DAIRY VALUE CHAIN NETWORKS AND PERFORMANCE OF DAIRY SACCOS IN KIAMBU COUNTY, KENYA

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DECLARATION

I, Abuga Everlyne Michoki hereby declare that this MBA Project titled "Dairy Value Chain Networks and Performance of Dairy Saccos in Kiambu County, Kenya" is my original work and has not been submitted to any other Institution, College or University for award of any Certificate, Diploma or Degree.

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SUPERVISOR APPROVAL

This MBA Project prepared by Abuga Everlyne Michoki has been submitted for examination with my approval as the appointed University supervisor.

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DEDICATION

I dedicate this project to my husband Enos Odhiambo, my children Nicole, Nathan and Jeremy for their love, patience and continuous encouragement. Your support, I cannot measure.

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Most profound appreciation to God, for according me endurance to complete this project. I acknowledge and thank my supervisor Dr. James M. Gathungu, I am truly honoured by his valuable guidance and advice during the entire journey. His insight into the subject matter enabled me complete this project. Much appreciation to my family and friends for their support. Particularly I want to thank my mother, Judith Moraa for her words of encouragement throughout this journey.

Wish them God's favour and blessings.

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LIST OF ABBREVIATIONS

CCAFS	Climate Change, Agriculture and Food Security
BVCP	Business Value Chain Practices
EADD	East Africa Dairy Development
FAO	Food Agricultural Organization
GDP	Gross Domestic Product
KDB	Kenya Dairy Board
SC	Supply Chain
VC	Value Chain

ABSTRACT

The objective of the study was to establish the influence of dairy value chain networks on performance of Dairy Saccos in Kiambu County. The project utilized a Census research design centering on all members of the population. The total population was 12 dairy Saccos in Kiambu County. The researcher obtained primary data using structured type of questionnaires. Quantitative technique was used in analyzing the data. For easier understanding, the researcher used averages, percentages, standard deviation and tables to depict descriptive statistics. The researcher also included quantitative data, analyzed based on regression analysis model. Findings from the regression analysis indicated the presence of significant positive linear relationship between value chain network and performance as presented using the correlation coefficient of 0.781. In addition, 61% of the variation in performance was due to value chain network. This also implied that 39% of the performance variation resulted from factors or errors overlooked during the study. This study also found that value chain network was incorporated in the running of the Saccos. The main way through which this incorporation was done was by support of feeding programs and the least way through which value chain incorporation was felt was through equipment financing to farmers; the major way through which this performance was demonstrated was through increased sales and the least way through which performance was felt was through the creation of high value dairy products. The study therefore recommends that various Saccos in the County should integrate dairy value chain network in the operationalizing of the Saccos in a manner that is sustainable and efficient to ensure that performance for the Saccos is enhanced and thus translated to profits. The study also recommends that the various Saccos should identify which value chain activities are the most effective in enhancing performance and invest heavily in them. The Saccos should also seek to understand those elements that are not effective and work towards addressing the challenges they pose in their performance. Finally, the study recommends sharing of information on the concept of value chain among the Saccos. Benchmarking leads to successful integration of the concept into their performance.

CHAPTER ONE

INTRODUCTION

1.1 Background of Study

Profit maximization coupled with efforts aimed at maintaining high-ranking position in the global markets have remained most companies' top priority. Michael Porter associated with the value chain system describes it as a compilation of generic value-added processes operating within an establishment and integrate to provide clients with value (Porter & Heppelmann, 2014). Among these activities are sales and marketing, outbound logistics, human resource management, technology and all other activities that provide value to customers (Radmaker, Koech, Jansen & Lee, 2018). Through value chains, companies are able to respond to weaknesses, opportunities and threats and differentiate from competitors thus achievement of competitive advantage and improved performance (Dobbs, 2016).

The study was anchored on Michael Porter theory of 1985 and supported by two theories; the resource-based view and the dynamic capability theory. Michael Porter's theoretical approach examines value chain and connotes to the various activities undertaken by organizations with the intent of creating value to the company's clients. The resource-based view theory according to Wernerfelt (1984) presupposes that sustained competitive advantage is largely dependent on the resources a firm possesses. Proponents of this theory argue that firms can rely on resources to sustain their companies from exploitative competitors and remain relevant in business and improve performance thus acknowledging that a company's assets have greater importance than the environment in which it operates. In contrast, the dynamic capabilities hypothesis indicates that a firm must adopt new plans

and different approaches towards integrating, building and reconfiguring both the internal and external competences to tackle the highly dynamic environment and achieve high performance in the market.

The Kenyan dairy value chain as studied by the East Africa Dairy Development (EADD) identifies dairy as playing a big part in contributing to the country's Gross Domestic Product (GDP). However, only a small statistic captures the formal production of dairy products thus, the estimation of the dairy industry remains a challenge (EADD, 2016). In Kiambu County, a majority of smallholder dairy producers are mostly organized into dairy co-operatives. The Daily Nation (2017) records some of the operating co-operatives which sell their milk in raw form. Aside from co-operatives, small-scale dairy farmers supply their milk products to middlemen, hotels and hawkers however these avenues offer limited market.

