

A SURVEY OF PERCEPTION OF CONSUMERS TOWARDS PLASTIC
PACKAGING USED BY FIRMS IN THE DAIRY INDUSTRY IN KENYA

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BY
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A MANAGEMENT RESEARCH PROJECT SUBMITTED IN PARTIAL
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AUGUST 2006

DECLARATION

DECLARATION

To those who believe in the future

This research proposal is my original work and has not been used for the purpose of award of a degree or in another publication in any university or institution.

CANDIDATE

SARAH KATHONI KIURAH

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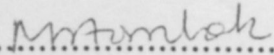
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DECLARATION BY THE SUPERVISOR

This research proposal has been presented for examination with my approval as University supervisors.

SUPERVISOR

MRS MARGARET A OMBOK

SIGN......


DATE.....
10-11-2006

DEDICATION

To those who believe in the future

First and foremost, I would like to appreciate the works of all those who participated in one way or another towards the completion of the research proposal.

Much thanks goes to my project supervisor Mrs. Margaret Ombok for her personal guidance during the period of preparing and writing the report. Her professional advice has been of great help to me.

Thanks go to my Husband and children, for handling the home during my absence.

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ABSTRACT

Dairy industry in Kenya has seen a lot of changes since its liberalization in 1993. This made players in the industry to grow from 1 to 4 by 2004. As a result of many entrants, competition became stiff and firms had to come up with various competitive strategies, packaging being one of them. Recently there has been an increase in the use of plastic packaging of products in the dairy industry. The objective of this research was to establish perception of consumers on plastic packaging of dairy product in Kenya. Different people perceive issues differently. This case also applies in packaging of product.

CHAPTER ONE: INTRODUCTION

This was a descriptive survey, which targeted consumers of dairy products in Nairobi. One hundred consumers were randomly selected from key retail outlets. A semi-structured questionnaire was used to collect primary data. Administration of the questionnaire was of personal interview.

Statement of problem

A total of 100 respondents were targeted but a response rate of 90% was achieved. Data was analysed using descriptive statistics, i.e. Frequencies, percentages, mean score and standard deviation. Plastic packaging was perceived by most consumers of dairy products as good based on the attributes above. Most of the consumers preferred plastic packaging compared to other packaging materials. As recommendations to the dairy firm in Kenya is to continue using plastic packaging and continue modifying its attributes to meet their consumer's need. Therefore this acts a motivator the dairy industry players to continue using plastic packing as compared to other forms of packaging.

The main limitation of this study was unwillingness of the consumers to provide the required information and illiteracy. A similar research should be carried out focusing on other industries and also as a case study.

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CHAPTER ONE

INTRODUCTION

1.1 Background

According to Rudelius (1994), there are diverse factors influencing success of marketing. Although in organization's marketing activities focuses on assessing and satisfying consumer needs, countless other people, groups and forces interact to shape the nature of the activities, product packing being one of them. Marketing department works closely with other departments and employees to help provide customer-satisfying products required for the organization to service and proper (Rudelius, 1994). Packaging of a product is one of the most important factors that contribute to the success of the organization. If a product is packed in an appealing packet, then it is going to attract customers and if not, customers may not buy it no matter how good it is in terms of quality or quantity (Walker, 1994).

To a great extent, the customer first exposure to a product is the package, and it is an expensive and important part of marketing strategy (Rudelius, 1994). A grocery product package is especially important because packaging designer using eye cameras have discovered that a typical consumer eye sweep of a grocery shelf is a mere 2.3 seconds (Walker, 1994). Today's packaging costs exceed \$50 billion and an estimated 10 cents of every dollar spent by a consumer goes to packaging. Firms have adopted various packaging material one of the being plastic all aimed at attracting consumers (Rudelius, 1994).

Kenya economy has seen a lot liberalization of various sectors example being pharmaceutical and dairy industry. Liberalization brings with it stiff competition and firms that survive are those study requirements of the consumers and strive to meet them effectively without which they may end up closing down or being taken up by powerful ones. Ongubo (2002), reports that liberalization of the Kenyan pharmaceutical industry in 1990s resulted into firms going into mergers and acquisition in order to maintain competitive advantage. In 1993 there were 45 dairy processors and 300 milk bars.

However by year 2001, only 26 processor were still operational the rest having been wiped out by stiff competition.

It is very important for players in the industry to understand the consumer, technological changes and competitive strategies employed by other players in the industry in order to remain competitive. Various marketing mix have been employed by different firms in the dairy sector so as to outdo their competitors. These include: price, promotion, product, packaging and positioning. This has seen the evolution of packaging from tetra pack to plastic materials and this plastic packaging attracts different perceptions from different consumers of dairy products.

1.1.1 The concept of perception

According to Loudon (1979), perception is the process of receiving and deriving meaning from stimuli present in an individual's internal and external up of several interrelated activities with results in the individual living environment. Loudon further states that to perceive is to see, hear, touch, taste smell or sense internally some thing, event or relation and to organize, interpreter and derive meaning from the experience. It is therefore a process made meaning to the environment from experience and varies from one person to another since different individuals "see" the same thing in different ways (Harold, 1978). Perception essentially consists of five processes, receiving, filtering, assigning, interpreting and reacting to the stimuli.

Kibera and Waruingi (1988), summarize perception as the process, which attributes meaning to incoming stimuli through the human senses. Therefore, it constitutes of two factors, the stimuli and the individual factors. Knowledge of the perceptual process is essential since the manner in which users of a product or service interpret the information is affected by their cognitive understanding that they have established in their minds. Further, perception is important especially to marketers since it involves the constitution of the users' feelings about particular stimuli and helps in developing strategies towards meeting that which the users perceive as important (Njoroge, 2003).

1.1.2 Packaging

According to Briston and Neill (1996) packaging can be defined in three ways as follows; "Packaging is the art; Science and technology of preparing goods for transportation and for sale. Packaging may also be defined as the means of ensuring the safe delivery of products to the ultimate consumer in sound condition at the minimum overall cost. Packaging must also protect what it sells and sell what it protects. In the standard reference work edited by (Frey, 1994), packaging is defined in terms of the role it plays in marketing.

Packaging can be divided into various categories these include: Primary marketing, which is the essential container enveloping the product (which remains) with the product from the time of its manufacture or preparation at least through distribution to retailer, and very often continues through entire life of the product. Another category is Secondary packaging, which refers to the addition of container at the point of sale. Displaying packaging is also another category of packaging intended for displaying the products at the point of sale. The last category of packaging is shipping packaging, which is intended primarily for protecting goods in transit and storage.

All the above four categories of packaging are of major importance in marketing, bearing in mind that the manufacturer is concerned not only with protecting his goods until they are safely delivered to the final user, but also with his relationship with intermediaries in the channels of distribution and disposal of materials used. Well-designed packaging performs a number of distinctive purposes, which will vary in importance for different persons in the distributive chain from ways in which the packaging may be used as both a tactical and strategic variables in marketing mix. Packaging does the following functions; Attract, protect the consumer product, and it has to be cost effective and of disposable nature. The main concern of this study is the continued use of plastic as packaging material by dairy industry and how community perceives it (Gordon, 1985).

Plastic is a product of elements of carbon that can be molded into various shapes and form plastic is cost effective and of late most companies have adopted it as their

packaging materials so as to survive in the current competitive and technologically dynamic environment. There are various sources of plastic unlike the monopoly of tetra pack.

