino Joseph Odhiambo
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**A Management Research Project Submitted in Partial
Fulfillment of the Requirements for the Degree of
Master of Business Administration
School of Business, University of Nairobi**

September 2007

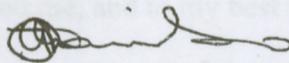
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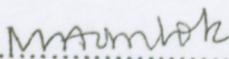
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To my late father Sylvanus Owino, whose passion for knowledge inspired me throughout my education. To my mum Anna whose perseverance and humility motivated me, and to my best friend Mercy whose moral support has been insurmountable.

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I wish to extend my gratitude to my Cousin, Oduma and friends, Rayola and Carol who supported me in a special way and particularly in collecting valuable data for this study. Honestly, without them, the study would have not been successful.

Thanks to my family, friends, and well-wishers for the belief they have in me.

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ABSTRACT

Cooking oil industry is an important sub sector in the Agricultural industry and Kenya spends over Kshs. 14 billion annually to import edible oil. Local companies have realized the potential which exists in the sub sector and about 30 companies have invested in the cooking oil industry leading to intense competition and proliferation of brands and the subsequent cannibalism of existing brands. In such a competitive environment, it is important to gauge consumers' perception about cooking oils. Perceptions are more important than reality, as it is perceptions that will affect consumers' actual behavior. This study sought to gauge the perception of consumers in Nairobi towards cooking oils with the objectives of determining the nature of these perceptions, and establishing differences in perceptions between vegetable and animal cooking oils.

The study was a descriptive survey which targeted shoppers in selected supermarkets within the Central Business District of Nairobi. Two hundred respondents were randomly sampled in four different supermarkets and a structured questionnaire given to them to fill as they shopped in the selected supermarkets. An equal number of shoppers were drawn from each outlet. A response rate of 82% was achieved. Data on consumers' personal profiles and consumers' use of cooking oil was analyzed using descriptive statistics and Chi – Square. A five – point Likert scale was used in assessing consumers' perceptions of cooking oils. The Man – Whitney U test was used to analyze differences in consumers' perceptions between vegetable and animal cooking oils.

The study found that respondents perceived vegetable cooking oil as being digestible to a small extent, has no cholesterol to a moderate extent, and healthy to a small extent. Animal cooking oil was perceived as being digestible to a large extent, has no cholesterol to a large extent, and healthy to a moderate extent. The study revealed that both male and female consumers had similar perceptions of animal cooking oil but they differed on their perceptions of vegetable cooking oil on the attribute of health. A difference in perception between vegetable and animal cooking oil was found on the attribute of health only. It is recommended that the Government and other stakeholders

should educate the public about animal cooking oil products and manufacturers to carry out consumer education programmes to correct wrong perceptions about vegetable cooking oils by consumers. A study similar to the current survey should be carried out in the emerging markets such as Yaya shopping Mall and Village market. A comparative study of rural and urban consumers should be done to assess their perceptions about cooking oils.

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CHAPTER ONE

INTRODUCTION

1.1 Background

Kenya has been undergoing several changes in the macroeconomic environment. These changes have altered marketing activities as firms strive to adapt to the new environments over which they have no control. Kotler and Keller (2007) observe that we can argue with some confidence that the marketplace is not what it used to be. It is radically different as a result of major, sometimes interlinking, societal forces that have created new behaviors, new opportunities and new challenges. The digital revolution has created an information age which promises more accurate levels of production, more targeted communications, and more relevant pricing. Technological change has also advanced production contributing to reduced cost of production and better quality products. Technological advances in transportation, shipping and communication have made it easier for companies to market in other countries and easier for consumers to buy products and services from marketers in other countries.

Many countries including Kenya have deregulated industries to create greater competition and growth opportunities. According to Menda (2002), globalization can be looked at as the creation of a market system in which national economies are integrated with each other through international markets. Most countries in the world have opened their boundaries to market forces where Governments are reducing their direct control in trade and instead facilitating the process of trade domestically and globally. The forces of globalization and liberalization led to changes in the political and legal environment in Kenya leading to reduced Government control in the private sector. The Government of Kenya has been converting state owned companies to public enterprises through reduced state ownership and management transferred to professionals to increase performance of these companies. Globalization and liberalization have led to intense competition from domestic and foreign brands, which are resulting to rising promotion costs, shrinking profit margins and increased customer

expectations. Consumers increasingly expect higher quality, service and some customization. They can obtain extensive product information from the Internet and other sources (Kotler and Keller, 2007) which permit them to shop intelligently. They are showing greater price sensitivity in their search for value.

In such a competitive environment, firms can only succeed by having better knowledge about consumers and competitors and by producing superior value than competitors. The study of consumers' self knowledge has important managerial implications. First, a firm's sales and profits can be adversely influenced by consumers' misperception of which attributes are really important (Riquelme, 2001). Second, companies that design and manufacture new products rely on customers' knowledge. If this knowledge is not perfect, marketers may be emphasizing the wrong attributes in the product or service. Thirdly, given that many industries are highly competitive, marketers need to differentiate their products from others in the market. This task is very hard to accomplish if consumers' perception of a company's products are erroneous (Riquelme, 2001).

In response to competition, firms in Kenya have taken measures such as improved product quality, improved product design, branding and brand extensions, provision of affordable products and increased customer focus. In the cooking oils industry, responses by firms to competitive pressure and changes in consumer preferences have taken the forms such as production of vegetable oils and fats which are considered free from cholesterol. According to Mukoma (2007), Kenyan Supermarkets have a large offering of vegetable cooking oils and a consumer may not realize that two similar priced brands that he or she is considering to buy are from the same manufacturer. This shows that the cooking oil industry is very competitive and survival of any firm depends on how best it understands the perception of consumers about product attributes and how these perceptions influence consumers' purchase decisions.

Consumers in Nairobi differ from those in the countryside both in their consumption patterns and preference of cooking oils. These differences are influenced by high level

of exposure by the city consumers, increasingly educated shoppers, and intense competition by firms in the cooking oil industry. The cosmopolitan nature of Nairobi city has contributed to diversity in consumption behavior of cooking oil customers. In addition, choice of cooking oil is influenced by economic factors such as personal disposable income, and increased demand for healthy products. Consumers living in slums of Nairobi make purchase decisions of cooking oils based on price versus quantity. These consumers prefer more cooking oil for less money, implying that price is the major determining factor in the choice of cooking oil. On the other hand, consumers in up – market estates make purchase decisions based on factors other than price. The level of cholesterol, taste and nutritive value are attributes that are likely to influence the choice of cooking oils among consumers in the middle and upper income class.

1.1.1 The Concept of Perception

A motivated person is ready to act. How the motivated person actually acts is influenced by his or her view or perception of the situation (Kotler and Keller, 2007). Schiffman and Kanuk (2007) defined perception as the process by which an individual selects, organizes, and interprets stimuli into a meaningful and coherent picture of the world. Price *et al.* (2004) argue that people act and react on the basis of their perceptions; the way they sense and interpret the world around them. Perception depends not only on the physical stimuli, but also on the stimuli's relation to the surrounding field and on conditions within the individual. Perceptions can vary widely among individuals exposed to the same reality. Price *et al.* (2004) further observe that consumers' perceptions are fundamental to understanding acquisition, consumption, and disposal of goods and services.

Firms need to continuously study consumer perceptions because product choice, purchase decisions and subsequent loyalty are influenced by individual consumer's picture of the world. Consumers have preconceived ideas of relationships between attributes and they will normally focus on data that support their beliefs and ignore data that do not (Hogarth and Makridakis, 1981). On the contrary, there are some studies

that have found that consumers do not possess well formed beliefs about attribute importance either (Wind and Devita, 1976; Fischhoff *et al.*, 1980). Consumers report correlation between events or between an object's attributes when in fact, there is no correlation with another unrelated event (Fischhoff, 1978). However, perceptions are more important than reality, as it is perceptions that will affect consumers' actual behavior. People can emerge with different perceptions of the same object because of three perceptual processes: selective attention, selective distortion and selective retention (Kotler and Keller, 2007). Perceptions also have a bearing on consumer value. Consumer value proposition is driven by a product's functional, emotional, and self – expressive benefits in addition to relative price. A brand – customer relationship can be based upon a value proposition (Aaker, 1996).

1.1.2 Cooking oils

Cooking oils refer to a class of organic compounds known as esters (10), which are formed by the reaction of an alcohol with organic acids (Peterson, 1974). For purposes of this study, a working definition adopted for cooking oils include all edible oils from both plant and animal sources processed, packaged and distributed to consumers through retail outlets. There are two types of cooking oils and these include vegetable cooking oils and animal cooking oils. Vegetable cooking oils are derived from the seeds of plants which grow in many parts of the world but mainly in tropical regions (Davis, 1987). Some of the many different kinds of vegetable cooking oils include: palm oil, olive oil, canola oil, pumpkin seed oil, corn oil, sunflower oil, peanut oil, grape seed oil, sesame oil, soy bean oil, and rice bran oil.

Many other kinds of vegetable cooking oils are also used for cooking. The generic term “vegetable cooking oil” when used to label a vegetable cooking oil product refers to a blend of a variety of oils often based on palm, corn, soy bean or sunflower oils (www.cookingoils.com). Animal oils are by – products from the slaughtering of animals for human consumption. Fat in animals occurs naturally and is found mainly as a layer under the skin and also surrounds and protects vital organs of the body. These oils are sourced from cattle, oil rich fish such as pilchard, sardines, pigs, and sheep. Animal oil is also found in livestock produce such as milk, and cream.

Cooking oil is one of the key sub – sectors of agriculture, with soy bean and palm oil being the leading sources in production of vegetable cooking oil in the world respectively. Oil crops have a long history in Kenya, where sesame, coconut and groundnuts have been grown for centuries. Domestic oil is principally supplied from non-oil crops particularly, cotton seed and maize germ. Domestic consumption of cooking oils and fats has been increasing against fluctuating domestic availability and the country has had to import increasing quantities of these products (Opiyo, 1987). Kenya Spends Kshs 14 billion annually to import edible oils (Masibo, 2007), making edible oil the country's second most important import item after petroleum.