In Kiambu, selling milk to co-operatives is widespread and is the farmers' preference since it offers advantages to the farmers in terms of better prices, reliable markets, prompt monthly payments as well as bearing the burden of spoilt milk once it is in their hands (Kigathi, 2016). Most farmers however, face the challenge of high costs of product delivery, lack of skills to effectively operate a dairy farm, low economies of scale and low ability to attract investors to invest in a quality dairy infrastructure (Radmaker, 2018). This means that the farmers lack the capacity to effectively run dairy farming on their own and find it difficult to put in place an effective value chain system crucial in attaining better performance of any trade that they engage in.

1.1.1 Value Chain Networks

Value chain (VC) networks refer to frameworks used to analyze particular undertakings, which firms employ to create value and hence competitive edge (Porter & Heppelmann, 2014). Creation of a value chain network lies in the identification of the activities that should be done for a customer's experience to be improved. According to Bititci (2016) value chain network consists of different processes such as research in order to find out information customers' requirement to ensure that product's service features provide them with customized solutions that suit their needs.

A value chain network aims at continuously pointing out the value expectations and the resulting clients' perceptions. This is rewarded by a customer's willingness to pay more in terms of price. According to Ceglinski (2016) companies mobilize resources through the identification of areas within a VC network through which contributions by specialist may add value to the whole network. Most companies, therefore, adopt value chain strategies in order to become responsive to their customers' needs and improve customer satisfaction. The capacity of companies to provide customers with value generates revenue in excess and in turn results to shareholder value which gives a firm high performance (Rademaker, Bebe & Van der Lee, 2016). Performance in small and enterprises is affected by various factors which should be considered in order to attain success and avoid corporate failure (Gathungu, Aiko and Machuki, 2014).

1.1.2 Firm Performance

According to Munir (2015) firm performance is defined as the establishment's measure of performance that directly relies not just on the firm's efficiency but also on its market of operation. The performance aspects of several firms are attributed to many factors. The operating performance of a firm determines its continuity. Safarova (2017) through his review of literature notes that the existence of affirmative link between market performance and overall business survival. The financial perspective is also a key factor in determining the sustainability of a firm's performance. Barney and Clark (2017) argue that organizational performance relies on customer satisfaction.

Cho and Pucik (2015) state that superiority in performance can be represented through profitability, growth, and market. Profitability is the capability and the extent to which a firm generates returns and market value (Glick (2017). It is also the external assessment and expectation of a firm's future performance. According to Santos and Britos (2012), the size of a firm also determines its performance since growth in establishment's size brings about increased profitability and cash returns. Further, growth in establishment's size brings about economies of scale and market power thus enhancing firm performance and boosting future profits. In addition, to financial aspects and customer needs, the positive involvement of stakeholders determines a firm's performance.

1.1.3 Dairy Industry in Kenya

Research shows that smallholders dominate Kenya's dairy farming, producing 56% of the 70% produced and marketed milk (Mburu, 2016). In Kenya, dairy farming is one of the

biggest agricultural sub-sector and contributes 14% of the agricultural GDP (Kibogi, 2019). The industry is comprised of an informal milk market control that approximately controls 70% of the marketed milk in Kenya. In the 2018 Kenya dairy policy report, small-scale milk producers and farmers were incorporated in the milk market and informal milk markets were liberalized, this boosted the number of licensed milk vendors as well as increased milk consumption. Until the '90s Kenya Co-operative Creameries enjoyed dairy monopoly by processing all the milk but this slowly decreased from 1993 onwards. This later collapsed and encouraged private sector participation.

The Kenyan dairy industry continues to face many constraints. According to Kibogi (2019), this industry has failed to compete favorably in the global markets due to resource availability and other institutional challenges. Lack of credit access to farmers, high cost of animal feeds and expensive dairy equipment negatively affects the industry in Kenya. Despite the challenges, smallholders have continued to dominate dairy farming at the production level. FAO (2009) also record that payment fluctuations influence dairy farmers to sell their milk through informal markets thus affecting milk production in Kenya. Other key stakeholders in the dairy industry are the dairy co-operatives and farmers' groups which contribute 40% of the marketed milk (Mburu, 2016).

Though Kenya has about 35 active milk processors and 1.5 million litres of milk processed daily, the growth of processed raw milk still finds their way to consumers through the raw milk market. This results in distortion for the formal market leading to unleveled playing field thus an impediment to the growth of formal milk markets (Rademakeret., al 2016).

In future, the success of the dairy industry in Kenya will be highly dependent on intervention based strategies. According to the Kenya Dairy Board (2018), continuous quality assurance and compliance on milk handling across the dairy value chain network would be crucial.

1.1.4 Dairy Saccos in Kiambu County

According to the Kiambu County annual report of dairy co-operatives (2019), Kiambu County has 12 active registered co-operatives with a production of 350 million liters annually with the highest milk producing dairy co-operative being Githunguri. However, according to Muchiri (2007), most dairy farmers do not realize optimal production due to their failure to understand the connection between productivity and dairy farming practices. Mburu (2016) noted that co-operative societies in Kiambu receive milk in raw form and convert it to products such as yoghurt, ghee, and butter through processing and packaging.