1.1.3 The dairy industry in Kenya

With more than two-thirds of the dairy cattle in eastern and southern Africa found in Kenya, and per capita production levels double those found anywhere else on the African continent (Daily nation media, 10th February, 2004). Kenyan milk consumption is amongst the highest in the world. On average, each Kenyan drinks four times the average (25kg per year) for sub-Saharan Africa. And, despite strong marketing within the formal sector, informal milk sales account for more than three-quarters of the milk market; buying raw milk, direct from farmers or local hawkers, is convenient even for wealthier households, and the high butterfat content is particularly valued for its taste and nutritional value. But with increasing pressure for regulation of the informal sector, can Kenya lead the way in reforming its dairy policies whilst maintaining the growth in smallholder production?

More than 600,000 smallholders, with between one and three cows, currently produce 80 per cent of Kenya's milk. Most dairy consumption is as liquid milk, and the preference for raw milk is high even in urban areas; the exception is Nairobi, where consumers drink more pasteurized milk which is packed in containers which are mostly plastic (Daily nation media, 10th February, 2004). But, although milk consumption increases with income, latest research by the DFID-funded Smallholder Dairy Project shows that an increase in raw milk prices is unlikely to dissuade poor people from buying raw milk or to reduce their consumption. However, a price increase in pasteurized milk would result in lower-income groups buying less milk and could seriously affect levels of household malnutrition, particularly amongst children, if the alternative raw milk market were not available. Consumer demand for raw milk therefore plays a significant part in the continuation of the informal sector and it is unlikely that, in the immediate future, consumption levels of raw milk will decline even as incomes increase.

The growth in Kenya's Dairy sector has been heralded as a great success story, and yet further gains in dairy production and marketing are constrained by a wide range of problems. These include poor quality feed, barriers to animal health services, slow development of breeding services and poor access to credit and milk markets. Many existing dairy policies pre-date independence and tend to be discriminative, with standards biased towards the formal sector. However, due to a lack of capacity and resources, implementation of legislation and regulations is generally poor. For instance, a recent survey has found that very little difference exists in milk quality (based on coliform counts) between licensed and unlicensed traders, which rather invalidates current official unwillingness to license small traders with no fixed premises. Road infrastructure also remains poor, and it is estimated that for every kilometer of poor feeder road farm-gate milk prices are reduced by three per cent. Yet, none of the cess levied on milk is currently used to improve roads.

Earlier before 1993 Kenya cooperative creameries (KCC) used to be the sole processor and distributor of dairy products in Kenya. But in 1993 the government liberalized the dairy sector hence opening avenues for other players. It is after 1993 that we find the number of player in the dairy industry increase tremendously to Thirty-four in year (Kenya Dairy Board, 2004). This has brought about stiff competition in the sector. Competition has forced firms to be innovative in their operation strategies else they loose their market share to the competitors.

The first formulation of the Dairy Development Policy for Kenya began in 1993 after liberalization in the dairy industry earlier the same year. The policy was later revised in 1997 and again in 2000. And yet, even after wide stakeholder consultations in 2000, the pace of policy revision has been slow and the proposed Dairy Act remains unresolved. To help guide the debate for policy reform and implementation, a consortium of partners has been formed including the Ministry of Livestock and Fisheries Development, national and international research organizations, the Institute of Policy Analysis and Research (IPAR), the Kenya Dairy Board, and several NGOs. Latest research findings and policy recommendations from the Smallholder Dairy Project and IPAR were presented at the

recent Dairy Policy Forum, and it is hoped that the NGOs in particular would use their lobbying and advocacy roles to push forward the agenda for dairy reform. (Stasch, 2002).

After liberalization the growth in Kenya's dairy industry had been impressive but the time of deliberation for its future had to come to an end. The potential for further gains to be achieved is possible but only if the promise of reform can be realized. (Daily Nation Media, 2004).

1.2 Statement of Problem

Dairy industry plays a great role in the economy in terms of employment, infrastructure improvement, and educating the farmers. After the liberalization of dairy industry in Kenya in 1993 there were many players entering the market. As a result of the many players entering the market, stiff competition has been noted in the industry hence calling for dairy firm to come up with competitive strategies such pricing, packaging strategies, positioning strategies as well as new products development strategies. These companies have also resulted to lowering their cost of operations hence coming up with cheaper products, downsizing, and innovative products, these firms have also developed strategies for obtaining their products at lower prices from farmers. They are also using different marketing mix method one of them being packaging their products in low cost plastic containers, these plastic containers are attractive, easy to handle and convenient to use. Against this backdrop, manufacturers started to recognize the position of packaging as powerful tools for product differentiation and purchase motivation (Pilditch, 1973).

Alongside these developments was the changing consumer perception of the products offered by dairy firm in Kenya and their packaging; they were perceived to be homogeneous and hence of the same functional quality and performance (Baker, 1985). However different consumers of dairy products have different perception on plastic packaging of dairy products, some would prefer plastic packaging because it is affordable whereas other perceive it as a low class commodity packaging method. This has motivated the researcher to come in and carry out a research on the perception of different consumers of dairy products on plastic packaging.

A study carried out in Germany by Stapton (1995), on packaging focused on the effects of plastic packaging on the environment. The findings of that study cannot be generalized to this study because Kenya is a developing country and there is no policy framework on disposal of plastic packaging unlike Germany where the framework is well formulated and implemented. Furthermore this study did not focus on consumer's perception on plastic packaging. Research studies have been carried out on dairy industry in Kenya but none focused on consumer perception of plastic packaging. Studies by Bett (1995), Adede (2004), Kiarie (1993), Kenduiwo (1988) focused on the general marketing strategies and operations of the Dairy industry in Kenya but not on plastic packaging of dairy products.

Given the need to remain competitive in the liberalized sector, firms in the dairy industry need to get feedback from consumers regarding their perception on the use of plastic packaging. If this is known they will be in a position to make decisions as to whether or not to continue packaging their products in plastic containers. The proposed study therefore sought to fill the gap by obtaining answers to the following question;

What the perception of consumers is on use of plastic packaging of dairy products by Dairy Industry in Kenya?

1.3 Objective of the study

The objective of this study was to determine how consumers perceive plastic packaging used by the Dairy Industry products in Kenya.

1.4 Importance of the study

The results of this study may be of great use to the following parties:

- (i) Firms in the industry, to know the perception of consumers on the plastic packaging and thus decide whether to change to biodegradable materials or to continue packaging their products in plastic containers.

(ii) To the policy makers, to know the likely effects of plastic packaging so that they can formulate policies to promote or to discourage plastic packaging by various companies which use these as their packaging containers.

The marketing environment is always changing (Rudelius, 1994). Alterations in

(iii) To government and especially ministry of environment; to know the likely consequences of plastic packaging to the society and consumer perception toward plastic packaging.

(iv) To the researchers and academic community, the research can be used as stepping stone for further research especially on other sectors of the economy because the finding of this research cannot be generalized to all sectors of the economy since different industries produce different kind of goods and services which calls for different packaging methods and materials.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

The marketing environment is always changing (Rudelius, 1994). Alterations in technology, competitors and competitive activity buyer demographics, the broader economic environment, and the regulatory environment related to waste disposal have transformed the industry (Rudelius, 1994). Anticipating change and responding to it is often spells the difference between marketing success and failure. Companies have adopted various competitive strategies one of them being packaging.

According to Baker (1991), consumers demand packages that satisfy their information needs. Law, for example, statement of weight and composition of the product requires certain information. Further to this basic information, consumers favor a clearly marked price, information on how the product should or may be used, and preferably, some view of the contents themselves. All these aspects of the product are embodied on packs and labels (Baker, 1985).

