

**MARKETING CHALLENGES AFFECTING SMALL SCALE  
DAIRY FARMERS DELIVERING MILK TO LIMURU MILK  
PROCESSORS LIMITED**

**By**

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**A RESEARCH PROJECT SUBMITTED IN PARTIAL  
FULFILLMENT OF THE REQUIREMENT FOR THE DEGREE  
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## DECLARATION

I declare that this project is my original work and has not been presented in any other University or institution of higher learning.

Signed



Date

8/11/2012

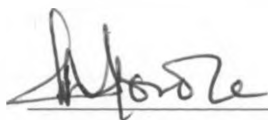
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### Recommendation

This project has been submitted for examination with my approval as university supervisor

Signed



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## **DEDICATION**

This work is dedicated to my family for their support and believing in me.

## ACKNOWLEDGEMENT

I take this opportunity to give thanks to the Almighty God for seeing me through the completion of this work. The work of carrying out this investigation needed adequate preparation and therefore called for collective responsibility of many personalities. The production of this research proposal has been made possible by invaluable support of many people. While it is not possible to name all of them, recognition has been given to a few. I am greatly indebted to my supervisor for her professional guidance, advice and unlimited patience in reading through my drafts and suggesting workable alternatives, my profound appreciation to you. Thank you all. May the Almighty God bless you abundantly.

## ABSTRACT

The milk industry in Kenya has significantly contributed to the national economy, household incomes and food security of the nation. However, this industry is faced with a myriad of technical, economic, institutional, processing and marketing problems. The focus of this study is the marketing challenges faced by small scale dairy farmers delivering milk to Limuru Milk Processors. The study used a descriptive survey research design. Primary data was used to collect data using semi structured questionnaires. Before processing the responses, the completed questionnaires were edited for completeness and consistency. The data was then coded to enable the responses to be grouped into various categories. Thereafter, data was analyzed using descriptive and factor analysis methods.

Descriptive statistics were used to summarize the data. Factor analysis was used to summarize the variables into an easily understandable framework. The study found out that informal market, quality aspect and consumer perception and government policy and regulation influences marketing of dairy products to a great extent. The study therefore recommends that the government should ban the informal market to stabilize the milk prices in the market. It also recommends that the milk industries obtain modern plants and techniques of production and packaging to improve on quality and make products more appealing to customers. The study finally recommends that the government should offer subsidies to milk companies when importing plants and parts.

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## **ACRONYMS AND ABBREVIATIONS**

<b>AI</b>	Artificial Insemination
<b>AMA</b>	American Marketing Association
<b>CBOs</b>	Community-Based Organizations
<b>CIM</b>	Chartered Institute of Marketing
<b>COMESA</b>	Common Market for East and Southern Africa
<b>FAO</b>	Food and Agriculture Organization
<b>GDP</b>	Gross Domestic Product
<b>IDF</b>	International Dairy Federation
<b>ILO</b>	International Labour Organization
<b>KARI</b>	Kenya Agricultural Research Institute
<b>KCC</b>	Kenya Co-operative Creameries
<b>KDB</b>	Kenya Dairy Board
<b>KEBS</b>	Kenya Bureau of Standards
<b>KNBS</b>	Kenya National Bureau of Statistics
<b>MoL&amp;FD</b>	Ministry of Livestock and Fisheries Development
<b>MoLD</b>	Ministry of Livestock Development
<b>SDP</b>	Smallholder Dairy Project
<b>SSA</b>	Sub-Saharan Africa
<b>UHT</b>	Ultra Heat Treated

# CHAPTER ONE

## INTRODUCTION

### 1.1 Background of study

It would be difficult to imagine a world without marketing. Equally difficult, is the appreciation of the importance that marketing plays in all aspects of our lives (Etzel, Walker and Straton, 2007). All aspects of marketing come with challenges and the dairy sector is one that has not been spared of challenges.

Kenya's dairy industry, the single largest livestock production sub-sector contributes 14% of the agricultural gross domestic product (GDP) and 3.5% of the total GDP (Muriuki et al 2003). The industry plays an important role in food security, employment creation, income generation, and enhances the livelihoods of dairy farmers, traders, processors and all participants engaged in the entire milk supply chain. The total dairy herd, estimated at 3.4 million heads produces about 3.1 billion litres of milk annually (Kenya National Bureau of Statistics (KNBS) 2010; (Ministry of Livestock and Fisheries Development (MoL&FD) 2003). Dairy production is dominated by smallholders who own about 98% of the total dairy herd (Peeler and Omore, 1997). The smallholder dairying households, estimated to number over 1.5 million households, account for more than 85% of the annual total milk production and 80% of the 1.8 billion litres of milk marketed annually (MoL&FD 2003; Stall et al 2001). Over the years, significant changes in the traditional dairying have occurred resulting in a major shift towards market-oriented smallholder production. This has been possible mainly due to the suitable climatic conditions, significantly improved fodder technology thus increase in the dairy cattle population, high urban population, household incomes and the high consumption of milk and dairy products. In addition

to the economic importance of milk, cattle manure is used to improve soil fertility resulting in increased pasture/fodder production on smallholder farms.

### **1.1.1 The concept of Marketing**

The marketing concept means that an organization aims all its efforts at satisfying customers at a profit (McCrathy and Perreault, 1993). Managers who adopt a marketing orientation recognize that marketing is vital to the success of the organization. This realization is reflected in the fundamental approach to doing business that gives the customer the highest priority. The marketing concept also emphasizes customer orientation and coordination of market activities so as to achieve the organization's performance objectives.

### **1.1.2 Small scale dairy marketing in Kenya**

Improved dairy cattle production by indigenous Kenyans was not carried out until after 1954 when the Swynnerton Plan allowed them to engage in commercial agriculture (Conelly, 1998). By 1963, when Kenya attained independence, the dairy herd had expanded to about 400 thousand exotic cattle largely in the hands of the settlers. After independence, there was a rapid transfer of dairy cattle from the settler farms to the smallholders resulting in a decline in the cattle population on large-scale farms to 250 thousand head by 1965. To encourage dairy production by smallholders, the government introduced a number of changes in the provision of livestock production and marketing services, resulting in highly subsidized services. In 1971, the government abolished the contract and quota system of dairy marketing to Kenya Co-operative Creameries (KCC) to allow for the inclusion of smallholder producers.

The continued provision of highly subsidized livestock services by the government proved unsustainable due to budgetary and other constraints. By the late 1980s, the

quality of livestock services provided by the government had declined, prompting it to adopt structural adjustment and economic restructuring which, among other changes, included liberalization of the dairy industry with a view to increasing the role of the private sector (Omore et al. 1999). In the period preceding the 1980s, parastatals and other quasi-government institutions such as KCC and Kenya Farmers Association played major roles in marketing and delivery of agricultural commodities, services and inputs. With their collapse, there is increased reliance on the private sector, including community-based organizations (CBOs), for delivery of livestock and other agricultural services formerly in the government domain.

Cattle breeding in the smallholder sector depends on the availability and cost of artificial insemination (AI) services and/or bull service. Use of AI was very popular when it was provided almost free-of-charge by the government. With the withdrawal of these free services, farmers now depend on the support of the private sector and community based organizations.

### **1.1.3 Dairy farming in Limuru**

Limuru constituency is part of the larger Kiambu County located on the Eastern edge of the Great Rift Valley about 30 miles North West from Nairobi the capital city of Kenya. In the last census conducted in Kenya, Kiambu County's population was estimated to be at 1,623,828 people. Its residents rely mostly on farming as it has rich agricultural land. It is also well known for the production of high quality tea and also has other industries such as a shoe factory and dairy farming.