The Githunguri Dairy Sacco is the largest dairy Sacco in Kiambu. According to Wangamwa, (2018) Githunguri Dairy Sacco offers training to members of the community on animal husbandry, dairy extension services and offers improved financial services to members and this has enhanced the continuous supply of dairy products and increased access of the milk products. By offering ready markets to the dairy products of the local farmers, dairy Saccos in Kiambu have also encouraged milk farmers to take all their milk to the milk co-operatives. Despite the benefits that farmers acquire through dairy co-operatives, most of them face a myriad of challenges. Leksmono and Muriuki (2016) cites that high proportion of raw milk channeled through the informal markets, fluctuation in

milk supply, cost of transport and distribution due to poor infrastructure, high consumption of unprocessed milk and political interference have been the ruin of most dairy Saccos thus challenging their efficiency.

1.2 Research Problem

Many companies have a value chain network that enhances their attainment of maximum value for both their clients and for the profit functionality of their businesses. Dairy firms are not an exception this is because a value chain network permits the analysis of the effectiveness of the firm and thus grants high performance. Value chain management is known to optimize firm's processes in the way in which they flow while creating better value for customers (Porter et al., 2014). Banerjee and Kunamaneni (2019) noted that value chain increases engagements with other players in the dairy value chain through financial or technological interventions thus recording better organizational performance. Further, Nyokabi et al. (2018) stated that VC increased earnings by the formal dairy VC players as opposed to informal dairy VCs.

At the heart of many dairy Saccos in Kiambu however, most small-scale dairy farmers lack cognizance of the fact that a value chain management earns benefits in comparison to milk vending and hawking of dairy products. This has resulted to the non-achievement of improved performance of the saccos and denied dairy farmers a competitive advantage over private milk companies and other government co-operation. The challenge in the creation of value chain networks in Kiambu lies in the advantage that informal milk markets have over formal milk markets such that farmers prefer cash-based markets rather

than waiting for their money monthly as is programmed by formal co-operatives (Rademaker et al., 2016). Most farmers who have been ignorant of a value chain network have failed to either realize new market opportunities or minimize the risks posing threats to the businesses, thus the milk production industry faces major setbacks. Evolution of the dairy market as per the needs of the people has also been difficult to monitor as most milk vendors prefer to sell their milk through hawkers and this does not guarantee them the advantages of a value chain network (Leksmono & Muriuki, 2016).

Swafford and Ghosh (2013) researched on a network for assessing VC agility and performance in United States of America. The outcomes showed that there were elements of VC present thus increasing performance. Nguyen et al. (2018) carried out an investigation to critically analyze the dairy VC in the Bavi area, Vietnam and its influence on performance. The findings of the investigation indicated that the dairy VC players increase the profitability of the dairy plants in the VC. Banerjee and Kunamaneni (2019) conducted a study investigating the role of firm-to-fridge VC in attaining competitive edge and better performance. The investigation found that value chain increased their engagements with other players in the dairy value chain through financial or technological interventions recording better organizational performance.

Locally, Ann et al. (2015) undertook an investigation to ascertain the VC and performance of Kenyan informal diary establishment with a specific focus on diversification of products. The findings of the investigation revealed that small-scale milk vendors venture into dairy products with higher value gain greater benefits in comparison to fresh milk. Chege (2017)

studied the influence of in-house business value chain practices (BVCP) on the supply chain performance of some of Kenya's large manufacturing enterprises. According to the findings, it was noted that the supply chain had a significance and positive output on the performance of BVCP companies. Nyokabi et al. (2018) undertook an investigation to explore the roles and relationships of players in the dairy VC and the bearing they had on the quality of the milk, its products and performance in Nakuru County, Kenya. The study revealed that the players in the value chain are farmers, cooperatives, and processors or plants. Moreover, increased earnings by all players were reported in the formal dairy value chain as opposed to informal dairy VCs. The study sought to find the present gap by responding to the following question: what is the impact of dairy value chain networkS on performance of Dairy Saccos within Kiambu County?

1.3 Research Objective

The objective of the study was to establish the influence of dairy value chain networks on performance of Dairy Saccos in Kiambu County, Kenya.

1.4 Value of the Study

By understanding merits of adopting the value chain network, managers would able to adopt successful transition as well as integration plan for value chain success. To the management of the dairy industry the study would enhance the formation of informed policies with regards to value chain networks as this would reduce reliance of farmers on informal milk markets.

The government policy makers would gain from this study in formulation of well-versed policy pronouncements with an objective of developing and growing the dairy industry while safeguarding financial strength. The study would also inform the formation of tailor made value chain systems that can be embraced by the local people with the least cause of inconvenience while assuring them of returns within expected periods of time.

Scholars and academicians seeking to conduct further studies on value chain networks and performance would be able to acquire an understanding into the research subject and explore any research gaps not considered by this research. The findings of this research would be significance in generation of other theories and models that others carrying out future researches would utilize to give them a basis of preceding knowledge to conduct their researches from.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter presented the theoretical approaches pertinent to the study by investigating through various theories and researches related to the topic; empirical studies carried out in the field were also reviewed.

2.2 Theoretical Foundation

Over the years, different scholars have formulated theories to try to explain what effect value chain has on performance of various companies globally. Therefore, this investigation based its findings in line with the Michael Porter's Value Chain Theory with the support of the resource-based view theory and dynamic capability theory.