Peter and Donnelly (1991) contend that, distinctive packaging is one method of differentiating a relatively homogeneous product. The package must be capable of protecting the product through the channel of distribution to the consumer. In addition, it is desirable for packages to be a convenient size and easy to open. It should be attractive and capable of being used as an in-store promotion tool. According to Paine (1962), the brand name is perhaps the single most important element on the package because it serves to identify and differentiate the product from others. A good brand name can evoke feelings of trust, confidence, security, strength, and many other desirable associations. Against this backdrop, manufacturers started to recognize the position of packaging as powerful tools for product differentiation and purchase motivation (Pilditch, 1973).

2.2 Packaging

Even after a product is developed and branded, strategies must still be developed for other product-related aspect of the marketing mix. One such product feature, and a critical one for some products, is packaging, which consists of all the activities of designing and producing the container or wrapper for a product. A package is the actual container or wrapper. Thus packaging is a business function and a package is an item (Michael, 1992).

Packaging and the resulting package are intended to serve several vital purposes the first being to protect the product on its way to the consumer. A package protects a product during shipment. Furthermore, it can prevent tampering with products, notably medications and food products, in the warehouse or the retail store. The second purpose being to provide protection after the product is purchased. Compared with bulk (that is, unpackaged) items, packaged goods generally are more convenient, cleaner, and less susceptible to losses from evaporation, spilling, and spoilage. Also, "childproof" closures thwart children (and adults!) from opening containers of medications and other potentially harmful products (Gordon, 1985).

The third purpose is that packaging is part of a company's trade marketing program. A product must be packaged to meet the needs of wholesaling and retailing middlemen. For instance, a package's size and shape must be suitable for displaying and stacking the product in the store. An odd-shaped package might attract shopper's attention, but if it doesn't stack well, the retailer is unlikely to purchase the product. Packaging must also be part of a company's consumer marketing program. It helps identify a product and thus may prevent substitution of competitive products. At the point of purchase—such as supermarket aisle—the package can serve as a "silent sales person". In the case of middlemen's brands, which typically are not advertised heavily, packaging must serve as the means of communication with shoppers. Furthermore, the promotional copy on the package will last as long as the product is used in its packaged form (Michael, 1992).

Ultimately, a package may become a product's differential advantage, or at least a significant part of it. In the cases of convenience goods and operating suppliers, most buyers feel that one well-known brand is about as good as another. Thus these types of products might be differentiated by a feature of the package (Rudelius, 1994).

Historically, packaging was intended primarily to provide protection. Today, with its marketing significance fully recognized, packaging is a major factor in the competition for customers. Therefore, full responsibility and authority for packaging should reside in a firm's marketing department. Recent developments have prompted even greater attention to packaging. With shelf space at a premium, it's not easy for manufacturers to get their products displayed in a retail outlet. If other marketing-mix elements are comparable, retailers are likely to purchase and display products having attractive, functional packaging.

A particular challenge for packaging is to deter shoplifting. Further the widespread use of self-service selling and automatic vending means that the package must do the selling job at the point of purchase. In addition, the public's growing concerns about safeguarding products until they are purchased must be considered in packaging. Once the product is purchased, the package may still play a role. Many food products are now packaged so that they can go straight from the shelf or freezer into a microwave oven. Continuing developments call for management's scrutiny. We see new packaging materials replacing traditional ones, uncommon shapes, innovative closures, and other new features (measured portions, metered flow). All are intended to provide benefits to middlemen and/or consumers and, as a result, selling points for marketers (Walker, 1994).

To manage the packaging of a product, executives must make the following strategic decisions. The first strategic decision can be packaging the product line. A company must decide whether to develop a family resemblance when packaging related products. Family packaging uses either highly similar packages for all products or packages with a common and clearly noticeable feature. For example KCC uses Yellow packaging for gold crown and green packaging for farm fresh as its product lines. Campbell Soup, for

instance, uses virtually identical packaging on all its images associated with established products extend to the new ones (Donnelly, 1997)

Family packaging makes sense when the products are of similar quality and have a similar use. The labels for the line of Comstock pie fillings (such as apple, pumpkin, and mincemeat) were redesigned to look alike and resemble a billboard as they span a supermarket shelf (Rudelius, 1994).

The second packaging strategy is multiple packaging. For many years there has been a trend toward multiple packaging, the practice of placing several units of the same product in one container. Dehydrated soups, motor oil, beer, golf balls, building hardware, candy bars, towels, and countless other products are packaged in multiple units. Test after test has proved that multiple packaging increases total sales of a product. The third is packaging strategy is changing the package. A firm may need to correct a poor feature in an existing package. Or it may want to take advantage of new development such as the aseptic container, made of laminations of paper, aluminum foil, and plastic. This airtight container keeps perishables fresh for five months without refrigeration, and it costs about one-half as much as cans and one-third as much as bottles. Already used for many drink products, future applications of aseptic containers seen boundless. However, growth of this form of packaging might be slowed because it is not biodegradable.

To increase sales volume, many companies find it costs much less to redesign a package than to conduct an expensive advertising campaign. The Kroger supermarket chain boosted sales of its own brand of ice cream by 20 percent in one year simply by changing the photo and printing on the package. And when Pepperidge Farm Inc. redesigned the package of its Old-Fashioned cookie line, sales jumped almost 30 percent (Thompson, 1992). In line with packaging strategies is the different packaging materials used these are Tetra packs, metal tins and plastic. Firms are also forced to redesigning their packaging techniques which is very expensive, a package costs from \$20, 000 for a simple, single product to \$250, 000 for a project that entails a product line and requires consumer research and testing. And these figures do not include the expense of

promoting the new package design. Still, a redesign may cost less than the charge for an ad in a national magazine or a commercial on a popular network TV show. Also, the cost can be spread over the life of the new package design, typically several years (Taylor, 1999).

2.3 Criticisms of packaging

Packaging is the public eye today, largely because of environmental issues. Specific concerns, are that first, packaging depletes natural resources. This concern has been addressed through the use of recycled materials in packaging. A point in favor of effective packaging is that it minimizes spoilage, thereby reducing a form of resource waste. Secondly Packaging is viewed to be expensive. Even in seemingly simple packing, such as for soft packaging reduces transportation costs and spoilage losses. Some forms of plastic packaging and aerosol cans are health hazards. Government regulations banned several suspect packaging materials, notably chlorofluorocarbons used as aerosol propellants. Just as important, a growing number of companies are gradually switching from aerosol dispensers to pump dispensers.

Another concern of packaging is that it is deceptive. Government puts greater integrity on the part of business firms regarding packaging, which have alleviated this concern to some extent. Used and discarded packaging contributes significantly to the solid-waste problem. Perhaps the biggest challenge facing packagers is how to dispose used containers. However, this problem is not necessarily the fault of business. Consumers' desire for convenience in the form of throwaway containers conflicts with their stated desire for a clean environment. Using biodegradable materials in packaging can ease this problem. Another partial solution is use of less packaging, or simpler packages, as described in the nearby box (Rudelius, 1994).

Marketing executives are challenged to address these criticisms. At the same time, they must retain or even enhance the positive features of packaging, such as product protection, consumer convenience, and marketing support. Facing the rising costs, many producers feel the need to increase prices. However, they fear consumer resistance. What

can they do? A number of companies turn to downsizing—reducing the amount of product in a package while maintaining the price others opt to change their technological packaging methods to suit the plastic packaging (Gordon, 1985). Is downsizing ethical? Does your opinion depend on whether the company informs consumer about the reduced contents of the packages?

In lines with this rising cost of packaging, there are three levels of physical packaging. The first level is the primary package, the materials that envelop the product and hold it. This could be Snickers candy bar wrapper or a Coca-Cola can. The secondary package is packaging that holds the primary package for transportation or display. A cardboard box that holds a medicine bottle (of Bayer aspirin) is a secondary package. As is a plastic bag that holds a pound of individually wrapped candies. The tertiary packaging is the bulk packaging—a cardboard box or pallet—that holds secondary packages for shipments. Sometimes the primary, secondary and tertiary are combined, and usually at least two levels of packaging are used (Donnelly, 1997).