In the year 2006, Kenya's domestic production of edible oils was estimated at 380,000 tones, only about one – third of its annual demand. Private sector is largely credited with the sub-sectors growth, with the Government largely playing an advisory role. The public sector players include the Ministry of Trade and Industry, Ministry of Finance and the other Government agencies like HCDA and KARI. The processing and refining companies represent the private sector and related development partners including large scale growers and small scale farmers. Currently there are about 30 cooking oil refiners in the country. The larger companies include Bidco oil refineries, Palmac oil refiners, Pwani oil refiners and Unilever. These companies are engaged in production of vegetable cooking oils, fats, copra oils and corn oil among other products. Some of the large cooking oil refiners are also involved in growing of cooking oil crops and supporting small scale farmers in better farming methods to increase the vegetable oil production in Kenya (PKF, 2005).

The coking oil industry faces many challenges which include intense competition, inadequate raw materials and high costs of production and marketing (Masibo, 2007). The changing consumer tastes and preferences also present a formidable challenge to vegetable and animal oil processors since it makes prediction of consumer purchase behavior difficult. Firms in the cooking oil industry have responded to these challenges by investing in better technology, increased brand extensions, hiring high caliber human resources and conducting research. Other companies such as Bidco are

integrating backwards to reduce costs of production and provide reliable supply of raw materials. In India, firms in the cooking oil industry have taken measures such as recruiting skilled Ivorian professional and employees with at least a general college education (Korves, 2006). This strategy has permitted a rapid and sizeable reduction in training costs while building up a qualified and motivated work force. Other measures adopted by Indian firms in the face of competitive pressure include pursuing active marketing strategies, based on promotion of products and establishment of diversified distribution networks.

1.2 Statement of the Problem

Kenya Spends Kshs 14 billion annually to import edible oils (Masibo, 2007), making edible oils the country's second most important item after petroleum. Domestic production estimated at 380,000 tones is only about one - third of its annual demand. The sector holds a huge growth potential for wealth creation, poverty alleviation and contribution to improved living standards. Edible oils industry is characterized by increased competition evidenced by many processing firms, more new product development and imports of cooking oils. As a result of strong competition in the cooking oil industry, responses by firms have resulted in proliferation of brands which have negative effect on both customers and manufacturers of cooking oils. Brand proliferation has the danger of cannibalizing other brands and reducing sales, while at the same time contributing to consumer confusion and lowering brand loyalty. The competition situation is made more complex by changing consumer tastes and preferences and for firms to remain competitive in the market and increase their market share; they need to fully understand how their products are perceived by consumers in the market.

Increased education levels, advancement in information and communication technology and more exposure to mass media have contributed to greater awareness among consumers making their purchase behavior of cooking oils complex and unpredictable. Consumers hold different value perceptions which affect directly their choice criteria and indirectly their attitudes, intentions and purchase behavior (Tsiotson, 2006). This

makes it difficult to figure out what marketing programme will work as what worked yesterday may not work today (Odongo, 2005). In a highly competitive economy with increasing rational buyers, a company can only win and retain customers by creating superior value. This involves understanding, creating, delivering, and sustaining customer value (Kotler, 2003). It is important to continuously gauge how customers perceive edible cooking oils because perceptions directly influences consumers purchase decisions and brand loyalty.

A study by Matsatsinis (2006) in Greek olive oil market proved that perceived quality is the only attribute of cooking oils considered important by consumers. This study focused on olive oil which is one type of vegetable oils and differs from current study which considers both vegetable and animal cooking oils. In Kenya, Odongo (2005) conducted a study on factors influencing consumer's perception and found that perception building has not taken root in Kenya effectively compared to developed world. However, his focus was on cosmetic products. Other studies by Oman (2005) focused on perception of value adding strategy. This study was not on perception of consumers towards cooking oils. These studies are clear indications that there exists a knowledge gap on how consumers in Kenya perceive cooking oils.

Given the contributions of cooking oils to the Kenyan economy coupled by consumer sensitivity and changes in tastes and preferences, it would be important for cooking oil companies to understand how consumers perceive their products. If such perceptions are known, the companies will be in a position to develop products that would satisfy consumer needs and deliver superior value compared to competitors' offers. It is this and the fact that the researcher found no study on perceptions of cooking oils in Kenya that has provided motivation for the proposed study. The current study sought to close the existing knowledge gap by seeking responses to the following research questions.

- i. What are the perceptions of consumers towards the cooking oils in Nairobi?
- ii. Do these perceptions differ between vegetable cooking oils and animal cooking oils?

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- i. What are the perceptions of consumers towards the cooking oils in Nairobi?
- ii. Do these perceptions differ between vegetable cooking oils and animal cooking oils?

1.3 Objectives of the study

- i. To determine the perception of consumers in Nairobi toward cooking oils.
- ii. To establish whether these perceptions differ between vegetable cooking oils and animal cooking oils.

1.4 Importance of the study

- i. Manufacturers of cooking oils will benefit by obtaining a better understanding of how their products are perceived by consumers. This understanding will enable them produce products that focus on specific customer needs as reflected in their perceptions. In addition, manufacturers' understanding of consumer perceptions has the potential of increasing sales volume, customer loyalty and reducing promotional costs.
- ii. Investors who intend to venture into cooking oils industry will understand how consumers perceive edible oils and they will manufacture products which suit consumer needs while at the same time deliver superior value to what competitors offer. Clear understanding of consumer perceptions will help investors increase their return on investments since their strategies will be backed by research findings.
- iii. Scholars and researchers will gain from research findings, and literature will indicate areas for further research.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

The marketing environment is continuously changing and providing new opportunities at the same time exposing firms to new threats. In a dynamic marketing environment where consumer behavior becomes more complex and difficult to predict, firms are obliged to study perception and develop strategies to remain relevant and competitive in the market. Consumers are more educated than ever, and they have the tools to verify companies' claims and seek out superior alternatives (Kotler and Keller, 2007). Customers estimate which product offer the most perceived value and act on it. Whether or not the offer lives up to expectation affects customer satisfaction and the probability that he will purchase the product again.

Brand value is affected by positive as well as negative perceptions. According to Schroder and Eachern (2005), organizations should focus on product value and market behavior because consumers do not believe on what you tell them; they believe what you do. The above observations require firms to put increased focus on consumers by finding out from them how they perceive the company's products. This study therefore, reviews literature on perception, and cooking oils in detail in the following sections.

2.2 Perception

Perception is the process by which people select, organize and interpret information to form a meaningful picture of the world (Kotler and Armstrong, 2004). Kibera and Waruingi (1998) define perception as the process by which we attribute meaning to incoming stimuli received through our five senses. According to Churchill (1995), perception refers to the way people gather and record information. He further argues that it is not enough to make an excellent product. Rather, for customers to be satisfied or delighted, they must perceive that the product is excellent. Selective attention is the tendency for people to screen out most of the information to which they are exposed. Marketers have to work especially hard to attract the consumer's attention. Selective distortion describes the tendency of people to interpret information in a way that will

support what they already believe. Selective distortion implies that marketers must try to understand the mindsets of consumers and how these will affect interpretations of advertising and sales information. Selective retention refers to people's tendency to retain information that supports their attitudes and beliefs. Selective retention influences the way consumers perceive products in the market.

Marketers are interested in perception because it involves what consumers believe. To provide satisfaction effectively in the market place, marketers must understand how all their marketing activities are perceived because perceptions greatly influence buyer behavior. Perception is a very complex cognitive process that yields a unique picture of the world, a picture that may be quite different from reality (Sailewu, 2001). Consumers' perceptions are fundamental to understanding acquisition, consumption and disposal of goods and services (Price *et al*, 2004). Since perceptions underlie product preferences, it is important for cooking oils manufacturers to gain in – depth understanding of how their products are perceived and develop programs aimed at building positive perceptions of such products.

2.2.1 Customer Loyalty and Perception

Consumers have varying degrees of loyalty to specific brands, stores, and companies. Oliver defines loyalty as a deeply held commitment to re – buy or re – patronize a preferred product or service in the future despite situational influences and marketing efforts having the potential to cause switching behavior (Kotler and Keller, 2007). Perceptions held by consumers about a product may influence their loyalty status towards that product. When products are perceived to possess high quality and delivering more value in return for the price charged, customers are likely to develop strong loyalty. A change in consumers' perceptions about products may result to shifting loyalty in favor of or against the perceived product. Customer loyalty is increasingly being recognized by American businesses as a path to long term business profitability (Rust and Zahorik, 1993). The longer a business firm can keep a customer the greater the life – time revenue from that customer. Furthermore, while revenues increase from the same customer, the costs of serving him/ her decline. Thus, customer

retention becomes an important source of long term business success. The key to generating high customer loyalty is to deliver high customer value (Kotler and Keller, 2007). Firms can only develop loyalty programmes after having full understanding of perceptions of customers in relation to the firm's products.

2.2.2 Factors influencing perception

Perception is the result of two different kinds of inputs that interact to form the personal pictures that each individual experiences (Schiffman and Kanuk, 2007). One type of input is physical stimuli from the outside environment; the other type of input is provided by individuals themselves in the form of certain predispositions based on previous experience. The combination of these two very different kinds of inputs produces for each individual very private, very personal picture of the world. Kibera and Warungi (1998) view perception of an object or event as the result of the interaction of two types of factors. Stimulus factors, which are characteristics of the physical object such as sizes, color, weight, or shape. Individual factors which are characteristics of an individual. These factors include not only sensory processes but also past experience with similar items and basic motivations and expectations. Because each person is a unique individual, with unique experiences, needs, wants, desires, and expectations, it follows that each individual's perceptions are also unique.