2.2.1 Michael Porter's Value Chain Theory

This theory was developed by Michael Porter in 1985, the approach looked into the Value Chain Analysis model. It defines value chain as a combination of a firm's activities carried out with the aimed of creating customer value. Reason being, creation of customer value accords the firm competitive advantage over their competitors in the market coupled with increasing corporate's high performance. Consequently, value addition increases the organization's profitability. This means that firms who have adopted proper value chain models enjoy high success and performance in their operations (Elloumi, 2004).

One of the key assumption of the theory is that companies have different activities and must focus on organizational plans and company systems and customers as the central principle (De Mozota, 1998). The firm's systems link the organization's activities with other systems while demonstrates the financial implications (Walsh, 2011). This means that the firm must plan its primary and support activities to enjoy success and attract customers. Some of the main activities pose an immediate impact in all stages of the products and services; production, maintenance, and sales (Finne, 1997). These corporate activities include inbound and outbound logistics, production and marketing.

In this study, Porter's theory would help to create value among key activities of dairy Sacco's in Kiambu. The firms would use the theory to guide the various processes including reception, storage, and in-house distribution of raw materials to their customers and from their suppliers. The model would also help the firm to improve their production as well as delivery of products to their customers. This is because key activities in the firm include milk distribution as well as marketing and sales which are also part of the value chain (De Mozota, 1998). The firms can also use the theory to support their activities in terms of maintaining good firm infrastructure as well as managing their human resource operations and improving technology development and their procurement plans as part of their support activities to improve performance. As a result, the firm will understand its key activities, manage risks as well as improve their quality assurance levels. This is important towards creating new opportunities towards the firm future activities and operations (Elloumi, 2004).

2.2.2 Resource-Based View Theory

Wernerfelt (1984) presupposes that performance variance is largely dependent on the resources a firm possesses. Proponents of this theory argue that firms can rely on resources to sustain their companies from exploitative competitors and achieve higher performance in business thus acknowledging that a firm's resources are more important than the environment in which it operates (Barney, 1991). Resource based view theory deals with the resources that companies have that enable them achieve superior performance and competitive advantage over the other companies. A company should offer either quality or cheap resources for it to be considered to have competitive advantage over the other companies (Nyakora, 2017). The company's resources can be either tangible or intangible, the tangible resources entail money, land, factory and equipment while the intangible resources are those that are hard to quantify or cannot be touched example, competitive advantage, skills of employees' and firm's brand.

The theory has faced a number of criticisms from Kraaije (2010) who argued that the resource-based view theory does not have any managerial implication meaning that the management is not responsible for any increase in competitive advantage rather the resources are responsible (Priem & Butler 2001) criticizes the theory by noting that it does not consider the role played by product markets in enhancing a firm's performance. Different combination of assets or resources can result in similar value for organizations and this would not be competitive advantage.

2.2.3 Dynamic Capability Theory

The dynamic capability theory by Teece, Pisano and Shuen (1997), sought to determine how firms can cope with a dynamic and constantly changing environment. According to López (2005), the theory states the conditions essential in the production, development, and renewal of resources within the company, while simultaneously providing room for the organization to innovate create new products, survive within the changing external conditions with a competitive advantage. Teece et al., also define the dynamic capability as the firm's ability to absorb, create, and modify both internal and external expertise essential in tackling the ever dynamic environments and achieve a high competitive advantage.

Dynamic capabilities and operational expertise pose some diversity pertaining to a firm's operations. Dynamic capabilities determine the company's effectiveness in utilizing its resource base (Gathungu & Mwangi, 2012). The theory thrives on the assumption that the core competencies play a role in modifying short-term competitive positions hence according the company a competitive advantage over a long period (Takahashi, Bulgacov, Semprebon & Giacomini, 2017). Teece et al.,'s concept also adds that corporate agility stands out as crucial for any firm since it refers to the company's ability to identify, size and shape opportunities and threats critical to maintaining competitiveness. Achieving operate agility depends on the process of enhancing, combining, protecting, and, reconfiguring various business assets.

Within this study, dairy firms can use the theory to promote the development of strategies that allow the firms adapt to radically irregular change, while maintaining the required minimum capacity essential in achieving a competitive survival within the market (Tashman & Marano, 2010). The management of the dairy companies needs to tailor their routines towards utilizing available resources and lay out plans for future process in cases of resource depreciation. Dairy firms should adopt new technologies as well as information and network economics and other new learning models to improve their performance.

2.3 Dairy Value Chain Networks and Performance

A value chain network aims at continuously pointing out the value expectations and the resulting clients' perceptions. This is rewarded by a customer's willingness to pay more in terms of price. According to Ceglinski (2016) companies mobilize resources through the identification of areas within a VC network through which contributions by specialist may add value to the whole network. Most companies, therefore, adopt value chain strategies in order to become responsive to their customers' needs and improve customer satisfaction.

Activities in the dairy value chain network include service provision, milk production, bulking and chilling, transporting and trading, processing, retail and consumers (Tecnoserve, 2008). Milk processing firms create value chain networks and linkages with small dairy farmers to supply inputs and services through dairy saccos in exchange of a steady supply of milk (CCAFS, 2015). Financial services links involve dairy processing firms guaranteeing small holders credit from financial institution.

The performance aspects of several firms is attributed to factors such as reliability, speed, delivery speed and costs. Measurement of these factors ensures performance is achieved and stockholder interest met (Gathungu, Aiko & Machuki, (2014). The operating performance of a firm determines its continuity. Safarova (2017) through his review of literature notes that the existence of affirmative link between market performance and overall business survival. In order to achieve superior performance, an establishment needs to reach its expected objective with greater effectiveness and efficiency than its competitors (Wu, 2009).