Management must first decide what strategic and support roles its packaging should occupy. What functions should be performed, and in what degree, by the three types of packages? Management may decide to aid new product strategy. Some packaging is such an integral part of the product that it becomes a major part of new product strategies. Aerosol deodorants versus the non-aerosol spray packages are good examples (Wood, 1996). Management may also decide to provide access to Channels. Packaging can open up new distribution channels, such as through vending machines. Characteristics of packaging—protection against pilferage, ease of shelf stacking, and convenient price marking—determine whether or not distributors will agree to handle the product. Shelf life is also often determined by the type of packaging (Wood, 1996). Thirdly management may support pricing strategy. Package size decisions such as offering 7- or 16-ounce drink cans, can often relate to price positioning decisions. Premium quality and design packaging can contribute to being able to ask a premium price.

Management may decide to serve as part of promotion. The size, shape, design, and wording on a package can convey a particular image, not unlike advertising itself.

Advance consumer testing of packaging is often conducted, in part to evaluate the image it portrays. Packages are often eye-catching, they create awareness, and they are informative. Key product attributes are often highlighted on packages to encourage trial purchase. Otto Roth & Co distributor of Beaux Villages cheese, found in research that most consumers did not understand the different types of premium cheeses, such as Brie, Gouda and Muenster. It therefore developed special packaging with descriptive labels to help take away the mystery (Michael, 1992). Packaging also provides protection and containment. Probably the most basic of packaging functions is protection. Virtually all products need protection, even bags of potting soil in garden centers. Another basic function of packaging is to hold products in specified quantities for transporting. Physical distribution considerations are vital to marketing success. Finally packaging provides information to Customers. Packaging usually provides important information to customers regarding use, misuse, guarantees, and ingredients. This provides yet another opportunity to be of assistance to customers and thereby enhance the product (Rudelius, 1994).

2.4 Packaging decisions

The basic packaging strategy is that of deciding how much weight to give each of the above roles and provides a foundation for tactical decisions. The packaging strategy must, of course, complement the overall product and marketing strategy and be carefully targeted to well-defined and well-understood target markets (Gordon, 1985). Packaging is often a very important element of the marketing mix, and its role in strategy should be explicitly defined. For the most part, the way packaging decisions are made parallels the new product development process. The following steps are usually required to develop a specific container design.

The first step is to get organized. Because so many organizational areas are involved in packaging decisions, they are best coordinated at a higher level, rather than solely in the marketing department. As is true of other product decisions, packaging often involve the highest-level executives in addition to marketing, physical distribution, manufacturing, research and development, legal, and purchasing personnel. Outside the firm, advertising

agencies, distributors, and specialized engineers may be involved. It is therefore important for top management to give coordination a strong endorsement (Wood, 1996). The second step is to conduct packaging research. Formal and informal marketing research is often needed to help position the product, brand, and package among competitive offerings. Advertising and image-related research may be carried out, as may package usage tests. Technical and engineering tests may be required. Colgate toothpaste's "pump" package had to be carefully tested. The third step is to develop graphics and copy. Color, illustrations, and copy wording must be consistent with the overall image desired. Orville Redenbacher popcorn, for example, has a package with old-fashioned printing and homey coloring and is personalized with Redenbacher's picture.

The fourth step is to develop physical package. The container itself must meet the needs of customers and distributors. The physical design includes shape, size, materials, and color. Like graphics, the physical design must be functional, yet reflect the image desired. Package design can sometimes be patented or trademarked (Michael, 1992). The fifth step is to test the design in the market. Marketing research using in-store tests or indirect psychological methods or obtaining distributor feedback is often appropriate before going to market with a packaging design. To obtain valid information, the tests must usually be subtle and indirect, rather than forth-rightly asking customers which design is preferred. Packaging testing is sometimes part of an overall product concept test or test market.

The final step is to do an environmental check. Environmental factors can constrain as well as dictate marketing decisions. Throughout the above steps, attention must be given to consumer and legal issues, including packaging safety, disposable packaging (e.g. biodegradable), the quantity of packaging, littering, and avoidance of misleading labeling and an unrealistic impression of the quantity purchased (Parson, 1983).

2.5 Types of packaging

There are various types of packaging these are metal packaging, tetra pack and plastic packaging. Metal packaging has in the past been used in various packaging although it is

slowly dying out due to the cost of metal as packaging material. Tetra pack is another dominant packaging method which is a bit expensive compared to plastic and has a monopoly production aspect because in Kenya it is only provided by one company.

2.6 Plastic Packaging

Plastics have had a remarkable impact on our culture; it has become increasingly obvious that there is a price to be paid for their use (Wood, 1996). The first controversy arose in the late 1950s and early 1960s. There were a number of incidents where small children crawled into plastic bags used by launderers to cover clothing, and suffocated. The plastics industry managed to fend off trouble by launching a massive public-education campaign. By the late 1960s, plastics were increasingly seen as a symbol of an outdated 1950s consumer culture. The term "plastic" became an insult, used to describe someone thought of as soulless. At the end of the 1960s, the Beatles would even sing of "Polyethylene Pam," a "go-getter" who would do anything to get ahead (Woodruff, 1996). This was partly just a fashion statement, since plastics remained in widespread use anyway, and in many cases were much more effective and environmentally benign than alternative materials. However, this led to a problem as well, since the consumption of massive amounts of plastic goods led to a massive problem with litter and waste disposal (Wood, 1996).

Plastic was almost too good, as it was durable and degraded very slowly. In some cases burning it could release toxic fumes. There was also the problem that manufacturing plastics often created large quantities of nasty chemical pollutants, and depleted the Earth's bounded supply of fossil fuels (Donnelly, 1997).

By the 1990s, plastic recycling programs were common in the United States and elsewhere. Thermoplastics can be re-melted and reused, and thermo set plastics can be ground up and used as filler, though the purity of the material tends to degrade with each reuse cycle. There are methods by which plastics can be broken back down to a feedstock state (Wood, 1996). Products such as automobiles are now being designed to make recycling of their large plastic parts easier. To assist recycling of plastic disposable

items, the Plastic Bottle Institute of the Society of the Plastics Industry devised the now-familiar scheme to mark plastic bottles by plastic type. A recyclable plastic container using this scheme is marked with a triangle with three "chasing arrows" inside of it, which enclose a number giving the plastic type: PETE, HDPE, PVC, LDPE, PP, PS, and OTHER (Donnelly, 1997).

Unfortunately, recycling plastics proved difficult. The biggest problem with plastic recycling is that it is difficult to automate the sorting of plastic waste, and so it is labor-intensive. While containers are usually made from a single type and color of plastic, making them relatively easy to sort out, a consumer toy like a cellular phone may be made of many small parts consisting of over a dozen different types and colors of plastics. As the value of the material is low, recycling plastics is unprofitable. For this reason, the percentage of plastics recycled in the US is very small, somewhere around 5% (Donnelly, 1997). However research has been done on "biodegradable" plastics that break down with exposure to sunlight. Starch can be mixed with plastic to allow it to degrade more easily, but it still doesn't lead to complete breakdown of the plastic. Some researchers have actually genetically engineered bacteria that synthesize a completely biodegradable plastic, but this material is expensive at present. (Wood 1996).