## **1.1 Problem Statement**

The milk industry has significantly contributed to the national economy of Kenya, household incomes and food security of the nation. Just like many other sectors, this

industry is faced with a number of technical, economic, institutional, processing and marketing problems (Karanja, 2003). These problems affect the ability of the sector to participate and compete in the domestic and International market. It is against this background that the purpose of this study will be to determine the challenges affecting milk marketing in Limuru with the area of focus being the small scale farmers delivering milk to Limuru Milk Processors

Several studies concerning the milk industry have been done. Mburu (2002) did a study on dairy micro and small enterprises with potential for growth in Nairobi, Nakuru, Eldoret, Kisumu and Meru areas. Muriuki (2002) conducted a study on smallholder dairy production and marketing in eastern and southern Africa. Yigrem, et al (2008) did a study to investigate dairy production, processing and marketing systems of Shashemene–Dilla area, South Ethiopia. Mwendwa (2008) did a study to establish strategic responses by Kenya milk processors to environmental challenges. To the best of the researcher’s knowledge, no research has been done on marketing challenges affecting small scale dairy farmers in Limuru constituency. This study therefore attempted to answer the following research question; What are the marketing challenges affecting small scale dairy farmers delivering milk to Limuru Milk Processors?

### **1.3 Objective of the study**

The objective of this study was to investigate the challenges affecting milk marketing in Limuru constituency, Kenya.

### **1.4 Value of study**

This study would benefit academicians seeking information on the marketing challenges affecting small scale dairy farmers and would also contribute to the

reference material of the study area. It will also be useful to milk processors in the development of marketing strategies that would help farmers market their milk better. Last but not least, it would be useful to the county government in the assessment of economic activities in the region and how the small scale dairy sector is contributing towards the development of the region.



## CHAPTER TWO

### LITERATURE REVIEW

#### 2.1 Introduction

This chapter seeks to review the literature on marketing, the marketing mix and marketing concepts related to the challenges affecting milk marketing.

#### 2.3 Marketing Management Philosophies

According to mba-lectures.com, several concepts can be adapted by marketers when conducting their marketing activities. These include the production concept which is the philosophy that supply creates its own demand and consumers may favor those products that are widely available and in low cost, Product concept – This is when consumers favor those products that offer the most quality, performance or innovative features, selling concept – This is the marketing approach used by organizations and could either be through aggressive selling or promotional efforts so as to enact exchanges with otherwise passive consumers, the marketing concept – where the key is to achieve organizational goals and this consists of being more effective than competitors in integrating marketing activities towards determining and satisfying the needs and wants of target markets. The key elements of this concept are the target market, customer needs and profitability. We also have the societal marketing concept where the organization is tasked to determine the needs, wants and interests of the target markets and to deliver the desired satisfactions more effectively and efficiently than competitors in a way that preserves or enhances the consumers and the society's well-being.

Marketing is therefore of utmost importance in our global economy because it is used in all organizations to make either goods or services available to consumers. It consumes a sizable portion of the “buyers shilling” thus contributes to the running of the global economy; it encourages consumer knowledge and awareness and can also promote the welfare of the consumers and the society at large.

## **2.4 Marketing Mix**

The marketing mix is the tactical toolkit of product, place, price and promotion that marketers manipulate in order to satisfy their customers and implement their target market strategies (CIM, 2001). These elements are commonly known as the 4 Ps and they are very useful in the sale of a product. They may be enhanced, deducted or combined in order to create the strategy necessary to effectively and efficiently sell a product.

The marketing implication of the mix is that it is important in the development and management of a product that will ultimately satisfy a customer’s need. It also focuses on making the product available in the right place and at an acceptable price to buyer. It requires communicating information that helps customers determine if the product will satisfy their needs and is also important in marketing planning where these activities are planned, organized, implemented and controlled so as to meet the needs of the customer within the target market. The primary goal of any marketing strategy should therefore be to create and maintain the right mix of these elements so as to satisfy customer needs for a general product type.

### **2.4.1 Product**

When examining product as a variable in the marketing mix, the marketing implications related to this that come to mind are: Does it lead to customer

satisfaction? Does the product appeal to target market needs? What is the target market? Marketers consider three levels of a product – core, actual and augmented and this typically creates a brand identity for their physical products and service products. Product positioning, product name, quality, packaging and associated customer services are some of the issues that marketers need to address related to product (Rosenbloom, 1998).

Product includes both tangible and intangible elements. The tangible, are those things that customers can touch, feel, taste or smell. The intangible include such things as the image of the organization making the offering, the psychological aspects of pricing for example, high price may be equated to high quality. Production in marketing therefore involves the creation and modification of brand names, packaging, after sale services etc. To maintain an assortment of products, an organization needs to embrace innovation so as to keep up with the changing customer tastes and preferences as well as technological advancements.

#### **2.4.2 Place/Distribution**

In order to satisfy customers, the products need to be available at the right time and place and in the desired quantities. The products also need to be conveniently located for accessibility by the customers which will then facilitate an exchange process (Dibb and Smikin, 2000).

Various distribution channels can be used in order to make the product available to the consumer. The most common channel for most goods is - product comes from manufacturer, goes through the whole seller, retailer and then to the consumer. In the case of milk, sometimes the product may go directly to the consumer. Depending on the product being distributed, there are three common distribution channels, that is:

intensive distribution which is used to distribute low priced or impulse purchase products, exclusive distribution - limiting distribution to a single outlet and selective distribution where retailers are chosen to distribute a product.

### **2.4.3 Promotion**

This variable involves activities that are used to inform the consumer. It includes all forms of communication used to relay the benefits of your offering to the client. Key promotional techniques include advertising, personal selling, public relations, sponsorship, sales promotion, direct mail and the internet. These are some of the most costly marketing activities undertaken by a business and must be managed to good effect (Belch and Belch, 2000). It relates to the promotional mix, that is, the types of communication that are available to the market. These are: sales promotion, advertising, sales force, public relations, word of mouth and direct marketing. The promotional variable is aimed at creating awareness, educating customers and helping in sustaining interest in established products.

## **2.2 Marketing**

The Chartered Institute of Marketing defines marketing as the management process responsible for identifying, anticipating and satisfying customer requirements profitably. It consists of individual and organizational activities that facilitate and expedite satisfying exchange relationships in a dynamic environment through the creation, servicing distribution, promotion and pricing of goods, services and ideas.

(Etzel, Walker and Stranton, 1997) go on to add that the definition has two significant implications. That is, the entire system of business activities should be customer oriented and customers' wants must be recognized and satisfied. Marketing should start with an idea about a want satisfying product and should not end until the

customers' wants are completely satisfied, which may be some time after the exchange is made.

#### **2.4.4 Price**

This is the value placed on the physical good, service or idea being offered by the marketer to the target market. In the marketing mix, price includes payment conditions, credit and financing plus the notion of the value for money as perceived by targeted customer. Pricing is of fundamental importance to the organization affecting the demand for products and the financial viability of the company (Diamantopoulos and Mathews, 1995).

Price is a critical component of the marketing mix because one of the important concerns that customers have is the value obtained in an exchange. It is also a competitive tool and can be used to establish a products image. The price of an item is an important determinant of the value of the sale. In theory, price is determined by the discovery of what customers perceive is the value of the sale. Researching consumers' opinions about pricing is important as it indicates how they value what they are looking for as well as what they are willing to pay. This component of the marketing mix is therefore an important tool used by an organization in trading off the benefits of one's competitive strength in the marketing mix against the benefits of the others. It is also important in the allocation of resources so as to achieve the organizational goals.

#### **2.5 Marketing challenges in small scale dairy farming**

Kenya is one of the highest consumers of milk in the developing world, consuming an estimated 145 litres per person, per year, more than five times the milk consumption in other East African countries (Small Holder Dairy Project, 2005) .In Africa, Kenya

is the only other country, after South Africa, that produces enough milk for both domestic consumption and export. Sudan on the other hand is the largest producer of milk to the Common Market for East and Southern Africa (COMESA). From the statistics above, it is clear that with proper marketing, the milk industry can contribute far much more than it is contributing to the economy of Kenya if some of the challenges such as the ones listed below are addressed.