2.4 Empirical Review and Knowledge Gaps

This study's empirical review is subject to the investigation's objectives. The relationship between value chain network and performance was reviewed. Swafford and Ghosh (2013) researched on a network for assessing value chain agility in United States of America. The study intended to provide an understanding of value chain in terms of value addition within a given firm, which translates to performance. The research incorporated both primary and secondary data collection methods whereby 100% of the managers were interviewed. According to the findings, the company did not have a formal value chain in place however there were elements of value chain present. The study recommends that formal value chain analysis should be adopted for the purpose of increasing performance and further studies be done to define the impacts of value chain analysis on the firm's performance.

Chege (2017) studied the influence of in-house BVCP on SC performance within Kenya's large manufacturing enterprises. The investigation aimed at understanding supplier relationship management approaches on the SC performance of Kenyan large industrialized enterprises. According to the findings, it was noted that the value chain had a significance and positive output on the performance of BVCP companies. Musau (2018) researched on SC determinants of establishments' performance among Kenyan textile manufacturing enterprises. The investigation aimed at analyzing SC as performance determinant of an establishment as regards responsiveness and reliability of profit among textile manufacturers in Kenya. Convergent parallel design and primary data collection methods were employed in gathering data and SPSS was employed in analyzing quantitative data. According to the findings, SC, information systems and transport directly affect the performance of a firm.

Sar (2017) investigated competitive edge and performance downstream oil and gas industries in India. This research aimed at understanding the effect of competitive edge on profitability. It was conducted among three oil companies in India between 2006-2017. The data was obtained from CMIE – PROWESS (Database of the Centre for Monitoring Indian Economy). According to the results, the oil companies have adopted various strategies in order to improve competitive advantage and implementation of those strategies has resulted to the increase of profit. In conclusion, adoption of strategies that will increase competition among companies is relevant in improving firm profits.

Agyapong (2015) conducted a research on competitive strategy and establishments' performance of Ghana's micro and small businesses. The study was aimed at examining the roles of managerial department in moderating the competitive advantage to performance of their firms. Data analysis was through hierarchical multiple regression to determine the performance of the firms. According to the findings, managerial and marketers have the capabilities of formulating competitive advantage and performance of the firms by adopting specific strategies. Recommendation of the study stipulated that Ghana MBS should come up with competitive strategies to improve their competitive advantage, hence their performance.

Loyce (2014) undertook an investigation on the link between competitive practices and establishments' performance in the Kenyan mobile telecommunication establishments. The purpose of the investigation stems from determining the link between the competitive edge and firm performance of the telecommunication firms within Kenya. Data was collected through descriptive data analysis and a total of 63 respondents were interviewed. According to the findings, it was noted that there are many strategies adopted by telecommunication industries for improving their competitive edge such as cost effectiveness and specific focused market strategy. In addition, the study established a positive link between competitive practices and performance. This finding is similar to that of Teeratansirikool, Siengthai, Badir and Charoenngam (2013) who found that competitive strategies directly and significantly affect performance. The study also recommended that the telecommunication industries should adopt the strategy of cost

effectiveness for the purpose of improving their performance through competitive advantage.

Banerjee and Kunamaneni (2019) conducted a study investigating the role of firm-to-fridge value chain in achieving competitive advantage and performance. The study, which was conducted in India focused on participants in the Indian dairy industry specifically in Bangalore and West Bengal (India). The purpose of the investigation was to examine the existing dairy VC and its impact on performance. The research utilized an exploratory research design using personal observations and detailed interviews to obtain data. The study revealed that players in the value chain such as farm-level farmers, marginal level farmers, processing plants, etc., are largely fragmented. This fragmentation means that communication and sometimes quality of the milk is hampered. Additionally, the study found that the value chain increased their engagements with other players in the dairy value chain through financial or technological interventions recorded better organizational performance. This is similar to the findings of Beyene (2015) who noted that value chain actors were involved through the value chain by improving logistics, multiplying processing capacity and furnishing service inputs.

Nguyen et al. (2018) carried a study to critically analyze the dairy VC in the Bavi area, Vietnam and its influence on performance. The study aimed at examining the challenges in the practical management in the dairy VC and to identifying its effect on performance among the players in the value chain. The exploration was conducted in Bavi area where the researchers managed to collect data through questionnaires from 160 respondents. Data

analysis was by Statistical Package for Social Services V.20. It was established that the greatest inequality in the value chain was income. Given that the farmers make the largest contribution to this chain, they should be in a position to get income that is equal to the level of the dairy plants in proportional terms. The study further indicated that if farmers were remunerated accordingly, the quality and quantity of milk would increase thereby increasing performance for dairy plants in terms of profitability. In essence, they revealed that proper remuneration among the players in the dairy VC increases the profitability of the dairy plants in the value chain.

Ann et al. (2015) undertook an investigation to identify the VC and performance of informal diary entities within Kenya with a specific focus on diversified products. The study, whose target population was mainly informal dairy farmers situated within Kiambu County, Kenya managed to generate a sample size of 384 respondents. Descriptive statistics was employed in analyzing data mainly through questionnaires. The findings of the investigation reveal that small-scale milk vendors diversifying dairy products of high value gain greater benefits than fresh milk.