According to Wood (1996), plastics have proven too costly and limited for general use, and critics have pointed out that the only real problem they address is roadside litter, which is regarded as a secondary issue. When such plastic materials are dumped into landfills, they can become "mummified" and persist for decades even if they are supposed to be biodegradable. There have been some success stories. The Courtauld concern, the original producer of rayon, came up with a revised process for the material in the mid-1980s to produce "tencel." Tencel has many superior properties to rayon, but is still produced from "biomass" feedstock, and its manufacture is extraordinarily clean by the standards of plastic production. Whether the use of plastics can be made completely consistent with environmental quality demands, still remains to be seen.

2.6 Packaging and Consumer Perception

Packaging has increasingly gained popularity as a competitive marketing weapon. In a crowded market place, packaging and presentation at the point of sale may be the sole means of attracting attention and purchase. Consequently, the need for continuous innovation is obvious (Pilditch, 1973).

According to Irwin (1986), it is to the marketer's advantage to understand that the most acute packaging perspective is that of the consumer. Very often, to even the discriminating, well-educated consumer, the package is viewed as the product. It is certainly the consumer's primary source of information about the product. It discloses the contents, the quantity, the convenience or positive features, the value, the use instructions and most definitely, the point of difference from other products. To the consumer, a package is to a product what a book is to words. One simply does not exist without the other. For the marketer, the package assumes additional identities. It is the most economical, efficient, and desirable vehicle to move the product to the point of consumption, preserving the product as nearly as possible in its condition at the moment of production (Baker, 1991). The optimal package must at the same time dispense product while protecting it from destructive influences. It must support or enhance the quality of the product, stimulating the desire to purchase (Desmond, 2003).

The basic function of any package is to protect its contents in transit, in storage, and in use. This criterion plays a major role in determining the shape, size and materials used in developing the pack (Borden, 1965). The pack design depends largely on the nature of the contents in terms of their value, physical composition and durability. It is also important to consider the length of the distribution channel, and hence the amount of handling the package will receive, and variations in climatic conditions encountered between the point of manufacture and sale. Manufacturers must essentially use packages that make maximum use of a given space, as transportation and storage costs are usually computed on the basis of weight and/or volume (Daniel, 1969). At the retail level, the space/volume factor affects the number of items that can be put on display, and is

frequently used to measure retail productivity. Consequently, retailers will avoid packs, which occupy a disproportionate amount of space relative to their value (Baker, 1991).

Through the adoption of a distinctive pack and brand name, manufacturers are able to differentiate their products at the point of sale, and to develop advertising and promotional strategies designed to create consumer preference for their products (Dean & Talazyk, 1972). Further, by packaging the product himself, the manufacturer is able to exercise much greater control over the conditions in which the ultimate consumer will receive it, and so avoid dissatisfaction arising from poor storage and packing at the retail level. Many competing products are incapable of differentiation on the basis of objective criteria, and in such instances, packaging often constitutes the sole distinguishing feature upon which the product's success or failure depends (Borden, 1965).

Paine (1962) argues that, manufacturers can increase demand for their products by offering the consumer a variety of different sizes. In addition to catering for variations in household size and usage rates, a range of pack sizes enables the manufacturer to reach consumers with limited purchasing power. Many products are not consumed immediately the package is opened but are used over varying periods of time. To prevent spoilage, such products must be packed in resalable containers, the most familiar of which are the screw-top bottle and jar, and lever-lid can. These packaging designs aid in the preservation of the products (Briston & Neill, 1972).

Visual appeal is also an equally important aspect of pack design, particularly in the case of luxury or semi-luxury products where the pack itself may add to the image of the product quality, which the manufacturer is seeking to create (Kotler, 2000). Besides, consumers demand packages that satisfy their information needs. Law, for example, statement of weight and composition of the product requires certain information. In addition to this basic information, consumers favor a clearly marked price, information on how the product should be used, and preferably, some view of the contents themselves. All these aspects of the product are embodied on packs and labels (Baker, 1991).

Marketing executives are becoming increasingly convinced that packaging is a key ingredient in the marketing mix. The reason is the impact of brand imagery, a primary function of design (Frey, 1965). With the proliferation of product categories, it is acknowledged by marketers and designers that the function of the package is to target specific consumer groups with products that offer minute advantages or differences. This idea carries further. The brand imagery established by the package transcends its physical origin. Beyond a certain point, the consumer does not think simply of the package, but rather of the image originating with the package and conveyed through a multitude of other promotional media (Pilditch, 1973). This imagery, an outgrowth of what advertising agencies call the "unique selling proposition", becomes the perception of the product in the consumer's mind and the single most important motivator of purchase. Thus, for all marketing purposes, the brand imagery conveyed by the package becomes the product until the purchase is made and the consumer opens the package. At this point, the value of both the brand imagery and the product depend on the consumer's satisfaction – which in turn can be enhanced by the package and its design (Irwin, 1986).

Therefore it is upon the marketers to use packaging consultants and marketing research to develop up-to date, visual marketing strategies based on consumers perception towards packaging (Kumar, 1998).

Summary of literature review

According to various writers packaging plays a great role in the competition and winning of consumers in the dynamic and competitive environment. They also describe packaging as first impression the consumer has on the product and hence it is through the packaging that the consumer decides whether to buy or not buy a product. Furthermore plastic packaging is seen, as a cost reduction strategy by many authors and by different organizations. It is an avenue for gaining competitive advantage. Though plastic is not biodegradable some consumers prefer it whereas other would not prefer.

3.5 Operational dimensions of plastic packaging in the dairy industry

The attributes of plastic packing have been operationalized on the table below

A five point likert scale has been used to determine how consumers perceive the packaging on the given attributes.

Table 3.1: Operational dimensions of plastic packaging

Attribute of plastic packaging	Relevant issues	Relevant questions
Attractiveness	<ul style="list-style-type: none"> a) Colour b) Shape c) Copy pattern d) Photography e) Smoothness f) Roughness g) Finishing 	<ul style="list-style-type: none"> (1) (2) (5) (6) (7) (8) (22)
Convenience	<ul style="list-style-type: none"> a) Legibility of instructions b) Font size c) Ease of handling d) Ease of carriage e) Size of the container f) Ease of pouring out the content g) How people look at you h) Transparency of the plastic container i) Availability of usage instructions j) Availability of disposal instructions k) Availability of expiry information 	<ul style="list-style-type: none"> (3) (4) (9) (10) (12) (13) (29) (26) (23) (24) (25)

Durability	a) Storage	(11)
	b) Quality of plastic	(14)
	c) Quality of content	(15)
	d) Quantity of content	(16)
Hygiene	a) Cleanliness of plastic	(18)
	b) Exposure of content	(19)
	c) Ease of leakage	(20)
	d) Ease of spillage	(21)
Disposability	a) Environmental impact of plastic	(27)
	b) Ability to re-use the container	(29)
Cost	a) Price of product packaged in plastic compared to other packaging materials	(17)
	b) Cost of disposing the container to the environmentalists	(30)

3.6 Data Analysis

Descriptive statistics were used to analyze the data. Data on the general information was analyzed using frequencies and percentages. Data on perception of the consumer was analyzed using the mean scores and standard deviation. The analyzed data was then presented on tables and charts.

Table 4.2: Level of education

Level of education	Frequency	Percent
Secondary	10	44.4
University	5	22.2
Any other	21	93.3
Total	36	100.0

CHAPTER FOUR

DATA ANALYSIS

4.1 Introduction

This chapter presents analysis and findings of the research. Out of a 100 respondents chosen by the researcher only 90 responded, representing 90% response rate, which the researcher deemed adequate and sufficient for the study for purposes of data analysis. This compares favorably with other studies by Karemu (1993) and Lagat (1995). Whose response rate with the same population were 55% and 62% respectively.