### **2.5.1 Road Infrastructure**

The road network has a huge impact on the marketing of milk as it links the production areas with the processors, rural and urban markets (marsgroupkenya.org). A few cooperative societies have their own means of transport in form of pickups, trucks and lorries. However, due to reduced intake by most cooperatives, most vehicles are under-utilized and in poor condition. Poor road network often results in high transactional costs and inaccessibility to input and output markets in the sector. In terms of marketing, this may lead to uncompetitive pricing since the high transport costs will be factored in the high prices. Poor infrastructure has also contributed to the poor market integration in the country.

Milk is highly perishable and sometimes the poor road network may lead to delays in the collection of milk thus a faster reduction in quality which may result to losses if the milk is rejected by the processors due to spoilage. Poor road network may also lead to spillages which if added up could lead to losses in revenue to the farmer.

### **2.5.2 Distribution channels**

According to the FAO report, 2011 on Dairy Development in Kenya, before market liberalization in the early 1990s, there was an organized milk collection and bulking system in the formal market with two types of milk delivery to KCC facilities: by

individual dairy farmers or by dairy cooperative societies. With liberalization and the collapse of KCC, the collection and bulking system also collapsed. At present, collection and bulking is a complex of different systems depending on processors, intermediaries, the road network, milk sheds and many other factors.

The transportation of milk depends on the amount and the buyer. Major processors have their own collection, bulking and transportation systems. Stainless steel (seamless) cans, and occasionally plastic cans, are used for bulking milk from individual suppliers and delivering it to processors' collection, bulking and cooling centres, from where it is transported in cans or by refrigerated tanks to the main processing plants. In some areas, powerful milk intermediaries (traders) have positioned themselves between the market and the milk producers. Their presence complicates the traceability of milk and brings a risk of cross-contamination and microbial overload.

Due to limited market opportunities, there is a category of losses that the farmer experiences commonly known as "forced consumption". This is where the surplus or uncollected milk is used by the family, the calves, if there are any, and sold or given to the neighbour. In most cases, the family may be consuming more than it would normally require hence the forced consumption. The Dairy Master Plan report (MoLD, 1991) indicated that "forced consumption" is critical in the estimation of supply response, especially where it is assumed that provision of cooling facilities will draw forth the evening milk and where the general assumption is that if evening milk could be collected, total marketed milk could rise by 40 to 50 percent. This, however, may not be true. Provision of over 60 coolers to societies in early and mid

1980s on the assumption of losses of the evening milk did not succeed in drawing the milk. The Rapid Appraisal study (Omore et al., 1999) reports that a Ministry of Agriculture report estimated that 30 percent of milk production from these districts is lost annually due to the poor state of roads hence limited distribution.

At the market level a study on milk borne health risks to consumers in Kenya (Omore et al., 2001) indicates that post-harvest losses incurred in the market may be roughly assessed through the fate of leftover milk from previous day's sales. The study indicate that on average, one in every 4 traders of all cadres recorded leftovers of about 7 percent of the volume of previous days milk sales. However, only 2 percent of traders recorded leftover milk that was thrown away from previous day's milk collection.

### **2.5.3 Marketing**

The country is generally self-sufficient in milk and dairy products. However, the demand for milk and dairy products in developing countries is estimated to increase by 25% by 2025 (Delgado et al 1999). This increase will be attributed by rise in human population growth, further urbanization, increased disposable income, greater diversity of food products to meet nutritional needs and increased opportunities for domestic and external trade.

Indeed, dairy imports in developing countries may reach 38.9 billion litres of milk by 2030 (Food and Agriculture Organization (FAO) and International Dairy Federation (IDF, 2004). Fortunately, the country has the potential to increase milk production from the current 4.2 billion litres in 2009 to over 5.0 billion litres in 2014 (Cherono 2005). Milk production and market opportunities represent exciting challenges for smallholders in the country and if these potential productions and markets have to be



exploited, it will require expansion of specialized dairy cattle population, intensification in terms of inputs, value addition of milk and dairy products, and good market linkages for milk sales and input acquisition.

Milk marketing has also been overtaken by other beverages such as sodas, alcoholic beverages etc. Fortunately, The Kenya Dairy Association has seen this potential and has recently launched a Kshs. 50 million campaign to promote the consumption of milk and its products. The five month drive dubbed "Stay young Do milk", is aimed at showcasing milk as a fashionable drink and its products as healthy for the body. This campaign was launched in June 2012 and is part of an effort to also promote the consumption of packaged, processed milk. (The Star Newspaper, 28<sup>th</sup> June, 2012)

Since the informal market absorbs over 80% of the total milk sold, brokers, traders/hawkers, transporters, co-operatives and farmer groups play an important role in the promotion of milk and milk products in rural and semi rural areas. Analysis of dairy product imports and exports over the last ten years gives the indication that the country has become a net importer. Even after taking into account the drought conditions in 1999 and 2000, the exports remain lower than early 1990s. This means that the country has lost a sizeable export market for dairy products thereby further shrinking the outlets for Kenyan dairy products. The volume and value of dry milk powder imports has at the same time increased four folds. This is mainly attributed to the drought in 1999/00 and the non-availability of locally manufactured milk powder due to the problems facing KCC. Despite these recent increases in imports, the volumes imported in 2001 and 2002 still account for a small percentage of the national production and total milk processed.

#### **2.5.4 The Informal Market**

Since the liberalization of the dairy industry in 1992, new institutional arrangements in milk collection, processing and marketing have emerged. At the farm gate level, informal marketing channels dominate with most farmers using this channel. These channels consist of middlemen who include hawkers, brokers, self-help groups as well as neighbors and business establishments like hotels. In total, the informal market channel is estimated to control 60% of the total marketed milk.

Dairy co-operatives, which used to be an integral part of the formal milk collection and marketing, have been relegated to buyers of last resort. Furthermore, the cooperatives are also marketing a big proportion of their milk directly to urban markets. The 45 licensed milk processors with an estimated daily intake of 600,000 litres handle the rest of the market share. This is as compared to over one million litres per day, which Kenya Co-operative Creameries (KCC) used to handle during its peak. (Karanja, 2003)

One major reason why farmers would prefer these markets is due to their flexible payment terms where they give cash once milk is collected, their flexibility in providing transportation where they may use bicycles and other cheaper modes of transport unlike the formal market where milk has to be collected within certain times (morning) and if the farmer is late then their milk is left out and they also have to wait for payments and in most cases the processors may delay the payments. The informal market however lacks structured credit terms which may help the farmer in the growth and expansion of their businesses. They may also lack adequate market

information and the ability to enforce contracts in impersonal trade, which are still serious impediments for trade.

Despite the competitive advantage of raw-milk trade, critics have pointed out that raw milk sales activity is characterized with the moral hazard of adulteration. There is also concern on handling containers commonly used by majority of raw-milk traders and their difficulty to sterilize. Another concern is that the hawker may only have a short-term view of business and may thus be merely interested in skimming easily-accessible supply and re-sale markets rather than in product and market development. Thus, the critics argue that raw-milk sales activities are associated with great sanitation and safety risks and pose a public health hazard yet it may not possess a significant role for long-term development of the industry. On the other hand, advocates of raw milk trade feel that its continued dominance despite official prejudice against it implies official misallocation of efforts to develop a western-model milk processing and distribution channel. They argue that giving legitimacy to raw milk trade activity would give it a long-term view thus giving the traders confidence to scale-up their business and engage in product and market development. Consumer education may also help in alleviating the moral hazard problem

From the beginning of 1980s a series of trade reforms have taken place in Sub-Saharan Africa (SSA) as part of their structural adjustment programmes. These programmes have aimed at boosting economic growth in the area and facilitating trade by decontrolling input and output prices, eliminating regulatory control over input and output marketing, restructuring public enterprises and reducing marketing activities. The expectation was that improving price incentives and liberalizing markets would be enough to induce supply response and well-functioning markets.

Many African governments still intervene where agricultural marketing is concerned and in countries where the government has withdrawn, the private sector (informal market) has always struggled to replace the role previously occupied by the government.