Nyokabi et al. (2018) carried out a study to investigate roles and relationships between players within the dairy value chain and the impact they had on quality of the milk, its products and performance. The study acknowledged that the quality of the milk and dairy products contributes significantly to the performance of the dairy plants or the small-scale or mid-level farmers who deal directly with the customers. The study which focused on Nakuru County, Kenya employed social network analysis and utilized process Netmap.

The study revealed that the players in the value chain are farmers, cooperatives, and processors or plants. Further, the study revealed that all these players important for the quality of milk and dairy products.

2.5 Chapter Summary

The benefits of value chain network, competitive advantage and performance has been discussed by various scholars in different sectors of economy. Chege (2017) studied the bearing of internal BVCP on the VC performance of Kenyan large manufacturing enterprises. He established that value chain had a significance and positive output on the performance of BVCP companies. Musau (2018) researched on SC determinants of establishments' performance among Kenyan textile manufacturing establishments. According to the findings, supply chain, information systems and transport directly affect the performance of a firm.

Majeed (2013) studied the impact of competitive edge on establishments' performance in Pakistan. The findings indicate that for a firm to increase its performance through profit maximization, it should ensure that it has formulated strategies of increasing its competitive advantage by all means, either considering quality, price or service provision. Agyapong (2015) conducted a research on the link between competitive approach and enterprises' performance of Ghana's micro and small businesses. According to the findings, management and marketers have the capabilities of formulating competitive advantage and performance of the firms by adopting specific strategies. Loyce (2014) examined the link between competitive plans and business performance: case study of Kenyan

telecommunication establishments. The investigation recommended that, the telecommunication industries should adopt the strategy of cost effectiveness for the purpose of improving their performance through competitive advantage. The field of value chain and company performance has been extensively researched. However, majority of these studies have focused in mature or developed markets and other industries, apart from the dairy sector. There is insufficient study into this particular field. In addition, most of the studies have looked at value chain and competitive advantage in establishing their independent effect on performance. A joint effect of the variables on the dairy sector is lacking and therefore this research is meant to fill this gap.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter presents the technique employed in collecting available data essential in attaining the set objectives. It further expounds the research design, target population, data collection method and analysis technique.

3.2 Research Design

Bhat (2019) defines research design as combination of a network of methods and techniques that are used to effectively address the research problem. A census research design was utilized in this investigation in order to establish the effect of VC network on performance of dairy Saccos in Kiambu County. Census research design focuses its study on every unit, or all members in a population (Sekaran & Bougie, 2009). This method is considered appropriate owing to the small number of units that make up the population. This enhanced validity, consistency and generalizability of the study findings. It is also a convenient way of data collection when administering the questionnaires via digital means.

3.3 Population of the Study

The population targeted for this research was dairy saccos in Kiambu County. According to the Kenya Dairy Board there are a total of 12 dairy saccos in Kiambu County. The study adopted census method and all the Dairy Saccos in Kiambu County were targeted.

3.4 Data Collection

The investigation utilized primary data obtained through structured questionnaires. Data was collected through survey and interview method from the entire 12 Saccos in Kiambu County. The questionnaires included three sections: Demographic information; Value Chain Network among Dairy Saccos in Kiambu County, and the Performance of Dairy Saccos in Kiambu County.

3.5 Data Analysis

Both quantitative techniques were used in analyzing the data. The researcher sought to determine the relationship between dairy value chain network and performance of Dairy Saccos of Kiambu County. The research objective guided the researcher in data analysis. The research also presented descriptive statistics in averages, tables, standard deviation, and percentages for easier understanding. The researcher also included quantitative data and this was analyzed based on a regression analysis model.

The regression model is as follows:

$Y = \beta 0 + \beta 1X1$ Whereby:

Y - Performance (dependent variable)

$\beta 0$ - Regression intercept

$\beta 1$ - Regression coefficients

X1 - Value chain Networks

CHAPTER FOUR

DATA ANALYSIS, RESULTS AND DISCUSSION

4.1 Introduction

This chapter presents the analysis of the findings of the study as put forth in the research methodology. The chapter examined the characteristics of the sample population such as response rate and demographics before exploring the descriptive statistics as in addition to the correlation analysis of the collected data to establish the influence of dairy value chain network on the performance of Dairy Saccos in Kiambu County. It is worth noting that the data used in this study was obtained by way of structured questionnaires through survey and interview method from the entire 12 Saccos in Kiambu County.