4.2 Demographic profiles of the respondents

The demographic characteristics of the respondents considered in this research included age of this respondents, level of education income levels and whether one was a parent or not.

Table 4.1: Age of respondent

Age (in years)	Frequency	Percent
10-20	9	10
21-30	69	77
31-40	12	13
Total	90	100.0

Most of the respondents were of age of 21-30 as shown by 77%, other were between 10-20 years, 10.1% and between 31-40 years, 13.3%. This is a good proof of validity of data because most of consumers of dairy products lie in the age of majority.

Table 4.2: Level of education

Level of education	Frequency	Percent
Secondary	40	44.4
University	29	32.2
Any other	21	23.3
Total	90	100.0

A big number of the respondents were of Secondary level of education 44.4% this is a clear indication that most of the respondents understood the researcher interest. Others were 32.2% university graduates and 23.3% of the respondents were of other levels of education (primary level and doctorate level).

Table 4.3: Income level per month

Level of income	Frequency	Percent
Less than 10000	29	32.2
10001-20000	36	40.0
20001-30000	11	12.2
Above 30000	14	15.6
Total	90	100.0

32.2% of the respondents earn less than Kes 10,000, 40.0% earn between Kes 10001-20000, 12.2% earn between Kes 20001-30000 and 15.6% earn above Kes30000. This is a clear indication that most of the respondents can afford dairy products.

Table 4.4: Whether a parent or not

Variable	Frequency	Percent
Yes	39	43.3
No	51	56.7
Total	90	100.0

Most of the respondents were not parents as shown by table 2-5 above. 56.7% were not parents whereas 43.3% were parents.

4.3 Perception of consumers towards plastic packaging of dairy products

The respondents were to rate the extent to which they perceive plastic packaging to influence their purchasing of dairy products based on attractiveness, convenience, durability hygiene, disposability, and cost this was measured on a five point likert scale, Where 5=very large extent, 4=large extent, 3= some extent, 2= small extent, 1= No extent. On the following variables were considered, Attractiveness which had an average mean of (3.29 and standard deviation of 0.59), convenience had mean of (3.75 and

standard deviation of 0.61) Durability of plastic packaging as a factor had a mean of 3.64 and standard deviation of 0.66, hygiene had a mean of 3.83 and a standard deviation of 0.71 Disposability had a mean of 2.49 and standard deviation of 0.68 and cost had a mean of 3.29 and a standard deviation of 0.64. Disposability had the least mean, which indicates that plastic in terms of disposability influences purchasing of dairy products to a small extent. Hygiene had the largest mean of 3.83 thus plastic packaging of dairy products is perceived to be hygienic to a large extent this is shown by Table 2-6 Attributes of plastic packaging at the end of chapter four.

4.3.1 Attractiveness

Different people perceive plastic in terms of how it attracts and captures their eyes.

There are several attributes that influence attractiveness.

Table 4.5 Attractiveness

Attractiveness	Mean	Std dev
The colour of container is appealing	3.86	0.59
The shape is attractive	4.02	0.60
Copy pattern on plastic container are excellent	2.87	0.59
Plastic has good/eye catching photography	3.96	0.59
Plastic has smooth texture	2.73	0.59
Plastic has rough texture	3.03	0.59
Plastic package material finishing is excellent	2.58	0.59
Average	3.29	0.59

4.3.2 Durability

To a large extent, the respondents felt that shape of plastic packaging influence their purchase of dairy products (4.02), photography had a mean of (3.96) followed by colour which had (3.86). However texture of plastic packaging contributes to small extent purchase of dairy products (2.73). Plastic packaging material finishing is viewed as excellent to a small extent (2.58). However standard deviation was less than one, which showed that most of the responses revolved around the mean.

4.3.2 Convenience

This measures whether plastic packaging interferes with one's comfort

Table 4.6 Convenience

Attributes	Mean	Std dev
Instructions on plastic container are legible	3.20	0.59
Font size and graphic design are good	3.17	0.59
Plastic containers are easy to handle	4.17	0.60
Plastic containers are easy to carry	4.04	0.60
Plastic well displays usage instructions	4.06	0.60
Plastic is perceived to be of high class people	3.51	0.61
Size of the container is good	3.17	0.62
Plastic is transparent thus one can see level of content	4.14	0.63
It is easy to pour out the content of the container	4.00	0.63
Average	3.75	0.61

Ease of handling, carriage and display of usage instructions, attracts purchase of dairy products packaged in plastic containers to a large extent of 4.17, 4.04, 4.06, 4.14 and 4.0 respectively. Legibility of instructions, Font size of graphic design, perception by people, and size of plastic containers influence purchase of dairy products packaged in plastic containers to an extent (3.2, 3.17, 3.51, and 3.17 respectively).

The standard deviation was around 0.61 from the mean, this shows that in terms of convenience plastic packaging did not have a great variation from the mean.

4.3.3 Durability

This is a measure of life of plastic container and the content of the container.

Table 4.7 Durability

Attributes	Mean	Stan dev
Plastic is of good quality	3.22	0.65
Content of container is deemed to be of good quality	3.24	0.67
Plastic allows easy storage of product	4.06	0.61
Plastic containers carry high quantity	4.04	0.70
Average	3.64	0.66

Plastics a good storage material to a large extent (4.06), it carries high quality to a large extent (4.04) the content of the container is deemed to be of good quality to a moderate extent (3.24) and plastic is of poor quality to a moderate extent (3.22). The standard deviation was less than one, (0.66) which show that variables revolved around the mean.

4.3.4 Hygiene

This is a measure of ease of contamination of content of dairy product packaged in plastic containers.

Table 4.8 hygiene

Attributes	Mean	Std dev
Plastic is of high cleanliness standards	3.94	0.73
Exposure of the product is not easy	3.07	0.74
Plastic containers are easy to store	4.17	0.62
Plastic is transparent thus one can see level of content	4.14	0.74
Average	3.83	0.71

In terms of hygiene plastic containers are deemed to be easy to store at large extent (4.17) the are also transparent thus one is able to see the level of the content at a large extent(4.14). Exposure of product to contamination influences peoples perception on dairy products packaged in plastic containers to moderate extent (3.94). Plastic in terms of cleanliness influences purchase of products packaged in plastic containers to moderate extent (3.07). The standard deviation of attributes of hygiene was the highest at 0.71 but below one. This show that most variables lied around the mean and that response was more or less the same.

4.3.5 Disposability

This focused of the impact of plastic to the environment.

Table 4.9 Disposability

Attributes	Mean	Std dev
Plastic can be easily recycled	2.47	0.66
Plastic can be used for other purposes	2.51	0.70
	2.49	0.68

The ability to recycle plastic makes it preferable to a small extent (2.47) as a packaging material of dairy product, Also the ability to use the container for other purposes makes people prefer products packaged in plastic container at a small extent (2.51). The standard deviation was also less than one (0.68) hence showing the closeness of the variables to the mean.

4.3.6 Cost

This is the price and cost of plastic on product and from aspect of recycling of plastic.

Table 4.10 Cost

Cost	Mean	Std Dev
Plastic packaging make product affordable	4.07	0.73
Cost of recycling plastic is low	2.52	0.54
Average	3.29	0.64

Plastic packaging makes the product affordable to a large extent (4.07). However cost of recycling plastic makes people to prefer products packaged in plastic containers at small extent (2.52). The standard deviation was 0.64 hence variables were around the mean.

Table 4.11 attributes of plastics packaging

Attributes of plastic packaging	Mean	Std dev
Attractiveness	3.29	0.59
Convenience	3.75	0.61
Durability	3.64	0.66
Hygiene	3.83	0.71
Disposability	2.49	0.68
Cost	3.29	0.64

This is a table of averages of averages of attributes of plastic packaging.