Putterman (1995) noted that, the withdrawal of state involvement from agricultural marketing would not automatically lead to improvement in smallholder agriculture and market conditions through the informal markets due to imperfections and informal barriers. Ashimongo (1995) argues that although the informal markets are able to withstand frictions in the market, the fluctuation of the supply between the harvest seasons is not balanced by trade flows from other regions, which leads to wide variation in prices as well as food insecurity as farmers are unable to store their own production since the informal market offers ready market.

### **2.5.5 Milk consumption and consumer preferences**

Kenya is the one of the highest consumers of milk (SDP, 2003). Almost all dairy consumption is in the form of liquid milk. 86% is marketed raw and only 14% is processed. Processed milk products include pasteurized milk, ultra heat treated (UHT) long life milk, cultured milk (mala & yoghurt), cheese, butter, ghee and milk powder. The unprocessed products mainly comprise of raw and fermented milk.

Consumption of dairy products in Kenya is principally in the form of liquid milk in both urban and rural areas, with higher milk consumed in rural areas compared to urban areas. In the rural areas, this largely takes the form of raw milk while in the urban areas it comprises both pasteurized and raw milk. In Nairobi for instance, 64 percent of the total volume of dairy products consumed per household is in the form of pasteurized milk while 23 percent is raw milk (Ouma et al., 2000). Consumption of

the highly processed dairy products is limited to a few households, either because they are unaffordable or because of taste and preferences of consumers. The high prices of processed products are due to the added costs of processing and packaging, which is usually passed on to consumers.

Due to the high costs of processed milk, various milk companies have come up with differentiated milk products such as smaller packaged milk, high fat content milk, low fat content milk so as to appeal to the different customer segments. Processed milk in Kenya is generally considered expensive therefore there is a rise in the consumption of raw milk which may be unhygienic due to the handling techniques. The key determinants of milk buying behavior at the consumer level are price, delivery and availability.

An opinion survey conducted by Sharma (2000) in Andhra Pradesh, India to ascertain the consumer's perception on quality of milk from different marketing agencies indicated that the quality of milk is primarily judged on the basis of level of fat content in the milk. Majority of households in India expressed that milk supplied by the cooperatives was of medium quality. In the study it was found that, the Godavari Cooperative Dairy (GCD) milk was standardized at 3 percent fat. Since the preference of the families in the study is high fat milk, the consumers preferred to buy the milk from local vendors. Several consumers from the higher income groups expressed that the dairy milk contains less fat as compared to milk from private vendors.

According to Angel and Manuel (2005) consumer perception of quality is of utmost importance. When consumers perceive high spending on advertising, this contributes to their perception of the level of confidence that marketing managers have in the product (Kirmani and Wright, 2003). Perceived advertising spending has positive

effects, not only on brand equity as a whole, but also on each of the elements it is made up of: loyalty, awareness, perceived quality and brand image.

### **2.5.6 Competition and product differentiation**

All dairies feel threatened by their competitors especially from the same region. Individual farmers and middle men often offer competition particularly in the marketing of raw milk. Large and well established processors from other geographical regions mainly in Central highlands, Rift Valley region and Nairobi offer competition in pasteurized milk, fermented and yoghurt milk. Most dairies however feel that there is an upper hand in selling raw milk due to its superior quality.

Kang'ethe et al (2000) felt that to stay relevant in this competitive market, the dairy processors need to keep on adding value to their products by; selling different products, improve packaging, develop new products, improve on quality etc. He also added that, they need to diversify their products through value addition by using simple and cost-effective methods of processing milk. Consideration should be given to processing of storable products such as ghee and cheese as these are processed and successfully marketed by dairies in other areas of Kenya. The dairies need to establish strategically positioned milk collection centres with cold storage facilities to increase the quantity of milk they handle. This may however be a challenge to farmers and the small processors due to the costs associated with them.

### **2.5.7 Government policy and support**

Kenya's dairy industry is regulated through the Dairy Industry Act, Chapter 336 of the laws of Kenya, as enacted in 1958. Under the Act, the Kenya Dairy Board was established in order to organize, regulate, and develop efficient production, marketing, distribution and supply of dairy produce in Kenya. However, over the

years, the board has limited its operations primarily to the regulation of businesses involved in the processing and distribution of dairy products, at the risk of leaving the industry in the hands of a nationwide cooperative dairy processing and marketing cooperative called the Kenya cooperative Creameries Limited (the KCC). After liberalization of the dairy sector in 1992, more farmers began sending their unpasteurized produce straight to consumers at a highly reduced cost (Katz, 2002). As a result, only a small percentage of Kenya's milk is now processed. The government has been attempting for years to bring more farmers back into the formal market while the private processors are finding it hard to invest in additional processing capacity necessary to produce products like long-life UHT milk or butter and cheese. Liberalization inspired many private processors to enter the market but they were unable to compete with the huge informal market that cropped up as well, (Government of Kenya, 2006).

High local costs of electricity, other production and transport costs also make it difficult for Kenyan processors to command many export markets (Evenson and Mwabu, 1998). Regrettably so, given the ability Kenya's farmers have developed over time in milk production, milk should be a "cash cow" to farmers. Kenya can produce milk competitively; however, this advantage is lost due to inefficiencies in milk collection, marketing and processing due to lack of government support and poor government policies. In line with global trends in milk producing countries, the country should promote policies that enhance the use of economies of scale and size while streamlining the delivery of inputs and services to farmers. Beynon et al, (1998) also identifies a number of policy and institutional issues that need to be addressed by various stakeholders in the industry in charting the way forward. These include measures to enhance productivity and competitiveness of production and institutional

framework to safeguard and improve hygienic standards of the raw milk while charting suitable development path for the informal milk market.

The decision by the government of Kenya to relax licensing procedures and bureaucracy has made it relatively easy for anyone interested in engaging in dairy processing and distribution business to get a license to undertake such business. Hence the immediate impact of marketing liberalization in Kenya's dairy industry has been intensified market competition among the existing dairy firms, especially the KCC and the other cooperative dairy plants and businesses. A number of new dairy processors have entered the market, and this has undoubtedly caused some changes in the market shares. However, the KCC still remains the dominant firm in Kenya's dairy industry. Intensified market competition also appears to have resulted in relatively stable milk producer and consumer prices since 1992, but no detailed studies to investigate this aspect have been undertaken. Time now appears to be ripe for studies to document the patterns of actual changes in prices of milk and milk products and market shares among the major players in Kenya's dairy industry since the "Wind of Change" in the name of marketing liberalization began to sweep across the industry in May 1992

According to Shah (1996), though the current import tariffs more than adequately protect the local industry with no major imported milk coming into the local market except for value added products such as cheese and butter, imported milk powder continues to come in, posing threats to the locally processed liquid milk sales. Shah (1996) also feels that while Kenyan standards for dairy products are in place to protect the interest of the consumer, the regulatory authorities such as the Kenya Bureau of Standards and Kenya Dairy Board must ensure all players in the industry fully comply



with these set standards. Kenyan dairy producers face competition from the importation of powdered milk and other dairy products— although this is reducing.

RESEARCH METHODOLOGY

## **CHAPTER THREE**

### **RESEARCH METHODOLOGY**

#### **3.1 Introduction**

This chapter describes the research methodology that was used in this study. It includes the research design, population of study, sampling design, data collection and analysis techniques.

#### **3.2 Research Design**

The study employed a descriptive survey research design. Descriptive survey design is used to gather, summarize, present and interpret information for the purpose of clarification (Orodho 2002). This research design is particularly appropriate since the study aims at collecting information from respondents on marketing challenges affecting small scale farmers in Limuru .

#### **3.3 Population of the study**

The target population of the study was the small scale dairy farmers delivering milk to Limuru Milk Processors Ltd. This population was drawn from Ngecha, Ngarariga, Ndeiya, Tigoni and Kikuyu region. The number of dairy farmers delivering milk to Limuru Milk Processors is 9600 with 95% being small scale dairy farmers (ILO, 2009). Therefore, the study population was 9120 small scale farmers.