2.2.3 Perceptual processes

People can form different perceptions of the same stimulus because of three perceptual processes: selective attention, selective distortion, and selective retention. Consumers are exposed to a great amount of stimuli every day and they exercise a great deal of selectivity in terms of the attention they give to commercial stimuli (Schiffman and Kanuk, 2007). Consumers have a heightened awareness of stimuli that meet their needs or interest and minimal awareness of stimuli irrelevant to their needs. Selective attention means that marketers have to work hard to attract consumers' notice. The challenge is to explain which stimuli people will notice. Kotler and Keller (2007) report that people are more likely to notice stimuli that relate to a current need, stimulus they anticipate and stimulus whose deviations are large enough to the normal size of the stimuli.

Selective distortion is the tendency to interpret information in a way that the sender intended. Consumers will often distort information to be consistent with prior brand and product beliefs (Kotler and Keller, 2007). Selective distortion can work to the advantage of marketers with strong brands when consumers distort neutral or ambiguous brand information to make it more positive. Manufacturers of cooking oils can benefit from selective distortion by building strong brands. Price *et al.*, (2004) observe that people fail to register much information to which they are exposed in memory, but will tend to retain information that support their attitudes and beliefs. Because of selective retention, consumers are likely to remember good points about a product they like, and forget good point about competing products (Kotler and Keller, 2007). Selective retention again works to the advantage of strong brands.

2.2.4 Measures of perception

Perceptual mapping helps marketers to determine how their products appear to consumers in relation to competitive brands on one or more relevant characteristics. Perceptions of consumers can be measured using different scales. Measurement is the assignment of a number to an object which reflects the degree of possession of a characteristic by that object (Panneerselvam, 2006). Perceptions can be measured using ranking, order category sorting and ratings. In ranking methods, a respondent is asked to rank a set of stimuli based on certain attribute characteristic. The ranking methods are also used in identifying key attributes of stimuli. Rating method of data collection is the easiest and widely used method (Panneerselvam, 2006). In this method, the object which is to be rated is placed along a continuum or in any one of an ordered set of categories.

In marketing, scales used to measure perception vary from nominal, ordinal, interval and ratio scale. Ordinal scale possesses the property of order. Using this scale, one can rank objects based on certain characteristic or attribute of the objects. Interval scale has the property of order and distance and one can judge the difference between two objects. The most common scale used in measuring perception is the likert scale which was proposed by Rensis Likert. In this scale, a set of items is proposed with respect to a

particular attitudinal object (Panneerselvam, 2006). In the summated model, the total score of a respondent is obtained by adding the scores on individual items.

2.3 Perceived quality

Perceived quality has been defined as the consumer's judgment about a product's overall excellence or superiority. Perceived quality is a global assessment characterized by a high abstraction level and refers to a specific consumption setting (Zeithaml, 1988). Objective quality refers to the actual technical excellence of the product that can be verified and measured. Perceived quality differs from several concepts such as actual or objective quality which refers to the extent to which the product or service delivers superior service; product based quality which refers to the nature and quantity of ingredients, features or service included; and manufacturing quality which refers to conformance to specification, the 'zero defect' goal (Mburu, 2001). Perceived quality can not necessarily be objectively determined, in part because it is a perception and also because judgments about what is important to customers are involved. Perceived quality acts as a mediator between extrinsic cues and perceived customer value (Dodds *et al*, 1991). Perceived quality differs from satisfaction. A customer can be satisfied because he or she had low expectation about performance level. High perceived quality is also not consistent with low expectations (Mburu, 2001).

Several researchers (Mburu, 2001) have emphasized the difference between objective and perceived quality. The term objective quality refers to measurable and verifiable superiority on some predetermined ideal standard or standards. Objective quality is related to but not the same as other concepts used to describe technical superiority of a product. Consumers often judge the quality of a product or service on the basis of a variety of informational cues that they associate with the product. Some of the cues are intrinsic to the product while others are extrinsic. Schiffman and Kanuk (2007) observe that either singly or together, such cues provide the basis for perceptions of product and service quality.

Attributes that signal quality have been dichotomized into intrinsic and extrinsic cues (Zeithaml, 1988). Intrinsic cues involve the physical composition of the product. In

cooking oil, intrinsic cues would include such attributes as thickness, smell, color, flavor and taste. Intrinsic attributes can not be changed without altering the nature of the product itself and are consumed as the product is consumed (Zeithaml, 1988). Extrinsic cues are product related but not part of the physical product itself. Price, brand name, and level of advertising are examples of extrinsic cues to quality. A small number of cues, most notably those involving the product's package, are difficult to classify as either intrinsic or an extrinsic cue depending on whether the package is part of the physical composition of the product, in which case it would be an intrinsic cue, or protection and promotion for the product, in which case it would be an extrinsic cue.

What constitutes value – even in a single product category appears to be highly personal and idiosyncratic (Zeithaml, 1988). Customer perceived value (CPV) is the difference between the prospective customer's evaluation of all the benefits and all the costs of an offering and the perceived alternatives (Kotler, 2003). Perceived value is relative and subjective (Schiffman 2007). Zeithaml (1988) observes that though people agree on cues that signify quality, they differ considerably in expressions of value. Customers develop purchase behavior and product selection based on their value perceptions of a given brand of product. Firms have increasingly realized the need to assess consumer perception and build their brands on perceived value and position the products on this ground (Odongo, 2005). Firms have also realized that they can play a role in orienting, building and shaping consumers' perception of a product so as to effectively serve the perceived needs. It is evident that perception building or shaping activities have not taken root in Kenya effectively compared to their counterparts in the developed world (Odongo, 2005).

2.4 Cooking oils

Cooking oils have been one of the main food sources of energy for man from the time he was a hunter. Edible fats and oils are established from three main sources: Vegetables, animals and fish (Davis, 1987; Porter, 1978). Chemically, fats belong to the class of organic compounds known as esters (10), which are formed by the reaction of an alcohol with organic acids. The alcohol that participates in the formation of each

molecule of fat is the water-soluble trihydric glycerol (Charley, 1970). Fats and oils; whether the source is animal, vegetable or marine in origin, represent the highest source of energy per unit weight that man can consume. Both FAO and WHO recommends a range of fat intakes from 15 to about 40 per cent energy as compatible with good health as long as the supply of essential fatty acids, fat soluble vitamins and other essential nutrients is adequate and the intake of saturated and *trans* fatty acids is less than 10 per cent of the energy (Sanders, 1994). Fats and oils are essentially triglycerides, the esterification product of 1 molecule of glycerine with 3 molecules of fatty acids. The type of fatty acid and its structural position in the triglyceride molecule determines to a great extent, the physical and the chemical properties of the resulting triglycerides (Peterson, 1974).

Most fats and oils are insoluble in water but soluble in most organic solvents. They have lower densities than water even though at room temperature they may vary from liquid to solid appearing substances. Generally, liquid products are called oils while solid products are referred as fats. Both terms, fats and oils however, refer to triglycerides and represents about 95% of all fatty components in consumed foods (Peterson, 1974). Fatty acids are by far the greatest single class of the components of fats and oils. Fatty acids of greater unsaturation are more chemically reactive. The activity increases as the number of double bonds increase. Polyunsaturated oils are subject to polymerization and the unsaturated oils, having conjugated double bonds, polymerize more rapidly than those of isolated double bonds. Vegetable oils are the principal sources of such polyunsaturated oils.

The physical characteristics of fats and oils are dependent essentially upon four factors: the degree of unsaturation, the length of carbon chain of the fatty acids, the isomeric forms of the fatty acids, and the molecular configuration of the triglyceride. The types of fatty acids combined in the molecule determine the classification the triglyceride into mono-, di-, trisaturated and triunsaturated. In general, fats and oils which are solid at room temperature tend to be high in saturated acid while those oils which are liquid at room temperature tend to be more unsaturated. There has been fierce competition

between industries on the matter of fats (Peter, 1978). The butter industry versus the margarine industry is an example. But economies and availability of different fats have become the deciding factors.

2.4.1 Vegetable cooking oils

Vegetable oils are derived from the seeds of plants which grow in many parts of the world but mainly in tropical regions. The main vegetable oils are obtained from the following; coconut palm, oil palm, olive tree, groundnut or peanut plant, soy bean, sunflower, cotton seed and corn. The main sources of supply of coconut oil are the Philippines, Oceania, Malaysia and Sri Lanka. On the other hand, oil palm is mainly sourced from Nigeria, the Congo, Malaysia and Indonesia. Olive oil is uniquely high in its content of monosaturated fatty acids, although rapeseed is a very close second. It is exported mainly by Italy, Spain and Greece. In contrast to olive and rapeseed oil, sunflower oil is particularly rich in polyunsaturates. Although relatively low in oil content (between 13-20 percent) the soy bean has recently become the leading source of vegetable oil in the world. It is exported by the U.S.A, China and Brazil.

Vegetable oils are considered to be healthy and have no cholesterol while at the same time easy to digest. Polyunsaturated fatty acids obtained from vegetable oils are valued because of their potential role in reducing serum cholesterol levels (McWilliams, 1989). However, the high saturated fatty acid content of cocoa butter, coconut oil, and both palm and palm kernel oils (as much or even more saturated fatty acids than in animals) limits the nutritional merits of these specific plant oils (McWilliams, 1989). Despite their advantages, pure vegetable oils are expensive and not financially accessible by many consumers.