4.1.1 Response Rate

The researcher administered 12 questionnaires to population of interest in the study. 11 out of the 12 questionnaires were dully filled and returned. According to Mugenda and Mugenda (2008), a research with 50% response rate exhibits sufficiency, 60% is considered good and 70% is very good for data analysis and inference. The results of the study were as shown:

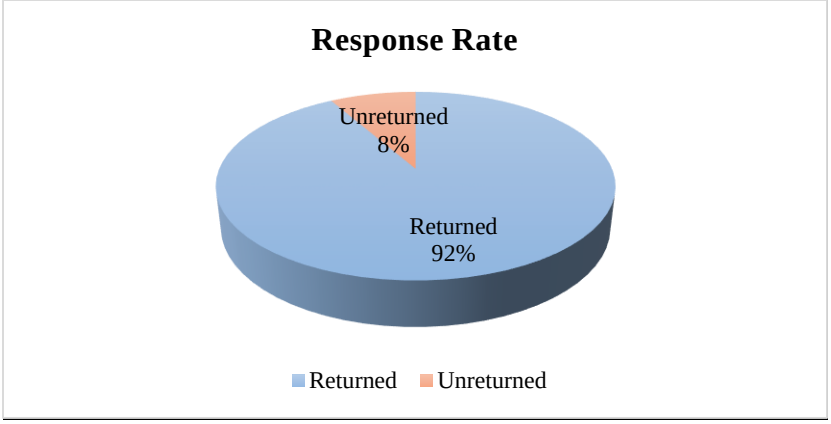

Figure 1: Response Rate

Source: (Field Data, 2020)

Figure 4.1 shows a 91.67% response rate, thus the data collected for the study was good for analysis, interpretation and inference.

4.2 Organization Characteristics

The research sought to understand the general characteristics of those being surveyed. To do this, the study collected background information of the respondents which included, age of the Saccos, business ownership structure, and number of employees in Saccos.

4.2.1 Age of the Saccos

The research also aimed to establish the period of the Saccos' operation. Results from the study are as presented in the Table 4.1.

Table 4.1: Age of Saccos

Age of the Sacco	No. of Firms	Frequency Percentage (%)
Over 15 years	5	45%
11 to 15 years	2	18%
6 to 10 years	1	9%
1 - 5 years	2	18%
Less than 1 year	1	9%

Source: (Field Data, 2020)

TABLE 4.1 postulated that older Saccos have well established value chain networks. Most of the Saccos had existed for more than 6 years; out of the 11 Saccos, 5 had existed for over 15 years, 2 had existed for between 11 and 15 years, 1 had existed for between 6 and 10 years and two had existed for between 1 and 5 years or less. Only one Sacco had existed for less than one year.

4.2.2 Business Ownership Structure

The research also aimed to establish the ownership structure of the Saccos'. Results from the study are as presented in the Table 4.2.

Table 4.2: Business Ownership Structure

Business Ownership Structure	No. of Firms	Frequency (%)
Sole proprietorship	0	0%
Partnership	2	18%
Corporation	3	27%
Limited Liability Company	6	55%

Source: (Field Data, 2020)

TABLE 4.2 indicated that most of the Diary Saccos were Limited Liability Companies at 55%, this was followed by dairy saccos registered as corporations at 27%. The remaining dairy Saccos were registered as partnership businesses.

4.2.3 Number of Employees

This exploration also focused on inquiring how many employees worked in the Saccos as indicated in Table 4.3.

Table 4.3: Number of Employees

Number of Employee	Number of Saccos	Frequency (%)
1-100	7	64%
101-200	3	27%
201-300	1	9%
Above 301	0	0%

Source: (Field Data, 2020)

TABLE 4.3 ascertained that 7 dairy Saccos had a number of employees between 1-100, 3 Saccos had employees that ranged between 101-200, 1 Sacco had employees ranging from 201-300 and no Sacco employed more than 301 people.

4.3 Demographic Characteristics

The respondents' demographic data was obtained from the preliminary section of the questionnaire to ascertain the suitability of such respondents for the current study. The

main demographic characteristics that were considered for this study included age, gender, level of education and working experience of the respondents.

4.3.1 Age of the Respondents

The study sought to understand the age of the respondents and the findings are as presented in TABLE 4.4.

Table 4.4: Age Distribution

Age Distribution	No. of Respondents	Frequency (%)
41and Above	5	45%
36 - 40 years	3	27%
31 - 35 years	3	27%
26 - 30 years	1	9%
18 - 25 years	0	0%

Source: (Field Data, 2020)

TABLE 4.4 indicated that majority of those that were surveyed 45% were aged 41 and above. 27% of the respondents were aged between 36 - 40 years, 27% of the respondents were aged between 31 - 35 years, 9% of those surveyed were aged 26 - 30 years and while only 0% of the respondents were aged between 18-23 years. These findings show that the vast majority of people in the dairy Saccos were above their youthful age as represented by 91% of the respondents that were above 30 years of age.

4.3.2 Gender of Respondents

It was realized that the largest number of employees in management positions in the Dairy Saccos were women at a percentage of 53% while men trailed at 47% as reflected by the number of respondents.

Table 4.5: Gender of the Respondents

Gender	No of respondents	Frequency (%)
Male	7	64%
Female	4	36%

Source: (Field Data, 2020)

TABLE 4.5 presents the percentage of the respondents in terms of gender.

4.3.3 Level of Education

The investigation asked the research participants to state their highest education level attainment. The outcomes from the responses are displayed in table 4.6.

Table 4.6: Education Level

Education Level	No. of Respondents	Frequency (%)
Certificate	0	0%
Diploma	1	9%
Bachelor's Degree	6	55%
Master's Degree	4	36%

Source: (Field Data, 2020)

TABLE 4.6 presents the level of education of the respondents. 55% accounting for the majority number of research participants had a bachelor's degree level of education. 36% had a master's degree as their highest level of education respectively. 9% of the research participants had a diploma.

4.3.4 Working Experience

The exploration aimed at determining the time the respondents worked in the respective dairy Saccos as detailed in TABLE 4.7.