#### **3.4 Sample size and sampling techniques**

The sample size was 369 small scale farmers delivering milk to Limuru milk processors. It was distributed in the five regions of Ngecha, Ngarariga, Ndeiya, Tigoni and Kikuyu as shown in table 3.1 below.

**Table 3.1: Study Sample**

Region	Sample size	Sampling ratio (%)
Ngecha	74	20.1
Ngarariga	74	20.1
Ndeiya	73	19.8
Tigoni	74	20.1
Kikuyu	74	20.1
<b>Total</b>	<b>369</b>	<b>100</b>

To determine the sample size, the researcher used the following formula by Kathuri and Pals (1993)

$$n = \frac{\chi^2 NP (1-P)}{\sigma^2 (N - 1) + \chi^2 P (1 - P)}$$

Where:

n = required sample size

$\sigma^2$  = the degree of accuracy;  $\sigma$  value is 0.05

N = the given population size from the sampling frame

$\chi^2$  = Table value of chi-square for one degree of freedom, which is 3.841

P = Population proportion, assumed to be 0.50

### 3.5 Data Collection

Primary data was collected using semi structured questionnaires. The questionnaires comprised two sections. The first section constituted questions on the demographic information of the respondent and the second part constituted questions on the marketing challenges affecting the small scale dairy farmers. The researcher used research assistants who were deployed to Limuru to assist in administering the

questionnaires. They accompanied the Limuru Milk Processor's milk collectors as they collect milk from the farmers.

### **3.6 Data Analysis**

Before processing the responses, the completed questionnaires were edited for completeness and consistency. The data was then coded to enable the responses to be grouped into various categories. Thereafter, data was analyzed using descriptive and factor analysis methods. Descriptive statistics were used to summarize the data. Factor analysis was used to summarize the variables into an easily understandable framework.

## CHAPTER FOUR

### DATA ANALYSIS AND INTERPRETATION

#### 4.1 Introduction

This chapter outlines the research findings on marketing challenges affecting small scale dairy farmers delivering milk to Limuru Milk Processors Limited based on the questionnaires administered. The objective of the study was to investigate the challenges affecting milk marketing in Limuru constituency, Kenya. The study was conducted in Ngecha, Ngarariga, Ndeiya, Tigoni and Kikuyu areas which form the milk catchment area for Limuru Milk Processors Limited. 369 questionnaires were sent out to the field; however 303 respondents responded and returned back the questionnaires duly filled. The response rate was 82.1% which according to Mugenda and Mugenda (1999) is adequate for analysis and reporting. The study used descriptive statistics and factor analysis to analyze the data. In the descriptive statistics, relative frequencies were used in some questions and others were analyzed using mean scores and standard deviation with the help of Likert scale ratings in the analysis and data collection. Factor analysis was used to summarize the variables into an easily understandable framework.

#### 4.2 Demographic Information of the Respondents

##### 4.2.1 Gender

The respondents were required to indicate their gender in the questionnaire. This question was intended from the onset to determine the most prevalent gender engaged in dairy farming. 64% of the respondents were male while 36% were female and the results are presented in the table 4.1 and figure 4.1 below.

**Table 4. 1: Gender of the respondents**

	Frequency	Percent
Female	109	36.0
Male	194	64.0
<b>Total</b>	<b>303</b>	<b>100.0</b>

*Source: Data collected*

The findings above show that most of the respondents who were willing to take part in the questionnaire were of the male gender.

#### 4.2.2 Age of the respondents

Age is one of the factors that may influence ownership of dairy animals. The respondents were therefore requested to indicate their age bracket and the results are shown in table 4.2 below

**Table 4. 2: Respondent's age by category**

	Frequency	Percentage
20 Years and below	33	10.9
21 to 30 Years	111	36.6
31 to 40 Years	64	21.1
41 to 50 Years	71	23.4
More than 50 Years	24	7.9
<b>Total</b>	<b>303</b>	<b>100.0</b>

*Source: Data Collected*

The table above shows that 36.6 per cent of the respondents were between 21 to 30 years old, 23.4 per cent of the respondents were 41 to 50 years old, 21.1 per cent were between 31 and 40 years while 10.9 per cent and 7.9 per cent were 20 years and below and more than 50 years respectively. It infers therefore that majority of the farmers delivering milk to Limuru Milk Processors were below 40 years and therefore

energetic. As such these individuals would be keen to factors that will affect marketability of their produce.

#### 4.2.3 Respondents Level of Education

The level of education is also an important factor influencing entrepreneurial activities. Therefore the research sought to determine the highest level of education attained by the farmers indulging milk production and marketing. The findings were classified and the findings are presented in the table below

**Table 4. 3: Respondents Highest Level of Education**

	<b>Frequency</b>	<b>Percent</b>
Certificate	144	47.5
Diploma	73	24.1
Degree	42	13.9
Masters degree	44	14.5
<b>Total</b>	<b>303</b>	<b>100.0</b>

*Source: Data collected*

47.5% of the respondents have certificate as their highest level of education, 24.1% were diploma holders, and 13.9% were degree holders while 14.5% had attained a master's degree.

#### 4.2.4 Number of dairy animals owned by respondents

The research also sought to determine the number of dairy animals owned by the respondents. The ownership of animals was categorized into different clusters and the findings were as indicated in the table 4.4 below;

**Table 4. 4: Number of Dairy Animals Owned by Respondents**

	<b>Frequency</b>	<b>Percent</b>
3 or Less	154	50.8

4 to 6	27	8.9
7 to 8	58	19.1
9 and above	64	21.1
<b>Total</b>	<b>303</b>	<b>100.0</b>

*Source: Data collected*

50.8 per cent own less than 3 animals, 21.1 per cent own 9 and above animals, 19.1 per cent own 7 to 8 animals while 8.9 per cent own 4 to 6 animals.

#### 4.2.4 Dairy farming experience

To assess the intensity of the challenges that the farmers face in the dairy farming, the research sought to determine the number of years the farmers have been in the business. The findings are as presented in table 4.5 below. 30.4% of the respondents have been in the dairy farming business for between 6-10 years. 26.4% have attained an experience of 11-15 years, 25.4% have been in the business for 1-5 years while 17.8% have been in the business for over 16 years.

**Table 4. 5: Years Spent in Dairy Farming**

	<b>Frequency</b>	<b>Percentage</b>
1-5 yrs	77	25.4
6-10 yrs	92	30.4
11-15 yrs	80	26.4
16 yrs and above	54	17.8
<b>Total</b>	<b>303</b>	<b>100.0</b>

*Source: Data collected*

#### 4.3 Marketing Challenges Affecting Small Scale Dairy Farmers

The research identified a number of marketing challenges that affect small scale dairy farmers. The respondents were required to indicate the effect of the factors on the



dairy farming business using a scale of 1 to 5 where 1 indicated very low extent while 5 indicated to a very high extent. The mean scores were computed and the findings are presented in this section.

#### 4.3.1 Informal markets

The respondents were asked on how the informal market influences the marketing of milk in their areas and the extent to which they influenced the marketing of dairy products.

**Table 4. 6: Whether informal markets influence marketing of dairy products**

	Frequency	Percentage
No	84	27.7
Yes	219	72.3
<b>Total</b>	<b>303</b>	<b>100.0</b>

*Source: Data collected*

According to the findings presented in table 4.6 above, majority of the respondents (72.3 per cent) indicated that informal market influences marketing of dairy products while 27.7 per cent indicated that informal market do not influences marketing of dairy products.

**Table 4. 7: Extent informal markets influence marketing of dairy products**

	Frequency	Percentage
Low extent	84	27.7
Great extent	121	39.9
Very great extent	98	32.3
<b>Total</b>	<b>303</b>	<b>100.0</b>

*Source: Data collected*

40 percent of the respondents felt that informal markets influence the marketing of dairy products to a great extent, 32 per cent indicated to a very great extent while 28 per cent said that informal market influences marketing of dairy products to a low extent as shown on table 4.7.