2.4.2 Animal cooking oils

Generally, animal fats are higher in saturated fatty acids and lower in unsaturated fatty acids than plant lipid sources. Animal fats are one of the many by-products from the slaughtering of animals for human consumption. Fat in animals occurs naturally and it is found mainly as a layer under the skin and also surrounds and protects vital organs of the body. The three main sources are from beef animals, pigs, sheep, and fish oils. Beef

animal are the largest of animals commonly killed for human consumption and a high fat is obtained as a by-product. Suet is obtained from around the kidneys and shredded. The intestinal fat is processed at low temperatures to produce two products, oleostearin and also oil, both of which can be used on the manufacture of margarine. Pigs tend to have a higher fat to meat ratio than other animals and therefore large fat quantities are available. Fish oils are obtained by the extraction of oil from the whole fish. The fish most suitable are those with a high fat content and these are mainly pelagic type of fish such as the herring, pilchard, sardines and anchovies. Unfortunately these are unsaturated oils and are susceptible to oxidative attack and must therefore be carefully refined and hydrogenated before being used in margarine and cooking fats. Fish oils are imported from Peru, Norway and Ice land. Other sources of animal fat include milk and cream. Ghee and butter are animal fat products processed from milk.

Fat plays an important role in meeting energy requirements. Although the role of fat in providing energy is dispensable (in that energy can be provided by other nutrients), it is particularly important in providing sufficient energy density in the diets of the very young (Sanders, 1994). Fat supplies 9kcal (37kj) per gram compared with 3.75kcal (16kj) for carbohydrate. Most of the energy in human milk is provided by fat. Fat provides a concentrated supply of energy and thus reduces the bulk of the diet. Sanders (1994) points out that the addition of a little fat to food can double its food energy value and that decreasing fat intake can drastically lower energy intake. For example, a 200ml glass of skimmed milk contains 66kcal/ glass compared with 132kcal in a 200ml glass of full cream milk. While this may be desirable in someone trying to restrict their energy intake, it can be undesirable for a child under the age of five years when energy requirements are relatively high.

In view of the role of fat in supplying fat – soluble vitamins and energy, it seems that relatively high fat intakes are desirable in the first five years of life. On the other hand, diets high in fat are conducive to obesity in adults, in part because of their high energy density. It has also been argued that individuals are less able to regulate energy intake as efficiently when the diet is high in fat (Sanders, 1994). Obesity is a complex disorder

and restriction of energy intake especially that supplied by fat is central to its management.

Saturated and monosaturated fatty acids can be made in the body and are often called non - essential fatty acids. Certain polyunsaturated fatty acids cannot be made in the body and need to be supplied in the diet and are termed "essential fatty acids". There are two series of essential fatty acids called the n - 6 and n - 3 series derived from linoleic and α - linoleic acids respectively. Sanders (1994) argues that we need to ensure that we have an adequate intake of these fatty acids as they are needed to make the structural fats in tissues and to make hormone - like substances called eicosanoids (prostaglandins, prostacyclins, thromboxanes, lipoxins, and leukotrienes) which are involved in regulating a number of bodily functions such as blood clotting and inflammation. The best dietary sources of these essential polyunsaturates are nuts, vegetable oils and oil - rich fish (herring, mackerel, salmon, and sardines). These oils are also an excellent source of fat - soluble vitamins.

Of nutritional interest is the fact that cholesterol occurs only in animal fats and never in plant lipids (McWilliams, 1989). Consumption of fats has been associated with dietary diseases such as heart disease, cancer and obesity. Coronary heart disease (CHD) is a major cause of death among the middle - aged and elderly in many developed countries (Sanders, 1994). The risk of CHD is primarily determined by its average plasma total cholesterol concentration. Heredity certainly plays an important role in determining plasma cholesterol concentrations but it is also influenced by the intake of dietary fat. The type of fat in the diet rather than total amount of fat determines the risk of heart disease because there are countries such as Greece with relatively high intakes of fats but low rates of heart disease. A high intake of saturated fatty acids has been linked to causing heart disease. Saturated fatty acids increase blood cholesterol levels particularly the cholesterol carried by low density lipoprotein (LDL), whereas *cis* unsaturated fatty acids either do not affect blood cholesterol levels or even lower them (Sanders, 1994). In Mediterranean countries, such as Greece, they have low intakes of saturated fatty acids and high intakes of monosaturated fatty acids.

For the prevention of heart disease, the intake of saturated fatty acids should be as low as practically possible. The main dietary sources of saturated fatty acids are milk products, meat fat and visible fats. Sanders (1994) claims that it is now known that the replacement of saturated fatty acids found in vegetable oils is often a more efficient way of lowering blood cholesterol levels than increasing the intake of complex carbohydrate foods. These unsaturated oils are also the major dietary source of vitamin E which may help protect against heart disease by preventing the oxidation of low density lipoprotein (a process believed to lead to atherosclerosis). Thus it may be more effective to replace saturated fatty acids than to cut down on all fat.

The industrial hardening of fats by hydrogenation converts the *cis* monounsaturated and polyunsaturated fatty acids into *trans* unsaturated and saturated fatty acids. These hydrogenated fats are used to make biscuits and margarine. Recent research suggest that these *trans* unsaturated fatty acids may increase risk of heart disease as well as increase the level of harmful LDL cholesterol like saturated fatty acids but in addition decrease the level of protective HDL cholesterol (Sanders, 1994). From the research evidence, it appears that palm oil is a healthier choice than coconut oil, hydrogenated fats, lard or butter. High intakes of total fat are associated with increased risk of cancer of the breast, colon, gall bladder, pancreas and prostate. However, most of these associations are made from comparisons between different countries rather than from prospective studies in the same country.

2.4.3 Cooking oils and consumer perception

According to Fishbein (1967) and Lancaster (1966) consumers always relate a product with a set of attributes. Therefore, consumers take into account multiple features (attributes - criteria) of the products and use them to build into their minds a model of preferences (Matsatsinis *et al*, 2007). Study by Matsatsinis and Samaras (2007) found that the vast majority of olive oil customers preferred plastic bottles and 97.2% agreed that olive oil is the healthiest oil. It was also revealed that Greek oil consumers prefer buying brand name rather than olive oil in bulk and 63.3% of the consumers were brand

loyal. These findings agree with conceptual literature on perceptions as observed by both Kotler and Keller (2007) and Schiffman and Kanuk (2007).

The notion that processed convenience foods are contributing to an obesity epidemic has led to litigation proceedings against McDonald's (Schroder and McEachern, 2005). At the same time, a number of fast food companies and food manufacturers have reviewed the fat and sugar contents of their product ranges, and reconsidered the size of the portions they offer. In their study, Schroder and McEachern (2005) found that 61% of respondents stated they intended to buy only healthy foods. Health concerns were expressed mainly regarding the fat content (64%), calories (58%), and sugar (53%). These findings clearly show that consumers are increasingly getting concerned about products they buy and that their perceptions whether positive or negative have great bearing on the choices of products they make.

Research by Wiseman (1994) found that most New Zealanders are aware of dietary recommendations and a high percentage are trying to reduce the fat content of their diet and to eat more fruit and vegetable. This is an indication that consumers in different parts of the world are becoming more health conscious and increasingly discerning in the choice of cooking oils. Most people (91 per cent) in New Zealand believed that less fat should be eaten to reduce the risk of heart disease and avoiding cholesterol was considered important by 84 per cent of respondents.

It is though not necessarily easy to change the business to meet the needs of customers than to try to persuade customers to change to meet the needs of the business (Agar, 1999). After all, in many cases the customer can choose not to buy or to buy elsewhere. Cooking oil manufacturers must fully understand what influences and how consumers make purchase decisions. Agar (1999) argues that a business should make what will sell, not try to sell what it can make or likes to make. He adds that manufacturers may choose what suits the business without thinking through the effect on potential customers, because it is easier to see the situation from the internal perspective than it is to see it from inside the consumer's head. If only business owners could get inside the

minds of their customers and think like them, they would be able to use that insight to run a more successful business. This can only be achieved by studying consumer perceptions, comprehending consumer preferences and developing cooking oils which match consumer tastes and preferences while at the same time making the products accessible to customers both physically and financially.

2.5 Summary of literature review

From literature, it is evident that perception influences consumer preferences of products and brand loyalty. Perception is influenced by the interactions of stimulus and consumer individual factors. Customers develop purchase behavior and product selection based on their value perceptions of a given brand of product. This means that Kenyan companies need to understand perceptions of their target markets in order to develop marketing programmes that appeal to customers. Consumers hold different perceptions of cooking oils from vegetable and animal sources. Vegetable cooking oils are considered healthier by consumers. Literature shows that cholesterol occurs only in animal fats and never in plant sources implying that Kenyans should reduce consumption of animal oils to cut down health risks associated with cholesterol. Empirical findings indicate that perceived quality is the only attribute of cooking oils that is considered important by consumers. Manufacturers of cooking oils in Kenya must focus on continuous investigation about how consumers perceive the quality of cooking oil brands so that they can respond by engaging themselves in perception building for the various brands of cooking oils. Literature suggest that no study on consumer perceptions of cooking oil has been done in Kenya and the current study was aimed at bridging the existing knowledge gap.

CHAPTER THREE: RESEARCH METHODOLOGY

3.1 Research design

The study was a descriptive survey. The objective of a descriptive study is to learn who, what, when, where, and how of a topic (Cooper and Emory, 1995) and given that this study was aimed at determining how consumers perceive cooking oils, it fits descriptive study appropriately.

3.2 Population of study

The population of interest in this study comprised of all consumers in Nairobi. The city was considered for the study because of its cosmopolitan nature and diversity of living standards. Nairobi consumers are also more educated, health conscious, exposed and aware of cooking oils from vegetable and animal sources and gave informed responses leading to realistic and representative findings.

3.3 Sample size and sampling design

The sample size consisted of 200 consumers selected through random sampling, and given questionnaires to fill as they shopped within selected supermarkets within the Central Business District. These supermarkets included Nakumatt (Lifestyle), Tusksys (Pioneer), Woolmatt (Moi Avenue), and Uchumi (Railways). They were specifically considered because they handle relatively huge traffic flows of shoppers and they also have various brands of cooking oils as well as various prices. An equal number of shoppers were drawn from each outlet. The Central Business District was preferred because consumers in the outskirts of Nairobi would not differentiate between cooking oils from animal and vegetable sources. A similar study by Mulewa (2006) in Nairobi used a sample size of 200. Deming argues that the quality of a study is often better with sampling than with a census (Cooper and Emory, 1995). He further suggests that sampling possesses the possibility of better interviewing (testing), more thorough investigation of missing, wrong, or suspicious information, better supervision, and better processing than is possible with complete coverage.