DISCUSSIONS, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

The chapter summarizes the findings as well as the conclusion gathered from analysis of the data. Findings have been summarized alongside the objectives of the study, conclusions have been drawn from the study and the recommendations are given.

5.2 Discussions

From the analysis it is apparent that plastic packaging of dairy products has been on increase. Most of the respondents were of majority age and some were parents who have children of between 1-2 years. This represents a good representative sample of the highest consumers of the dairy products. Furthermore these respondents were of high education standards because 76.6% of the respondents were of O level of education and above. 98.8% of the respondents takes dairy products hence a clear indication of the knowledge about dairy product by the respondents.

Plastic packaging is perceived by most consumers of dairy products as good based on different attributes of plastic as packaging material. These attributes are attractiveness (3.29) convenience (3.75), Durability (3.64), Hygiene (3.83), Disposability (2.49) and Cost (3.29).

Attractiveness captures people's perception at large extent, durability also captures people's perception on plastic packaged dairy products at large extent, hygiene also attracts people at large extent, Disposal captures people's perception at moderate extent while cost captures people's perception about plastic packaging at large extent.

5.3 Conclusion

From the above discussion it can be clearly seen that, various attributes of plastic packaging captures peoples perception at different extents with hygiene of plastic package product leading followed by convenience, durability, attractiveness, cost and the last attribute being disposability of plastic materials.

In terms of hygiene plastic packaged products are seen to be of high hygiene standard by people to a large extent thus influencing them to purchase dairy products packaged in plastic containers. Convenience is also a factor that most people do value at a large extent when purchasing products packaged in plastic containers.

5.3 Recommendation

From the study findings it is clear that various elements contribute to people's perception on plastic packaging of dairy products. These attributes are attractiveness, convenience, durability, cost and disposability of plastic containers. Disposability and cost are seen to influence people's perception about dairy products at a small extent; therefore dairy firms need to be very cautious when packaging their products in plastic containers. Attributes such as convenience, hygiene and durability are of great influence on peoples perception about plastic packaging of dairy products and therefore firm need to improve on these factors so as to capture more people to purchase their products packaged in plastic containers.

5.4 limitation of the study

A limitation for the purpose of this research was regarded as a factor that was present, and contributed to the researcher getting either inadequate information or responses or if otherwise the response given would have been totally different from what the researcher received. The following was cited as the main limitation(s) in this research.

Low response rate. Respondents had to continually be reminded and at times soft spoken in order to respond. Sometimes they did not see the use or the benefit of such an exercise. Illiteracy was also a limitation because some of the respondents could not understand some questions and thus the researcher had to take a lot of time to explain to them what the questions were asking.

5.5 Suggestions for future research

There is still a big gap of knowledge especially in the field of consumer perception on plastic packaging and specifically when it comes to the question of environmental impact of plastics. There is need for further research on plastic packaging across various industries. A model can also be developed in dairy industry by categorization, classification or otherwise. The degree to which various consumer of products prefer plastic packaging compared to other forms of packaging can also be determined.

Bruce, J. Walker, (1994), "Fundamentals of Marketing", 10th edition, Mc Graw Hill India.

Berkowitz, & Baslow, (1980), "Marketing", 4th edition, Prentice Hall.

Craves Hill, Woodard, (1976), "Marketing Management", Seventh Edition, A.I.T.B.S. Publishers, India.

Douglas, J. Westbrook, and Leonard, J. Perreux, (1981), "Marketing Management - Strategy and Cases", Third Edition.

David, S. Kotler, (1978), "Consumer Behavior", 5th edition, Holt Rinehart and Winston, Publishers.

Frey, M. (1990), "Marketing handbook" 3rd edition.

Harris, J. (1980), "International marketing" International Professional.

Jones, J. L. (1989) The New Product Handbook, 7th Edition, Homewood, Illinois.

Joseph, P. R. and Gordon, W. P. (1983), "Marketing Management", Second Edition, Mc Graw-Hill Inc.

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Philip J. Kotler (1994), "Fundamentals of Marketing", 10th edition, Mc Graw Hill

Principles & Practice (1994), "Marketing", 4th edition, Prentice Hall

Chandrasekhar (1996), "Marketing Management", Seventh Edition, A.I.T.B.S

Principles of

David A. Forrester and Leonard J. Parsons (2002), "Marketing Management - Strategy and Cases" Third Edition

Marketing and Cases

Philip J. Kotler (1978), "Consumer Behavior", 5th edition, Holt Rinehart and Winston

Marketing

Philip Kotler, "Marketing handbook" 4th Edition

Philip J. (1994) "International marketing" Second edition Prentice Hall

Philip J. (1985) The New Product Handbook, 1st Edition, Homewood, Illinois

Philip J. and Gordon W. P. (1985), "Marketing Management", Second Edition, Mc

Graw Hill

REFERENCES

- Alvin, C. Burns, (1999), "**Marketing Research**", First edition, Prentice Hall—New Jersey.
- Auma, Olgha, Adede, (2004), "**Determinants of consumer choice of brands in selected estates in Nairobi**", Unpublished project University of Nairobi.
- Bruce, J. Walker, (1994), "**Fundamentals of Marketing**", 10th edition, Mc Graw Hill incl.
- Berkowitz, & Ruelius, (1994), "**Marketing**", 4th edition, Prentice Hall.
- Craves, Hills, Woodruff, (1996), "**Marketing Management**," Seventh Edition, A.I.T.B.S Publishers, India.
- Douglas, J. Dairlymple, and Leonard, J. Parsons, (2002), "**Marketing Management, - Strategy and cases**" Third Edition
- David, T. Kollat, (1978), "**Consumer Behavior**", 3rd edition, Holt Rinhart and Winston, Publishers.
- Frey, M. (1994), "**Marketing handbook**" 4th Edition.
- Harold, J. (1993), "**International marketing**" Second edition Prentice Hall.
- Irwin, D. J; (1986) **The New Products Handbook**, 1st Edition, Homewood, Illinois.
- Joseph, P. J; and Gordon, W. P; (1985), "**Marketing Management**," Second Edition, Mc Graw-Hill inc.

James, R. Taylor, (1999), "**Marketing research**" Prentice Hall—New Jersey.

John, P. P; and James, H, D. J; (1997), "**Marketing Management-Knowledge and skills**," Third Edition, Richard D Irwin, INC, America.

Kenya Dairy Board (2004) **Export appendix.**

Kenduiwo, J. K. A; (1988), "**An application of the transport mode a case of inter factory transfer of bulk whole liquid milk at KCC limited**" Unpublished MBA Research Project, University of Nairobi.

Kiarie, M. (1993), "**Aprior determination of producer supplier to cooperative societies-A case of limuru Dairy co-operative**". Unpublished MBA research project, University of Nairobi.

Kotler, P. (2000). **Marketing management: Analysis, Planning, Implementation and Control**, 9th Edition Prentice Hall, Inc Delphi, India.

Michael, J. Backer, (1992), "**Marketing strategy and management**," Second Edition, Machmillanpress ltd London.

Njoroge, J. (2003), "**The diversification strategy –case study of Nation Media Group**" Unpublished Journal University of Nairobi.

Niraj, Kumar; (1998), "**marketing communications-Theory and practice**" First Edition, Himalaya Publishing House, Mumbai india

Ongubo, J. N; (2002), "**Determinants of brand loyalties for prescription brand medicine by doctors in Nairobi**". Unpublished MBA Research project, University of Nairobi.