### 4.3.2 Marketing

The research sought for different factors relating to marketing influencing the milk production and marketing by the dairy farmers successfully conducted. The findings were as presented in table 4.8 below;

**Table 4. 8: Marketing**

	<b>Mean</b>	<b>Std. Deviation</b>
Negotiated pricing	4.05	.775
Provide a competitive advantage	3.12	.815
Reduced barriers to entry	3.89	1.793
Serves tailored customers' needs or preferences	2.85	1.222
Enhanced market liberalization	3.84	1.220
Offers ready market	3.49	1.603
Offers convenient collection of Milk	2.49	1.304
<b>Overall mean score</b>	<b>3.39</b>	

*Source: Data collected*

The overall mean score for the marketing factors was 3.39 indicating that most of the factors had an impact on the dairy farming practice by the farmers. However, negotiated pricing had a mean score of 4.05 meaning that it has a greater influence on the dairy milk production and marketing by the farmers while convenience in the

collection of milk was rated as a having a less influence on the dairy production and milking.

### 4.3.3 Middlemen Network

The study sought to find out how the middleman network was affecting the marketing of milk in the respondents area. Below are the findings

**Table 4. 9: Middlemen Network and their influence in Milk Marketing**

	<b>Mean</b>	<b>Std. Deviation</b>
Middlemen use exploitative practices in milk procurement due to poor organization and low risk bearing ability of farmers.	4.60	.491
They advance cash to poor farmers and collect milk at low prices round the year.	3.30	.910
Middlemen trader exercises essential entrepreneurial functions of exploring and creating market exchange opportunities thereby offering the farmers ready market for their produce.	3.96	.397
Using their closeness to the farmers' middlemen gives loans to farmers and as such offers low prices to farmers in return.	3.96	1.122
Middlemen in most cases offers farmer cash on delivery	4.54	.791

*Source: data collected*

According to the table 4.9 above, majority of the respondents strongly agreed that middlemen use exploitative practices in milk procurement due to poor organization and low risk bearing ability of farmers as indicated by a mean score of 4.60. In most cases they also offer farmers cash on delivery as indicated by a mean score of 4.54. Further, they were in agreement with the statements that middlemen trader exercises

essential entrepreneurial functions of exploring and creating market exchange opportunities thereby offering the farmers ready market for their produce as indicated by a mean score of 3.96 and that using their closeness to the farmers' middlemen gives loans to farmers and as such offers low prices to farmers in return as indicated by a mean score of 3.96. They were however neutral on the statement that middlemen advanced cash to poor farmers and collect milk at low prices round the year as indicated by a mean score of 3.30.

#### 4.3.4 Quality Aspects/ Consumer Perception

The respondents were also required to indicate the influence of consumer perception on the milk production by the farmers. Consumer perception is affected by a number of factors identified by the researcher. The mean score of the factors was computed and the findings presented in table 4.10 below;

**Table 4. 10: Extent the Quality Aspect of Milk influences its Marketing**

	<b>Frequency</b>	<b>Percentage</b>
Moderate extent	45	14.9
Great extent	39	12.9
Very great extent	219	72.3
<b>Total</b>	<b>303</b>	<b>100.0</b>

*Source: Data collected*

72.3 per cent felt that quality influences milk marketing to a very great extent, 14.9 per cent to moderate extent and 12.9 per cent to a great extent. This therefore depicts that quality aspect of milk influences its marketing to a great extent as indicated by majority of the respondents

#### 4.3.5 Consumer perception of milk marketing

The respondents were also required to indicate the influence of consumer perception on the milk production by the farmers. Consumer perception is affected by a number of factors identified by the researcher. The mean score of the factors was computed and the findings presented in table 4.11 below;

**Table 4. 11: Consumer Perception and Marketing of Milk**

	<b>Mean</b>	<b>Std. Deviation</b>
Delivery time	4.78	.523
Packaging	4.60	.491
Uniform pricing	4.03	.833
Delayed payments for farmers	4.63	.648
Fat content (adulteration)	4.40	.839

*Source: Data collected*

#### 4.3.5 Government policy and support

The respondents were also required to indicate whether government policy and support influence the milk production and marketing. 80.2% of the respondents indicated in the affirmative while 19.8% indicated in the negative. The mean scores for the response were also computed and presented in table 4.12 below;

**Table 4. 12: Influence of Government Policy and Regulation in milk marketing**

	<b>Frequency</b>	<b>Percent</b>
No	60	19.8
Yes	243	80.2
<b>Total</b>	<b>303</b>	<b>100.0</b>

**Table 4. 13: Government Support**

The study also sought to determine how government policy and support influences the marketing of milk using the parameters shown in the table below.

	<b>Mean</b>	<b>Std. Deviation</b>
Market liberalization	4.11	.631
Policies on imports and export of milk from the country	4.10	.902
Government subsidies on import of processing plants	4.26	.742
Standards regulatory bodies (e.g. Kenya Bureau of Standards, Kenya Dairy Board)	4.31	.619
<b>Overall mean score</b>	<b>4.20</b>	

*Source: Data collected*

The table shows that regulatory bodies such as the Kenya Bureau of Standards and the Kenya Dairy Board influenced the marketing of milk to a great extent followed by government subsidies on import of processing plants as illustrated by a mean score 4.26, market liberalization as illustrated by a mean score 4.11 and policies on imports and export of milk from the country as illustrated by a mean score 4.10 .

#### **4.3.6 Other Factor Influencing Marketing of Milk**

The respondents also indicated other factors that influence the milk marketing and production in addition to the identified factors. The mean scores of the factors identified were computed and are presented in table 4.8 below;

**Table 4. 14: Factors Influencing Marketing of Milk**

	<b>Mean</b>	<b>Std. Deviation</b>
State of technologies	4.32	.469

Nature of distribution channels	4.38	.601
Road Infrastructure	3.21	1.329
Informal markets	4.72	.448
Milk consumption and consumer preferences	3.95	.775

*Source: data collected*

Table 4.14 shows that majority of the respondents felt that the factors influencing marketing of milk to a very great extent are informal markets as shown by a mean score of 4.72, nature of distribution channels as shown by a mean score of 4.38 and state of technologies as shown by a mean score of 4.32. Further, milk consumption and consumer preferences as shown by a mean score of 3.95 and road infrastructure as shown by a mean score of 3.21 were indicated to influence milk marketing to a great extent.

#### 4.4 Factor Analysis

The variables listed were then analyzed using factor analysis and the Eigen Values were used to summarize the challenges affecting milk marketing in Limuru area. The findings are presented in the tables below.

**Table 4. 13: Communalities**

	Initial	Extraction
1. Negotiated pricing	1.000	.995
2. Provide a competitive advantage	1.000	.995
3. Reduced barriers to entry	1.000	.998
4. Serves tailored customers' needs or preferences	1.000	.994
5. Enhanced market liberalization	1.000	.996
6. Offers ready market	1.000	.997
7. Offers convenient collection of Milk	1.000	.974

8. Middlemen use exploitative practices in milk procurement due to poor organization and low risk bearing ability of farmers.	1.000	.991
9. They advance cash to poor farmers and collect milk at low prices round the year.	1.000	.745
10. Middlemen trader exercises essential entrepreneurial functions of exploring and creating market exchange opportunities thereby offering the farmers ready market for their produce.	1.000	.748
11. Using their closeness to the farmers' middlemen gives loans to farmers and as such offers low prices to farmers in return.	1.000	.771
12. Middlemen in most cases offers farmer cash on delivery	1.000	.798
13. Delivery time	1.000	.684
14. Packaging	1.000	.991
15. Uniform pricing	1.000	.894
16. Delayed payments for farmers	1.000	.655
17. Fat content (adulteration)	1.000	.905
18. Market liberalization	1.000	.791
19. Policies on imports and export of milk from the country	1.000	.816
20. Government subsidies on import of processing plants	1.000	.624
21. Standards regulatory bodies (e.g. Kenya Bureau of Standards, Kenya Dairy Board)	1.000	.923
22. Technologies	1.000	.990
23. Distribution channels	1.000	.862
24. Road Infrastructure	1.000	.776
25. Informal markets	1.000	.998
26. Milk consumption and consumer preferences	1.000	.995

Extraction Method: Principal Component Analysis.