3.4 Data collection

Data was collected using a structured questionnaire. The questionnaires were given to respondents to fill as trained interviewers under close supervision by the researcher waited to pick the questionnaires. They also explained to the respondents questions that were not well understood. Data was collected on Mondays, Wednesdays, Saturdays, and Sundays. This was because the researcher wanted to gauge patterns of purchase around the week. It also provided opportunity to interview consumers who were busy during week days while at the same time spread responses throughout the week. Respondents included both men and women. The questionnaire was divided into three parts, part A was concerned with consumers personal profiles, part B dwelt on consumer usage of cooking oils, while part C targeted information on consumer perception of cooking oils.

3.5 Operational definitions of attributes of cooking oils

The attributes of cooking oils tested were operationalized in table 1 below. A five – point likert scale was used to determine the extent of perception of consumers on these attributes.

Table 1: Operational attributes of cooking oils

Attributes of cooking oil	Relevant issues/ elements	Relevant question
Taste	Good	15, 16
	Bad	
Quality	Ease of digestion	15, 16, 17, 18
	Shelf life	
	Low cholesterol	
	Healthy	
Price	Expensive	15, 16
	Affordable	
Source	Vegetable	10, 15, 16
	Animal	
Nutritive value	Energy	15, 16
	Vitamins	

3.6 Data analysis

Data was analyzed using descriptive statistics. Mean scores were used to determine the extent to which cooking oil attributes influence perception. Standard deviations were used to determine the varying degrees of the difference in which product attributes influence consumer preference of cooking oils. Chi – square test was used to test the relationship between respondents' occupation and choice of brands of cooking oils. Mann – Whitney U test was used to test difference in perceptions between consumers of vegetable cooking oils and consumers of animal cooking oils. This test is based on the ranks of the observations of two samples put together. The Mann – Whitney U test is a nonparametric test that can be used to analyze data from a two – group independent design where measurement is at least ordinal.

CHAPTER FOUR

DATA ANALYSIS AND DISCUSSIONS

4.1 Introduction

This chapter presents analysis and findings of the research together with their possible interpretations. Out of the 200 sampled respondents, only 166 responded, representing 82% response rate, which the researcher considered adequate and sufficient for the study purposes of data analysis.

4.2 Demographic profiles of the respondents

The demographic profiles considered in this research included age, gender, marital status, occupation, highest level of education and monthly household income.

4.2.1: Age of respondents

Table 2: Age of respondents

Age (in years)	Frequency	Percent
Up to 18yrs	5	3.0
19-28yrs	82	49.4
29-38yrs	53	31.9
39-48yrs	18	10.8
49-58yrs	7	4.2
59yrs & above	1	.6
Total	166	100.0

Source: Research Data

Most of the respondents were of the age between 19 – 28 as represented by 49.4%. Consumers aged between 29 – 38 were 31.9%, while those under 18 were only 3%. The findings indicate that majority of consumers who shop in Supermarkets in the Central Business Districts are adults of the age between 19 – 38 (81.3%). It is important to mention that consumers whose age is 59 years and above are negligible (0.6%) shoppers in Supermarkets within the Central Business District. This may be explained by the fact that most shoppers living in Nairobi are adults who are in the working age

category and those with 59 years and above are either retired and staying in rural areas or prefer shopping outlets close to their residential areas.

4.2.2: Gender of respondents

Table 3: Gender of respondents

Gender	Frequency	Percent
Male	48	28.9
Female	118	71.1
Total	166	100.0

Source: Research Data

Out of the one hundred and sixty six (166) respondents, 118 were female which represented 71.1% of the population, while male respondents were represented by 28.1% showing that many females as compared to men shop from Supermarkets in the Central Business District. These findings agree with shopping habits of Kenyans where females are expected to be regular shoppers as compared to males.

4.2.3: Marital Status

Table 4: Marital status

Marital status	Frequency	Percent
Single	85	51.2
Married	80	48.2
Widowed	1	.6
Total	166	100.0

Source: Research Data

Respondents were asked to indicate their marital status by showing whether they were single, married, divorced, or widowed. A simple majority (51.2%) of the respondents were single and 48.2% were married. Only 0.6% of the consumers were widowed.

4.2.4: Occupation

Table 5: Occupation

Occupation	Frequency	Percent
Business	38	22.9
service sector	26	15.7
Government	24	14.5
Private	58	34.9
Housewife	2	1.2
Student	16	9.6
Unemployed	2	1.2
Total	166	100.0

Source: Research Data

Respondents were spread in different occupations. Most respondents (34.9%) were working in the private sector, while 22.9% were in business. Respondents working in the service sector were represented by 15.7% which closely matches those working for the government (14.5%). Unemployed respondents were only 1.2% and a similar representation was also observed in the number of housewife respondents (1.2%).

4.2.5: Highest Level of Education

Table 6: Highest level of education

Level of Education	Frequency	Percent
Primary	2	1.2
Secondary	54	32.5
Diploma	56	33.7
Degree	41	24.7
Postgraduate	13	7.8
Total	166	100.0

Source: Research Data

The above results indicate that minority (1.2%) of the respondents are educated up to primary level. Consumers who had secondary level of education were represented by 32.5%, while those with College Diploma were 33.7% showing that consumers with Secondary education almost equal those with Diploma level of education. Consumers

with University Degree were 24.7% of the sampled respondents while those with Postgraduate training were only 7.8%. The findings are clear indication that Nairobi consumers are well educated and are likely to make informed product choice.

4.2.6 Monthly household income

Table 7: Monthly household income

Monthly income (Kshs)	Frequency	Percent
less than 20,000	82	49.4
20,000-29,999	27	16.3
30,000-39,999	13	7.8
40,000-49,999	11	6.6
50,000-59,999	11	6.6
60,000 and above	22	13.3
Total	166	100.0

Source: Research Data

Respondents were spread among different income brackets. However, close to half of the sampled respondents (49.4%) reported that they earn less than Kshs.20,000 per month while those whose monthly income is in excess of Kshs.60,000 were represented by 13.3%. These results reflect disparities in the distribution of income among Kenyans. The findings also indicate that majority (65.7%) earn less than Kshs.1,000 per day. These findings are clear indication that most respondents could afford low cost cooking oils and that very few could afford premium cooking oils such as Olive oil and Ghee. The findings are consistent with data on level of education where consumers with at least University Degree were represented by 32.5% whereas those earning above Kshs. 30, 000 were represented by 34.2%.

4.3 Consumer Usage of Cooking Oils

Respondents were asked to indicate product used (whether solid fats or liquid oils, or both), type of cooking oil, brand name, and source of awareness about the brand. In addition, they were requested to indicate how long they had used brand of cooking oil and in what quantities per month.

4.3.1 Product used for cooking purposes

Table 8: Product used for cooking purposes

Product type (Physical state)	Frequency	Percent
cooking fats (solid)	46	27.7
cooking oils (liquid)	87	52.4
Both	33	19.9
Total	166	100.0

Source: Research Data

The findings indicate that majority of respondents (52.4%) prefer cooking oils which are in liquid state as compared to only 27.7% of consumers who preferred solid cooking fats. Consumers who use both liquid and solid cooking oils were represented by 19.9%. These findings indicate that about 20% of the respondents are not hardcore loyal to any one physical state of cooking oil. The results have strategic implications for manufacturers of cooking oils since it indicates that they should concentrate on producing more of liquid cooking oil than solid cooking fats for consumers in Nairobi.

4.3.2 Type of cooking oil used by consumers

Consumers were asked to indicate the type of cooking oil they use based on raw material source. The results are indicated in the table below:

Table 9: Type of cooking oil used by consumers

Type of cooking oil use	Frequency	Percent
Extra virgin olive oil	8	4.8
sunflower oil	23	13.9
Soya oil	1	.6
Extra virgin coconut oil	1	.6
Corn oil	46	27.7
Palm oil	6	3.6
not sure	81	48.8
Total	166	100.0

Source: Research Data

The results indicate that most consumers are not sure (48.8%) of the type of cooking oil they use based on the source of raw materials. However, most consumers who were aware of the type of cooking oil they use reported that they buy corn oil (27.7%) while sunflower oil consumers were represented by 13.9%. Lack of awareness of type of cooking oil used could be influenced by generic classification by manufacturers of cooking oil as '*Vegetable Cooking Oil*'.

4.3.3 Brands of cooking oil used

An open ended question was posed to establish the brands of cooking oils used by consumers. As shown by Table 9 below, it is evident that established brands control large market share. Elianto was found to be the dominant brand with a market share of 28.9% among the respondents and incidentally it is a corn oil; confirming that consumers prefer corn oil as shown in 4.7.2 above. On the other hand, Captain Cook which is made from corn had a small market share represented by 2.4%. This implies that KAPA Oil Refineries, the manufacturer of Captain Cook have not put in place good competitive and marketing strategies for this product and that they may be spending inadequate resources in promoting their product. Kasuku, Kimbo, and Golden fry are close competing brands as represented by 13.3%, 11.4%, and 10.8% share of the market respectively. The findings showed that BIDCO Oil Refiners have leading brands followed by KAPA Oil Refineries. The results are consistent with the arguments in the Problem statement which aver that brand proliferation has the danger of cannibalizing other brands. This is evident among lesser used brands such as Bahari, Ufuta, Yellow Gold, and Mallo. The market share occupied by Rina (13.9%) is an indication that cooking oil from sunflower source is gaining acceptance among consumers in Nairobi.