Kotler, P. (1998), 'Marketing management' sixth edition Mc Graw-Hill inc.

APPENDIX I: LETTER OF INTRODUCTION TO RESPONDENTS

Stanley, F. Stasch, (2002), "marketing research seventh edition Mc Graw-Hill inc.

University of Nairobi.

Stapton, (1995), "Effects of plastic on ecology" Ecological journal.

P.O Box 30197.

Smith, R. M; (1983) "marketing concepts and applications, 1st Edition McGraw-Hill, Ryerson ltd.

Dear respondent,

Strickland, P. (1992), "Strategic management" Ninth Edition, Prentice Hall.

RE: COLLECTION OF RESEARCH DATA

I am a postgraduate student at the University of Nairobi, school of business. I am undertaking a management research on 'a survey of perception of consumers towards plastic packaging used by firms in the dairy industry in Kenya'.

You have been selected to form part of this study. This therefore, is to kindly request you to assist me collect the data by filling in the accompanying questionnaire. The information provided will exclusively be used for academic purposes and will be treated with utmost confidence. Neither your name nor any other details shall appear in my report.

Your cooperation is highly appreciated.

Yours faithfully

Kurahik, S.
(Student)

M. Ombeki
(Supervisor)

APPENDIX I: LETTER OF INTRODUCTION TO RESPONDENTS

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

Dear respondent,

RE: COLLECTION OF RESEARCH DATA

I am a postgraduate student at the University of Nairobi, school of business. I am undertaking a management research on **'a survey of perception of consumers towards plastic packaging used by firms in the dairy industry in Kenya'**.

You have been selected to form part of this study. This therefore, is to kindly request you to assist me collect the data by filling in the accompanying questionnaire. The information provided will exclusively be used for academic purposes and will be treated with utmost confidence: Neither your name nor any other details shall appear in my report.

Your co-operation is highly appreciated.

Yours faithfully,

Kiurah K.S.
(Student)

M.Ombock
(Supervisor)

APPENDIX II: QUESTIONNAIRE

The information provided here will only be used for academic purpose and will be treated with maximum confidentiality

Part A: Demographic information

1 Name of the respondent (optional).....

Attributes	Very Large Extent (5)	Large Extent (4)	Moderate Extent (3)	Small Extent (2)	No Extent (1)
2 Area of residence.....					

3 Age of the respondent (tick)

- 10 and below Years []
- 11-20 []
- 21-30 []
- 31-40 []
- 41-50 []
- Above 50 years []

4 What is your level of education (Tick)?

- Primary []
- Secondary []
- University []
- Any other (specify)

5 What is your average level of income per month kes (Tick)?

- Less than 10000
- 10001- 20000
- 20001-30000
- Above 30000

b) Are you are a parent? (Tick)

- Yes []
- No []

PART B SPECIFIC

6 Do you take dairy products (Tick)?

Yes No

7) Please indicate on the scale of 1 to 5, below the extent to which the following attributes of plastic packaging influence your choice of dairy product as you perceive them.

Please Tick as (✓) appropriate box

	Attributes	Very Large Extent (5)	Large Extent (4)	Moderate Extent (3)	Small Extent (2)	No Extent (1)
1	The colour of the container					
2	The shape of the container					
3	Legibility of the instructions on the container					
4	The font size of the graphic designs					
5	The copy pattern of the container					
6	The photography of the container					
7	The smoothness of plastic package					
8	The roughness of plastic packaging material					
9	Ease of handling the container					
10	Ease of carriage of the container					
11	Ease of storage of the					

	container					
12	The size of the container					
13	Ease of pouring out the content					
14	The quality of the plastic package					
15	The quality of the content of the container					
16	The quantity of the content of the plastic package					
17	The price of the plastic packaged dairy product					
18	Cleanliness of plastic package					
19	The exposure of the content inside					
20	The ease of spillage of the content					
21	The ease of leakage of the content					
22	The manner of finishing of plastic packaging material					
23	The availability of usage instructions on plastic packaging					
24	The availability of disposal information on plastic packaging					

25	The availability of storage duration information on plastic packaging						
26	The ability to see the content inside the package						
27	How plastic pollutes the environment						
28	Ability to re-use the plastic container compared to other packaging materials						
29	How people look at you when carrying plastic the container compared to other containers						
30	Cost of disposing the plastic package i.e. Recycling cost to the environmentalists						

8) State any other reason which may make you like plastic container compared to other packaging materials.

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Thank you for your cooperation!

Appendix III: Table of plastic packaging attributes

Variable	Frequency					Score					Mean	Std dev	
	5	4	3	2	1	5	4	3	2	1			
Attractiveness													
The colour of container is appealing	25	40	15	7	3	125	160	45	14	3	3.86	0.59	
The shape is attractive	30	35	22	3	0	150	140	66	6	0	4.02	0.60	
copy pattern on plastic container are excellent	20	14	16	24	6	100	56	48	48	6	2.87	0.59	
plastic has good/eye catching photography	41	25	9	8	8	205	100	27	16	8	3.96	0.59	
plastic has smooth texture	15	12	25	20	8	75	48	75	40	8	2.73	0.59	
plastic has rough texture	16	14	31	15	14	80	56	93	30	14	3.03	0.59	
plastic package material finishing is excellent	12	10	22	30	6	60	40	66	60	6	2.58	0.59	
Average												3.29	
Convenience													
Instructions on plastic container are legible	20	15	30	13	12	100	60	90	26	12	3.20	0.59	
font size and graphic design are good	15	15	35	20	5	75	60	105	40	5	3.17	0.59	
plastic containers are easy to handle	42	24	22	1	1	210	96	66	2	1	4.17	0.60	
plastic containers are easy to carry	40	22	24	2	0	200	88	72	4	0	4.04	0.60	
plastic well displays usage instructions	40	25	15	8	2	200	100	45	16	2	4.03	0.60	
plastic well displays disposal instructions	40	25	16	8	1	200	100	48	16	1	4.06	0.60	
Plastic is perceived to be of high class people	20	22	32	14	4	100	88	96	28	4	3.51	0.61	
size of the container is good	15	15	35	20	5	75	60	105	40	5	3.17	0.62	
plastic is transparent thus one can see level of content	38	30	20	1	1	190	120	60	2	1	4.14	0.63	
It is easy to pour out the content of the container	39	25	16	7	3	195	100	48	14	3	4.00	0.63	
Average												3.75	
Durability													
plastic is of good quality	25	24	11	16	4	125	96	33	32	4	3.22	0.65	
content of container is deemed to be of good quality	20	15	30	17	8	100	60	90	34	8	3.24	0.67	
plastic allows easy storage of product	40	26	15	7	2	200	104	45	14	2	4.06	0.61	
plastic containers carry high quantity	40	22	24	2	0	200	88	72	4	0	4.04	0.70	
Average												3.64	
Hygiene													
plastic is of high cleanliness standards	36	23	25	2	4	180	92	75	4	4	3.94	0.73	
Exposure of the product is not easy	15	12	35	20	8	75	48	105	40	8	3.07	0.74	

Plastic containers are easy to store	42	24	22	1	1	210	96	66	2	1	4.17
Plastic is transparent thus one can see level of content	38	30	20	1	1	190	120	60	2	1	4.14
Average											3.83
Disposability											
Plastic can be easily recycled	10	12	18	20	30	50	48	54	40	30	2.47
Plastic can be used for other purposes	12	10	22	14	32	60	40	66	28	32	2.51
Average											2.49
Cost											
Plastic packaging make product affordable	41	25	14	9	1	205	100	42	18	1	4.07
Cost of recycling plastic is low	11	11	20	20	28	55	44	60	40	28	2.52
Average											3.29