The above table helps the researcher to estimate the communalities for each variance. This is the proportion of variance that each item has in common with other factors. For example 'informal markets' and "reduced barriers to entry" has 99.8 per cent communality or shared relationship with other factors. This value has the greatest communality with others, while 'government subsidies on import of processing plants' have the least communality with others of 62.4 per cent.

**Table 4. 16 : Total Variance Explained**

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	11.260	38.829	38.829	11.260	38.829	38.829
2	8.089	27.894	66.723	8.089	27.894	66.723
3	1.842	6.351	73.074	1.842	6.351	73.074
4	1.548	5.338	78.412	1.548	5.338	78.412
5	1.317	4.540	82.952	1.317	4.540	82.952
6	1.194	4.116	87.068	1.194	4.116	87.068
7	.926	3.194	90.263			
8	.692	2.388	92.651			
9	.552	1.903	94.554			
10	.455	1.568	96.122			
11	.342	1.179	97.300			
12	.123	.425	99.380			
13	.083	.285	99.665			
14	.044	.151	99.816			
15	.020	.068	99.884			
16	.016	.054	99.938			
17	.011	.036	99.975			

18	5.967E-15	2.058E-14	100.000			
19	1.950E-15	6.726E-15	100.000			
20	7.693E-16	2.653E-15	100.000			
21	3.882E-18	1.339E-17	100.000			
22	-8.612E-17	-2.970E-16	100.000			
23	-2.199E-15	-7.583E-15	100.000			
24	-3.548E-15	-1.223E-14	100.000			
25	-7.295E-15	-2.516E-14	100.000			
26	-8.893E-15	-3.067E-14	100.000			

Extraction Method: Principal Component Analysis

In the above table, the researcher used Kaiser Normalization Criterion, which allows for the extraction of components that have an Eigen value greater than 1. The principal component analysis was used and six factors were extracted. As the table 4.16 above shows, these six factors explain 87.1 per cent of the total variation. These are the principal factors that influence the dairy milk production and marketing among the dairy farmers. Negotiated pricing contributed the highest variation of 38.8 per cent, competitive advantage contributes about 27.9% of the total variation, reduced barriers to entry in the market contributes 6.4%, tailored customer needs and preferences contribute 5.3% while enhanced market liberalization contributes 4.5% and the availability of ready market contributes 4.1% of the total variations. These factors altogether explain 87.068% (cumulative percentage) of the total variation while the remaining 20 factors in table 4.16 explain 12.932% of the total variation. It is notable that the contributions decrease as one move from one factor to the other up

to factor 6 i.e. from the negotiated pricing factor to the ready market. The factors are summarized in table below

**Table 4.17: Summary of factors**

Component	Principal Factors	Eigen Value
Factor 1	Negotiated pricing	38.8%
Factor 2	Competitive advantage	27.9%
Factor 3	Reduced barriers to entry	6.4%
Factor 4	Tailored customer needs and preferences	5.3%
Factor 5	Market liberalization	4.5%
Factor 6	Availability of ready market	4.1%

**Table 4. 14: Component Matrix<sup>a</sup>**

	Component					
	1	2	3	4	5	6
1. Negotiated pricing	.541	.835	-.037	-.035	-.006	-.056
2. Provide a competitive advantage	.985	-.123	-.023	-.088	-.031	.020
3. Reduced barriers to entry	.908	.406	-.035	-.074	-.022	-.020
4. Serves tailored customers' needs or preferences	.990	.071	-.028	-.086	-.027	.009
5. Enhanced market liberalization	.991	.067	-.028	-.086	-.029	.006

6.	Offers ready market	.770	.631	-.038	-.058	-.015	-.038
7.	Offers convenient collection of Milk	.598	-.779	.008	-.065	-.022	.075
8.	Middlemen use exploitative practices in milk procurement due to poor organization and low risk bearing ability of farmers.	-.806	.576	.006	.078	.031	-.051
9.	They advance cash to poor farmers and collect milk at low prices round the year.	-.530	-.228	.027	-.199	.604	-.090
10.	Middlemen trader exercises essential entrepreneurial functions of exploring and creating market exchange opportunities thereby offering the farmers ready market for their produce.	.158	.045	.112	-.301	.785	-.052
11.	Using their closeness to the farmers' middlemen gives loans to farmers and as such offers low prices to farmers in return.	-.427	-.551	-.357	-.276	-.115	.261
12.	Middlemen in most cases offers farmer cash on delivery	-.010	-.883	-.018	.019	-.033	-.130
13.	Delivery time	-.054	-.003	.619	.008	-.309	.449

14.	Packaging	-.806	<b>.576</b>	.006	.078	.031	-.051
15.	Uniform pricing	-.324	<b>.839</b>	.226	-.111	-.086	.123
16.	Delayed payments for farmers	-.204	-.004	<b>.746</b>	.093	.105	-.193
17.	Fat content (adulteration)	<b>.857</b>	.350	.012	.108	.033	-.187
18.	Market liberalization	.135	.178	-.432	.432	.212	<b>.568</b>
19.	Policies on imports and export of milk from the country	<b>.508</b>	-.711	-.127	-.148	-.035	-.116
20.	Government subsidies on import of processing plants	<b>.527</b>	-.489	.201	.208	.152	.013
21.	Standards regulatory bodies (e.g. Kenya Bureau of Standards, Kenya Dairy Board)	<b>.668</b>	-.637	.253	.077	.016	.037
22.	Technologies	.025	<b>.992</b>	-.028	.012	.011	-.073
23.	Distribution channels	<b>.740</b>	-.443	-.055	.140	.172	.256
24.	Road Infrastructure	.416	-.407	.203	<b>.444</b>	-.121	-.430
25.	Informal markets	<b>.908</b>	.406	-.035	-.074	-.022	-.020
26.	Milk consumption and consumer preferences	-.541	-.835	.037	.035	.006	<b>.056</b>

*Extraction Method: Principal Component Analysis*

The initial component matrix was rotated using Varimax (Variance Maximization) with Kaiser Normalization. The above results allowed the researcher to identify what

variables fall under each of the 6 major extracted factors. Each of the 26 variables were looked at and placed to one of the six factors depending on the percentage of variability; it explained the total variability of each factor. A variable is said to belong to a factor to which it explains more variation than any other factor. From the above table 4.18, the individual variables constituting the six factors extracted are shown in bold on the table.

#### **4.5 Suggestion on Ways of Overcoming Challenges Influencing Marketing of Milk**

The respondents were required by the study to suggest ways of overcoming the challenges affecting the marketing of milk in Kenya. According to the respondents, the government should support the formal sector so that they are able to match the informal sector in terms of pricing so that they can be able to market their milk to the cooperatives and milk processing firms. . They further called on the government to revive the closed down milk companies so as to ensure optimum productivity and marketing in the area. They also called for improvement of infrastructure so as to ensure that milk is collected and delivered to the factory in time and in good quality. Also, on the milk companies, the respondents indicated that they should improve on their marketing strategies and embrace IT technologies so as to offer efficient services to the farmers and that may also help in reducing the prices thus increasing their market share.

## CHAPTER FIVE

### SUMMARY, CONCLUSION AND RECOMMENDATIONS

#### 5.1 Introduction

This chapter presents the summary findings, discussions, conclusions drawn from the findings and recommendations made.

#### 5.2 Summary Findings

The study established that the informal market has a great influence on the marketing of dairy products. Negotiated pricing, reduced barriers to entry, enhanced market liberalization and the ability to offer ready market were established to be factors that affected farmers delivering milk to Limuru milk processors. Further, the study indicated that middlemen in the informal market use exploitative practices in milk procurement due to poor organization and low risk bearing ability of farmers, in most cases they offers farmer cash on delivery and form close relationships with the farmers where they can even offer then loans at low interest rates.