Brand	Market Share (%)	Source of Raw Material
Elianto	28.9%	Corn
Captain Cook	2.4%	Corn
Kasuku	13.3%	Sunflower
Kimbo	11.4%	Sunflower
Golden fry	10.8%	Sunflower
BIDCO	13.9%	Sunflower
KAPA	13.9%	Sunflower
Bahari		Sunflower
Ufuta		Sunflower
Yellow Gold		Sunflower
Mallo		Sunflower
Rina	13.9%	Sunflower

Table 10: Brands of cooking oils used by consumers

Brand of cooking oil used	Frequency	Percent
Elianto	48	28.9
Captain cook	4	2.4
Fresh fry	11	6.6
Olive oil	8	4.8
Kimbo	19	11.4
Kasuku	22	13.3
Goldenfry	18	10.8
Soya oil	1	.6
Mallo	1	.6
Tilly	4	2.4
Yellow gold	3	1.8
Ufuta	3	1.8
Bahari	1	.6
Rina	23	13.9
Total	166	100.0

Source: Research Data

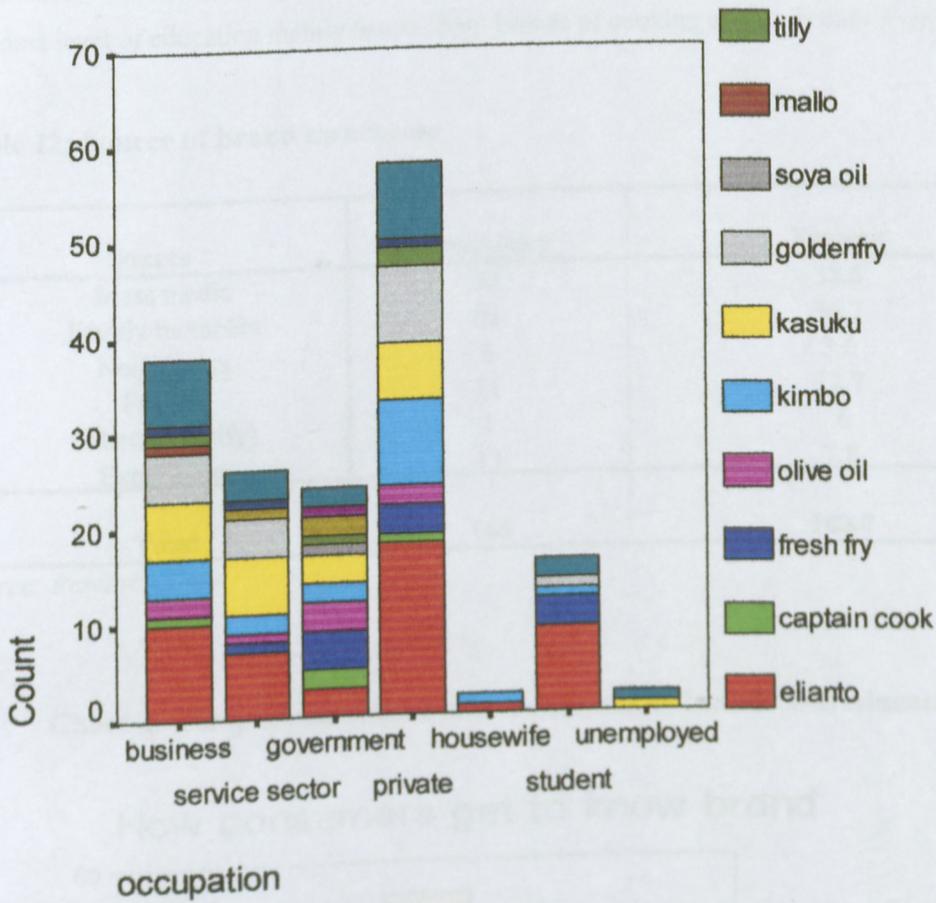
It was felt that consumers' choice of brand be analyzed on the basis of occupation. As shown on Chart 1 below, Elianto was popular among all occupational groups except the unemployed. The brand is most popular among people in the private sector followed by those in business and students. One important finding was that housewives and the unemployed use only two types of brands while those working for the Government use the most number of brands (11 brands). However, results of chi - square test shown in table 11 below suggest that the choice of brand of cooking oil is independent of respondent's occupation.

Table 11: Test of association between occupation and brand choice

Test of association	Occupation	Name of brand of cooking oil
Chi-Square(a,b)	100.675	191.590
Degree of freedom	6	13
Asymp. Sig.	.000	.000

Source: Research Data

Chart 1: Use of brands of cooking oils along occupational line



4.3.4 Source of brand awareness

Respondents were asked to indicate how they got to know the brand of cooking oils they use. The results presented in table 11 below show that most consumers got to know brands through the mass media (38.6%) and family members (36.7%). The findings are consistent with Kotler and Allen (2007) arguments on brand awareness. Results also have strategic implications for manufacturers of cooking oil in formulating, implementing and monitoring marketing communication strategies.

A comparison of source of awareness of brands and level of education shown on chart 2 below revealed that respondents with primary level of education learn about brands from family and mass media sources. While these observations were made among respondents with above post primary level of education, variations existed and respondents with University degree were risk averse as it was evident in their trial rate of brands. Respondents with postgraduate training

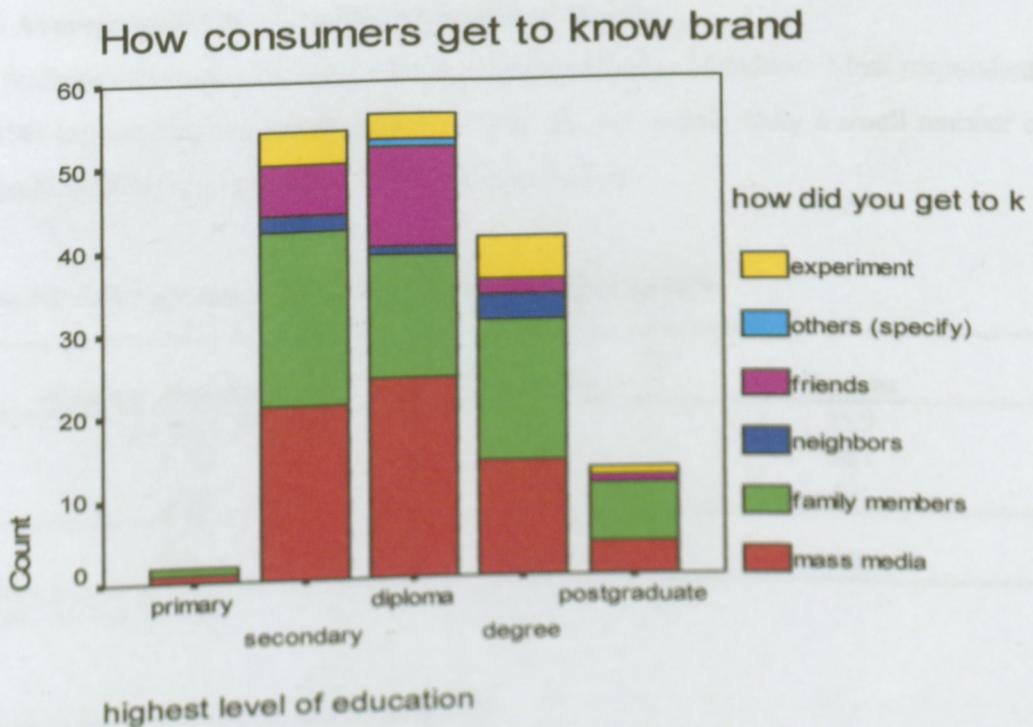
relied more on family sources in learning about brands of cooking oils while those with Diploma level of education mainly learnt about brands of cooking oils from their friends.

Table 12: Source of brand awareness

Source	Frequency	Percent
Mass media	64	38.6
Family members	61	36.7
Neighbours	6	3.6
Friends	21	12.7
Others (specify)	1	.6
Experiment	13	7.8
Total	166	100.0

Source: Research Data

Chart 2: Comparison of source of awareness of brands and education levels



4.3.5 Years of brand use by consumers

Respondents were asked to indicate the length of time they had used cooking oil and the results are shown on the table below.

Table 13: Years of brand use by consumers

Years of brand use	Frequency	Percent
less than 2 yrs	28	16.9
2-5yrs	53	31.9
6-9yrs	24	14.5
10yrs and above	61	36.7
Total	166	100.0

Source: Research Data

The results show that most respondents had used their cooking oil for more than 10 years (36.7%). Those who had used their brands for between 2 to 5 years were represented by 31.9%.

4.3.6 Average quantity of cooking oil used per month

The findings of average cooking oil are presented in table 13 below. Most respondents (68.1%) use cooking oil of between 2 – 5 Kg/ Lt. per month. Only a small number of respondents (6%) use between 6 – 9 Kg/ Lt. per month.

Table 14: Average quantity of cooking oil used per month

Quantity of cooking oil	Frequency	Percent
less than 2lt.	43	25.9
2-5lt.	113	68.1
6-9lt.	10	6.0
Total	166	100.0

Source: Research Data

4.4 Consumer Perception of Cooking Oils

Consumers' perception of cooking oils was assessed based on specific attributes of both vegetable cooking oil and animal cooking oil. A five – point Likert scale was used in

extent; taste good to a small extent and nutritive to a moderate extent. Specifically, to a small extent (mean = 2.3), respondents felt that vegetable cooking oil is easily digested. This means that vegetable cooking is perceived as not very digestible by respondents. Vegetable cooking oil was perceived to a moderate extent to have long shelf life (mean = 2.5). Respondents to moderate extent perceived vegetable cooking oil to have no cholesterol (mean = 2.7). This is in contrast with claims made on the package material of vegetable cooking oil by manufacturers which indicate 0% cholesterol or complete absence of cholesterol in vegetable cooking oil products. The standard deviation of 1.44 indicates that no cholesterol to a great degree influences consumer preference of vegetable cooking oils. Vegetable cooking oils were perceived as healthy to a small extent (mean = 2.1) by respondents implying that consumers are negatively predisposed to vegetable cooking oils on the basis of health. The standard deviation of 1.33 indicates that respondents have varied perception on whether or not vegetable cooking oils are healthy.