On quality and consumer perception, the study established that these influence marketing of milk to a great extent. The study also indicated that delivery time, delayed payments to farmers, packaging and fat content (adulteration) also affect the marketing of milk to a larger extent.

According to the study, government policy and regulation also influences the marketing of milk to a great extent. It also showed that standards regulatory bodies (e.g. Kenya Bureau of Standards, Kenya Dairy Board), government subsidies on import of processing plants, market liberalization and policies on imports and export

of milk from the country influenced marketing of milk to a great extent. Other factors that were found to affect milk marketability were distribution channels, technological use, consumer preferences and road infrastructure.

### **5.3 Conclusion**

The study concludes that the informal greatly influences the marketing of milk and milk products in Limuru. Other factors such negotiated pricing, competitive advantage, market liberalization, milk collection also boil down to the informal market as they offer better prices to farmers and flexibility in terms of services. The middlemen network also largely influences the marketing of milk in Limuru, they use exploitative practices and offer incentives to farmers such as soft loans so as to capture the market. Farmers would however rather distribute their milk through the processors if only they gave competitive prices. They want the dairy industry to be properly regulated so as to promote the formal industry which they felt would ensure the production and marketing of high quality milk products. It was felt that more support was needed by the government in policy making and support so as to promote the production and marketing of high quality milk

### **5.3 Limitations of study**

Due to the geographical dispersion of farmers in the study area, the main challenges were in the data collection where the data collectors had to be deployed in the different regions. Another challenge was timing where the Limuru milk company collectors would leave to collect the milk as early as 6.00am therefore posing a challenge to the data collectors. Limuru Milk Processors were however kind enough to let the data collectors accompany their drivers to the farmers thus saving them the transport constrain. Some farmers were also hostile and felt like they were being



investigated. This was overcome by an introduction letter given to the collectors by the Company and also the presence of the drivers gave them some relief. There was also a language barrier but the collectors had been well trained and conversant with the local language.

### **Recommendation for Policy and Practice**

The study recommends that more government support should be accorded to both farmers and the milk processors so that the farmers can sell their milk competitively to the milk processors. The government, through regulatory bodies such as KEBS and KDB should set up measures that ensure the informal market is controlled so as to ensure that only quality milk is marketed to the consumer.

The study also recommends that the government should give subsidies on importation of milk processing equipment so as to revive the collapsed plants and also encourage the development of more milk processing plants. This will help increase the processing capacity hence the marketing of more milk in the areas. More support should also be given in other infrastructure such as improvement of the road network so to ensure timely and non-wasteful delivery of milk.

Milk companies should also invest in modern ways of processing milk so as to ensure consistency in the production and marketing of high quality milk and its products. Modern technologies can also help preserve milk through proper packaging and can also be a useful tool in advertising the brand of milk to the targeted consumer. .

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## APPENDICES

### Appendix I: Questionnaire

*Kindly fill in the following questionnaire. Information obtained will be used for academic purposes only and will therefore be handled with the highest level of confidentiality. Your corporation will be highly appreciated*

#### Part A: Demographic Information

1. Please indicate gender

Male  Female

2. Please indicate age bracket

20 Years and below  21 to 30 Years

31 to 40 Years  41 to 50 Years

More than 50 Years

3. Please indicate your highest educational qualification

Certificate  Diploma

Degree  Masters degree

Others (specify).....

4. Please indicate number of dairy animals you own

Less than 3  4 to 6

7 to 8  9 and above

5. Please indicate years spent in dairy farming

1-5 yrs  6-10 yrs

11-15 yrs  16 yrs and above

6. Please indicate region where you practice dairy farming.....

**Part B: Marketing Challenges Affecting Small Scale Dairy Farmers**

**Informal markets**

7. In your own opinion, do you think the informal market influences marketing of dairy products in your area?

Yes  No

i. If yes, to what extent.

Very great extent  Great extent

Moderate extent  Low extent

Very low extent

8. Using a scale of 1 to 5 where 1 = to a very low extent and 5 = to a very great extent, indicate the extent to which the following characteristics of informal markets influence the marketing of milk in your area.

	1	2	3	4	5
Negotiated pricing					
Provide a competitive advantage					
Reduced barriers to entry					

Serves tailored customers' needs or preferences					
Enhanced market liberalization					
Offers ready market					
Offers convenient collection of Milk					
Others (Please specify)					

9. What is your level of agreement with the following aspects of the middlemen network and their influence in milk marketing in your area? Use a scale of 1 to 5 where 1 = strongly disagree and 5 = strongly agree.

	1	2	3	4	5
Middlemen use exploitative practices in milk procurement due to poor organization and low risk bearing ability of farmers.					
They advance cash to poor farmers and collect milk at low prices round the year.					
Middlemen trader exercises essential entrepreneurial functions of exploring and creating market exchange opportunities thereby offering the farmers ready market for their produce.					
Using their closeness to the farmers' middlemen gives loans to farmers and as such offers low prices to farmers in return.					
Middlemen in most cases offers farmer cash on delivery					
Others (Please specify)					

### Quality Aspects/ Consumer Perception

10. To what extent do you think quality aspect of milk influences its marketing?

Very great extent                    [ ]      Great extent                            [ ]

Moderate extent                    [ ]      Low extent                                [ ]

Very low extent                      [ ]

11. Using a scale of 1 to 5 where 1 = to a very low extent and 5 = to a very great extent, indicate the extent to which the following aspects of consumer perception and quality influence the marketing of milk to Limuru Milk Processors.

	1	2	3	4	5
Delivery time					
Packaging					
Uniform pricing					
Delayed payments for farmers					
Fat content (adulteration)					
Others( Please specify)					

### Government policy and support

12. Do you think government policy and regulation has any influence on marketing of milk.

Yes            [   ]            No            [   ]

1. If yes, to what extent?

Very great extent            [   ]            Great extent            [   ]

Moderate extent            [   ]            Low extent            [   ]

Very low extent            [   ]

13. To what extent do you think the following aspects of Government support, policy and regulation influences milk marketing? Use a scale of 1 to 5 where 1 = very low extent and 5 = very great extent.

	1	2	3	4	5
Market liberalization					
Policies on imports and export of milk from the country					
Government subsidies on import of processing plants					
Standards regulatory bodies (e.g. Kenya Bureau of Standards, Kenya Dairy Board)					
Others( Please specify)					

14. In your own opinion, to what extent do you think the following factors influence marketing of milk in Limuru? Use a scale of 1 to 5 where 1 = very low extent and 5 = very great extent.

	1	2	3	4	5
Technologies					
Distribution channels					
Road Infrastructure					
Informal markets					
Milk consumption and consumer preferences					
Others( Please specify)					

15. Suggest ways of overcoming the challenges influencing marketing of milk in Kenya.

.....

**Thank you for your cooperation!**



Limuru Milk Processors Limited

P.O.Box 563-00217

Nairobi,

Kenya.

ATTENTION: Mr. Kamau

**RE: REQUEST FOR DATA COLLETION**

My name is Alex Masika, Business Development Manager at a Business Process Outsourcing company called Digital Divide Data Kenya Limited. I am also an MBA student at the University of Nairobi and I am doing an academic research on the marketing challenges affecting small scale farmers in Limuru Constituency.

Since your company is based in the study area, I would kindly request your assistance in data collection where I would like to administer questionnaires to the small scale farmers delivering milk to your company. Please note that the research is not based on your company but on marketing challenges affecting farmers around your area and is for academic purposes only.

I would like my data collectors to accompany your milk collection people when collecting milk so that they can administer the questionnaires. This exercise will only take 3 days and your assistance will be highly appreciated.

I have attached a sample of the questionnaire that I will use.

Sincerey,

Alex Masika

0722301649

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