Respondents to a small extent (mean = 2.0) perceive vegetable cooking oil as tasting good. A similar rating was placed on perception of vegetable cooking oil expense. Respondents to a small extent (mean = 2.2) perceived vegetable cooking oil as expensive implying that they were seen as affordable by respondents. To a moderate extent (mean = 2.6), respondents felt that vegetable cooking oil is rich in both energy and vitamins. This observation agrees with vegetable cooking oil manufacturer's claims on the package material. The standard deviation of 1.34 shows that respondents' perception about presence of vitamins in vegetable cooking oils is widely spread from the mean perception.

Respondents perceived to a large extent (mean = 3.8) animal cooking oils to be easily digested. This is contrary to findings by Wiseman (1994) which found that majority of New Zealanders observe that less fat should be eaten to reduce heart disease. Long shelf life had a mean score of 3.4 implying that animal cooking oil was perceived to a moderate extent to have long shelf life. However, respondents to a large extent (mean = 3.6) perceived animal cooking oil to have no cholesterol. This is contrary to

literature on nutrition and health which argue that animal oils have high levels of cholesterol. The results also deviate from findings by Wiseman (1994); and Matsatsinis *et al.*, (2007) which reported high cholesterol level in animal cooking oils. The finding is also in contrast to scientific studies which link high cholesterol levels to animal cooking oils and obesity (McWilliams, 1989). The results show that consumer perception may be far from reality. The standard deviation of 1.57 is an indication that respondents' perception of absence of cholesterol in animal cooking oils was widely spread from the mean perception. This implies that different consumers hold varied perceptions regarding absence of cholesterol in animal cooking oils.

Respondents to a moderate extent (mean = 3.4), perceived animal cooking oil as healthy. Again, this finding deviates from scientific literature which link animal oils to obesity, cancer, and heart disease (Sanders, 1994). However, the standard deviation of 1.43 implies that respondents hold varied extents of perception as to whether animal cooking oils are healthy. Respondents to a moderate extent (mean = 3.1) perceived animal cooking oil as having good taste. This rating was equally shared by respondents' on expense where it was observed that animal cooking oil is moderately perceived as expensive (mean = 3.1). Animal cooking oil was moderately perceived to be rich in Vitamins (mean = 2.8) and rich in energy (mean = 3.3). The perception of animal cooking oil on energy concurs with available literature on energy which argues that animal cooking oil provides a concentrated supply of energy (Sanders, 1994). The standard deviations of the attributes of price and energy imply that perceptions of these attributes were widely spread away from the mean perception of respondents.

Table 16: Consumers' Perception of Animal Cooking Oils

Operational dimension of animal cooking oils	Mean	Std. Deviation
Quality		
Easily digested	3.7651	1.31619
Long shelf life	3.4458	1.37292
No cholesterol	3.5904	1.56891
Healthy	3.3675	1.41974
Taste good	3.1325	1.42931
Price		
Expensive	3.0542	1.48633
Nutritive Value		
Rich in energy	2.7530	1.40750
Rich in vitamins	3.3253	1.33583

Source: Research Data

4.5 Differences in Perception between Animal and Vegetable cooking oils

The researcher used the Man – Whitney U test to assess the differences in consumer perceptions between cooking oils from animal and vegetable sources. The results are displayed in tables 16 and 17 below. Tests of significant differences were done and attributes with results lesser than 0.05 were considered to have significant difference among the respondents.

The results presented in table 16 below show that there was no difference in perceptions of male and female respondents in all considered attributes of vegetable cooking oil except on the attribute of health. The results indicate that male and female respondents have similar perceptions of vegetable cooking oils but, differ in their perceptions on whether vegetable cooking oils are healthy. Difference in perceptions of vegetable cooking oils based on health may be attributed to different experiences the

male and female respondents have with vegetable cooking oils. Females are more conscious about their weight and, it is more likely that their belief that vegetable cooking oils contribute to addition of weight may have influenced difference in perceptions of the female and male respondents.

As shown on table 16 below, all female and male respondents did not differ in their perceptions of animal cooking oils along all the considered attributes since all calculated values were higher than 0.05. The results indicate that there are no differences in perceptions between vegetable cooking oil and animal cooking oil by male and female respondents except on the attribute of health. Both male and female respondents had similar perceptions of animal cooking oils.

Table 17: Test Statistics (a) of vegetable cooking based on gender

Test	veg cooking oils easily digested	veg cooking oils have long shelf life	veg cooking oil have no cholesterol	veg cooking oil are healthy	veg cooking oil taste good	veg cooking oil is expensive	veg cooking oil rich in energy	veg cooking oil rich in vitamins
Mann-Whitney U	2679.500	2702.000	2463.000	2306.000	2600.500	2721.000	2732.500	2556.500
Wilcoxon W	3855.500	3878.000	9484.000	9327.000	9621.500	9742.000	3908.500	9577.500
Z	-.564	-.480	-1.349	-1.995	-.874	-.415	-.366	-1.007
Asymp. Sig. (2-tailed)	.573	.631	.177	.046	.382	.678	.715	.314

a. Grouping Variable: gender

Table 18: Test Statistics (a) of animal cooking oil based on gender

Test	ani cooking oil easily digested	ani cooking oil have long shelf life	ani cooking oil have no cholesterol	ani cooking oil are healthy	ani cooking oil taste good	ani cooking oil is expensive	ani cooking oil rich in energy	ani cooking oil rich in vitamins
Mann-Whitney U	2383.000	2575.000	2549.500	2468.500	2421.000	2652.000	2810.500	2621.500
Wilcoxon W	3559.000	3751.000	3725.500	3644.500	3597.000	9673.000	3986.500	3797.500
Z	-1.673	-.941	-1.062	-1.330	-1.496	-.656	-.078	-.769
Asymp. Sig. (2-tailed)	.094	.347	.288	.184	.135	.512	.938	.442

a. Grouping Variable: gender

Table 19: Test statistics (a) of vegetable cooking oil based on marital status

Test	veg cooking oils easily digested	veg cooking oils have long shelf life	veg cooking oil have no cholesterol	Veg cooking oil are healthy	Veg cooking oil taste good	veg cooking oil is expensive	veg cooking oil rich in energy	veg cooking oil rich in vitamins
Mann-Whitney U	3094.000	3202.000	3123.500	3135.000	3211.500	3384.000	3057.000	3118.500
Wilcoxon W	6334.000	6442.000	6778.500	6790.000	6451.500	7039.000	6712.000	6773.500
Z	-1.035	-.669	-.925	-.920	-.652	-.055	-1.155	-.942
Asymp. Sig. (2-tailed)	.301	.503	.355	.357	.515	.956	.248	.346

a. Grouping: Marital status

Results in table 18 above suggest that married and single respondents had similar perceptions of vegetable cooking oil along all the attributes that were considered. The results show that consumers' marital status has less influence on the perceptions they form about cooking oils. Being a basic commodity, it is likely that consumers accumulate product knowledge through experience in the family of orientation and that the family of procreation has little influence on adult consumers' perceptions of vegetable cooking oil. These findings have implications for manufacturers of cooking oil. It implies that the manufacturers should start positioning their brands in the minds of consumers in the early stages of future customers by developing marketing programs and promotions targeting parents in the family of procreation. This is because children learn about brands of cooking oils from their parents.

Table 20: Test statistics (a) of animal cooking oil based on marital status

Test	animal cooking oil easily digested	animal cooking oil have long shelf life	animal cooking oil have no cholesterol	Animal cooking oil are healthy	animal cooking oil taste good	animal cooking oil is expensive	animal cooking oil rich in energy	animal cooking oil rich in vitamins
Mann-Whitney U	2839.000	3115.000	3111.000	3321.000	3016.500	3307.000	2826.500	3264.500
Wilcoxon W	6494.000	6770.000	6351.000	6976.000	6256.500	6547.000	6481.500	6919.500
Z	-1.915	-.955	-.993	-.265	-1.278	-.310	-1.913	-.453
Asymp. Sig. (2-tailed)	.055	.340	.321	.791	.201	.756	.056	.651

a. Grouping Variable: marital status

Both male and female respondents did not significantly differ in perceptions of animal cooking oil along all attributes that were investigated. When comparisons of differences in perceptions between vegetable and animal cooking oil was done among married and single respondents, no difference was recorded along all attributes implying that respondents hold same perceptions about animal cooking oils. The absence of difference in perceptions of animal cooking oil by respondents may be explained by limited exposure to animal cooking oil. Inspection within the sampled supermarkets during data collection revealed that animal cooking oils are expensive and most likely unaffordable to majority of consumers. As a result, it is likely that very few respondents used animal cooking oil such as ghee and consequently had poorly developed perceptions about the products.

5.2 Summary

From the study findings it was found that majority of respondents use liquid cooking oils and Khano is the dominant brand among consumers. Respondents perceived vegetable cooking oil as being easily digestible to a small extent (mean = 2.3), have no cholesterol to a moderate extent (mean = 2.7) and healthy to a small extent (mean = 2.4). On the other hand, animal cooking oil was perceived by respondents as being easily digestible to a large extent (mean = 3.8), have no cholesterol to a large extent (mean = 3.6), healthy to a no-large extent (mean = 3.4), and thus could be a moderate extent (mean = 3.1). The findings indicate that quality, price, and nutritional value of cooking oils are significant determinants of consumer purchase decisions. The large standard deviations of 1.44 and 1.37 for cholesterol in vegetable and animal cooking oils respectively indicate that consumers have varied factors of perceptions of absence of cholesterol in both vegetable and animal cooking oils.

Respondents did not differ in their perceptions of attributes of vegetable cooking oil except on the health. Both married and single respondents showed no difference in perceptions of animal cooking oils on all attributes. A difference in perception between vegetable and animal cooking oil was observed along the attribute of health.

CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

This chapter presents a summary of the findings of the study as well as conclusion gathered from analysis of the data. Findings have been summarized alongside the objectives of the study, conclusions have been drawn and recommendations given. The study was a survey on Perception of consumers in Nairobi towards cooking oils. It was aimed at determining the perception of consumers toward cooking oils in Nairobi, and establishing difference in perception between vegetable and animal cooking oils.

5.2 Summary

From the study findings it was found that majority of respondents use liquid cooking oils and Elianto is the dominant brand among consumers. Respondents perceived vegetable cooking oil as being easily digestible to a small extent (mean = 2.3); have no cholesterol to a moderate extent (mean = 2.7); and healthy to a small extent (mean = 2.1). On the other hand, animal cooking oil was perceived by respondents as being easily digestible to a large extent (mean = 3.8); have no cholesterol to a large extent (mean = 3.6); healthy to a moderate extent (mean = 3.4); and taste good to a moderate extent (mean = 3.1). The findings indicate that quality, price, and nutritive value of cooking oils are significant determinants of consumer purchase decisions. The large standard deviations of 1.44 and 1.57 for cholesterol in vegetable and animal cooking oils respectively indicate that consumers have varied extents of perceptions of absence of cholesterol in both vegetable and animal cooking oils.

Respondents did not differ in their perceptions of attributes of vegetable cooking oil except on the health. Both married and single respondents showed no difference in perception of animal cooking oils on all attributes. A difference in perception between vegetable and animal cooking oil was observed along the attribute of health.

5.3 Conclusion

From the findings and discussion, it is evident that consumers' perception of animal cooking oil deviates from available literature on nutrition and health research. This may be an indication that consumers have little knowledge about animal cooking oils. It could also show that respondents are not regular consumers of animal cooking oils. Despite claims by manufacturers of vegetable cooking oils that their products are cholesterol free and healthy, consumers are of the opinion that vegetable cooking oil has some cholesterol and are only healthy to a moderate extent. Brand name is the most likely driver of purchase of vegetable cooking oil and producers need to spend resources in building their brands.

5.4 Recommendations

From the study findings, it is clear that brand name influences consumers choice of vegetable cooking oil. Consequently, manufacturers of these products need to spend resources in positioning and building their brands. Mass media should be the most preferred means of communicating cooking oil products to consumers. Since consumers hold different perceptions about animal cooking oil that are inconsistent with scientific reality, there is need for the Government and other stakeholders to educate the public about these products. Similarly, manufacturers need to carry out consumer education programmes to correct wrong perceptions about vegetable cooking oils by consumers. Manufacturers of cooking oils should carry out regular studies to gauge consumer perceptions about their products to enhance better match between product offer and positive consumer perceptions.

5.5 Limitations of the study

The study was carried out within the Central Business District limiting findings to a small area; had the whole of Nairobi residents been studied the results would be different. In addition, emerging markets in Nairobi such as Yaya Shopping Mall, Village market, and Sarit Centre were locked out and as a result, high income consumers who are more aware about animal oil such as ghee were locked out. A third limitation is that the study did not take into consideration the perception of rural consumers and as result, findings may not

be binding all over the county. Finally, consumer perceptions are subject to change and these findings may not hold in the future due changes in attributes of the products offered and changes in factors in the external environment.

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5.6 Suggestions for future research

Future research need to investigate factors influencing low consumption levels of animal cooking oil. A study similar to the current study should be done in the emerging markets such as Yaya shopping mall and Village market. Similarly, a comparative study between perceptions of rural and urban consumers should be done to assess their views about cooking oils.

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APPENDIX 1: LETTER OF INTRODUCTION

STUDY ON PERCEPTIONS OF CONSUMERS IN NAIROBI
TOWARDS COOKING OILS.

University of Nairobi,
School of Business,
P.O. BOX 30197,
Nairobi.

Tick Where Applicable ✓

PART A: CONSUMER'S PERSONAL PROFILE:

Dear Respondent,

RE: COLLECTION OF RESEARCH DATA

I am a postgraduate student in the above mentioned University undertaking a Management Research Project on **“Perception of Consumers in Nairobi towards Cooking Oils”**.

You have been selected to form part of this study. You are kindly requested to assist in data collection by responding to the questions in the accompanying Questionnaire. The information provided will exclusively be used for academic purposes only and will be treated with utmost confidence.

You will also be provided with a copy of the final report upon your request.

Your cooperation is highly appreciated.

Yours faithfully,

Joseph Owino.

APPENDIX II: QUESTIONNAIRE

STUDY ON PERCEPTIONS OF CONSUMERS IN NAIROBI TOWARDS COOKING OILS.

Tick Where Applicable ✓

PART A: CONSUMER'S PERSONAL PROFILE:

1. Name (Optional).....
2. Place of Residence (Estate).....
3. Age
 - (a) Up to 18 Yrs.
 - (b) 19 – 28 Years
 - (c) 29 – 38 Yrs.
 - (d) 39 – 48 Yrs
 - (e) 49 – 58 Years
 - (f) 59 Yrs and above
4. Gender.
 - (a) Male
 - (b) Female
5. Marital Status.
 - (a) Single
 - (b) Married
 - (c) Divorced
 - (d) Widowed
6. Occupation.
 - (a) Business
 - (b) Service Sector
 - (c) Government
 - (d) Private
 - (e) Housewife
 - (f) Others (Specify).....

7. Highest Level of Education.

- | | | | |
|-------------------|--------------------------|-------------------------|--------------------------|
| (a) Primary | <input type="checkbox"/> | (b) Secondary | <input type="checkbox"/> |
| (c) Diploma | <input type="checkbox"/> | (d) Degree | <input type="checkbox"/> |
| (e) Post Graduate | <input type="checkbox"/> | (f) No formal Education | <input type="checkbox"/> |

8. Monthly household income.

- | | | | |
|----------------------|--------------------------|----------------------|--------------------------|
| (a) Less than 20,000 | <input type="checkbox"/> | (b) 20,000 – 29,999 | <input type="checkbox"/> |
| (c) 30,000 – 39,999 | <input type="checkbox"/> | (d) 40,000 – 49,999 | <input type="checkbox"/> |
| (e) 50,000 – 59,999 | <input type="checkbox"/> | (f) 60,000 and above | <input type="checkbox"/> |

PART B: CONSUMER USAGE OF COOKING OILS

9. Which product do you use for cooking purposes?

- | | | | |
|--------------------------|--------------------------|---------------------------|--------------------------|
| (a) Cooking fats (solid) | <input type="checkbox"/> | (b) Cooking oils (liquid) | <input type="checkbox"/> |
| (c) Both | <input type="checkbox"/> | (d) Other (specify) | <input type="checkbox"/> |

10. Which type of cooking oil do you use?

- | | | | |
|------------------------------|--------------------------|---------------------|--------------------------|
| (a) Extra virgin olive oil | <input type="checkbox"/> | (b) Cotton seed oil | <input type="checkbox"/> |
| (c) Sunflower oil | <input type="checkbox"/> | (d) Soya oil | <input type="checkbox"/> |
| (e) Extra virgin coconut oil | <input type="checkbox"/> | (f) Corn oil | <input type="checkbox"/> |
| (g) Palm oil | <input type="checkbox"/> | (i) Not sure | <input type="checkbox"/> |
| (h) Others (Specify)..... | | | |

11. Name the brand of cooking oil that you use in Q. 11 above.....

12. How did you get to know the cooking oil mentioned in Q. 11 above?

- (a) Mass Media (b) Family members
 (c) Neighbors (d) Friends
 (e) Others (Specify)

13. For how long have you been using cooking oil mentioned in Q. 11 above?

- (a) Less than 2 Years (b) 2-5 Years
 (c) 6 - 9 Years (d) 10 Yrs and above

14. What average quantity of cooking oil do you use monthly?

- (a) Less than 2 Lt./Kg. (b) 2-5 Lt. / Kg.
 (c) 6 - 9 Lt./ Kg.

SECTION C: CONSUMER PERCEPTION OF COOKING OILS

15. Indicate the extent to which you agree to the following statements about Vegetable Cooking Oils? (Tick only one box in each statement)

	Very large extent (5)	Large extent (4)	Moderate extent (3)	Small extent (2)	Very small extent (1)
--	--------------------------	---------------------	------------------------	---------------------	--------------------------

Vegetable Cooking Oil are easily digested	<input type="checkbox"/>				
Vegetable Cooking Oil have long Shelf life	<input type="checkbox"/>				
Vegetable Cooking Oil have no Cholesterol	<input type="checkbox"/>				
Vegetable Cooking Oils are healthy	<input type="checkbox"/>				

Vegetable Cooking Oil taste good.	<input type="checkbox"/>				
Vegetable Cooking Oil is expensive	<input type="checkbox"/>				
Vegetable Cooking Oil is rich in energy	<input type="checkbox"/>				
Vegetable Cooking Oil is rich in Vitamins	<input type="checkbox"/>				

16. Indicate the extent to which you agree to the following statements about animal cooking oils? (Tick only one box in each statement)

	Very large extent (5)	Large extent (4)	Moderate extent (3)	Small extent (2)	Very small extent (1)
Animal Cooking Oils are easily digested	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Animal Cooking Oils have long Shelf life	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Animal Cooking Oils have no Cholesterol	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Animal Cooking Oils are healthy	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Animal Cooking Oil taste good.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Animal Cooking Oil is expensive	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Animal Cooking Oil is rich in energy

Animal Cooking Oil is rich in Vitamins

17. Other than the attributes mentioned in Q. 15 above, mention other benefits you derive from vegetable cooking oils.....
.....
.....

18. Other than the attributes mentioned in Q. 16 above, mention other benefits you derive from animal cooking oils.....
.....
.....

Thank you for your co-operation.

RESEARCH INSTITUTE OF MANAGEMENT
WARRANGAL, APRAJITHA DEVI