Table 4.7: Working Experience

Working Experience	No. of Respondents	Frequency (%)
Less than 1 a year	0	0%
1 - 5 years	3	27%
6 - 10 years	5	45%
11 - 15 years	2	18%
Over 15 years	1	9%

Source: (Field Data, 2020)

TABLE 4.7 presents the working experience of the respondents. From the findings of the exploration, 45% of the respondents had a working experience of 6-10 years in the Saccos, 27% had worked for a period of between 1 to 5 years, 18% between 11- 15 years, 9% for a period of over 15 years. The results demonstrate that most respondents had worked for more than 6 years. Thus it implied that they were well equipped with knowledge on the functionality of the Saccos and thus made an excellent source of information for the study.

4.4 Value Chain Networks

The study aimed at demonstrating the adoption of value chain networks among the diary Saccos. Some of the strategies which exists in the dairy Saccos that were tested included distribution and retailing of milk, market development, equipment financing to farmers, training of management of dairy groups, provision of consumer information and processing and packaging of milk products among others. To gather the data on value chain networks the respondents rated various statements on value chain networks with the use of a Likert scale. The Likert scale that was divided into five points where; 1= Very great extent, 2 great extent, 3= moderate extent, 4= small extent, 5= very small extent. The findings of the studies are as detailed in Table 4.8.

Table 4.8: Value Chain Networks

Dairy Value Chain Networks	N	Mean	Standard Deviation	Coefficient of Variation
Distribution and Retailing of milk	11	1.87	0.199	0.106
Market development	11	3.33	0.422	0.127
Equipment financing to farmers	11	3.42	0.291	0.085
Training of management of dairy groups	11	1.75	0.355	0.202
Provision of consumer information	11	1.58	0.31	0.196
Processing and packaging of milk products	11	2.5	0.16	0.064
Training of farmers	11	2.1	0.285	0.136
Bulking and Cooling of Milk	11	1.69	0.41	0.242
Support of feeding programs	11	1.93	0.185	0.959
Average		2.2411	0.291	

Source: (Field Data, 2020)

TABLE 4.8 reveled that most of the Saccos had adopted the use of value chain network in their operations to a great extent. This was exhibited by the overall 2.2411 mean and 0.291 standard deviation. Respondents acknowledged that support of feeding programs was the greatest way through which value chain network was incorporated in the Saccos. The respondents also acknowledged to a moderate extent that equipment financing to farmers was one of the ways through value chain network had been adopted by the Saccos.

4.5 Performance of Dairy Saccos

To access performance, the study employed a Likert scale where respondents were asked to rate their respondents towards certain aspects associated with performance. The Likert scale was divided in a five-point average where 1= Not at all, 2 = remotely, 3= Moderately, 4= Considerately, 5= Greatly. The responses were indicated in Table 4.9.

Table 4.9: Performance of Dairy Saccos

Performance Indicators	N	Mean	Standard Deviation	Coefficient of Variation
Significantly reduced costs	11	3.78	0.754	0.199
Increase in sales	11	4.01	0.873	0.218
Increase in Sacco profits	11	3.73	0.21	0.056
Reduction in wastes	11	3.62	0.233	0.064
Shorter order processing time	11	3.82	0.62	0.162
Improved quality and quantity of milk	11	3.91	0.12	0.031
High-value dairy products	11	3.57	0.078	0.0218
Reduced customer complaints	11	3.74	0.032	0.008
Increased employee satisfaction	11	3.86	0.349	0.094
Average		3.782	0.363	

Source: (Field Data, 2020)

TABLE 4.9 indicates how value chain influenced performance. It was established that value chain network enhanced performance to a considerable range as indicated by the 3.782 mean and standard deviation of 0.363. Respondents acknowledge that one of the most prominent ways through which performance was enhanced was through increased sales as indicated by a mean of 4.01 followed by improved quality and quantity of milk as indicated by a mean of 3.91. The least way through which performance was improved was through high value dairy products as indicated by the mean of 3.57.

4.6 Regression Analysis

The study utilized regression analysis to assess whether a linear relationship existed between value chain network and performance of the dairy Saccos. The results of the analysis are presented in the model summary, ANOVA and coefficients tables. The model summary was used to explain the variation exhibited by dependent variable explained by the fitted model. The Anova table was used to check if the model fitted was statistically significant for prediction while the coefficient table determines the magnitude of the link between the variables.

4.6.1 Model Summary

Table 4.10: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.781 [a]	.610	.589	0.338

Source: (Field Data, 2020)

TABLE 4.10 illustrates the extent to which a change in the dependent variable is explainable by the change in the independent variables. From the model summary it was deduced that R Square was 0.610. This infers that 61% of the variation in the performance of the Saccos can be attributed to the value chain network. While 39% of performance is caused by other factors not captured by the model.

4.6.2 Analysis of Variance

In the model, the Coefficient of determination (R^2) illustrates the extent to which a change in the dependent variable explains a change in the independent variables.

Table 4. 11: Anova

Model	Sum of Squares	df	Mean Square	F	Sig.	
1	Regression	7.892	1	7.892	3.308	.002b
	Residual	76.353	32	2.386		
	Total	84.245	33			

Source: (Field Data, 2020)

TABLE 4.11 presents information regarding the levels of variability within a regression model and thus form a basis for tests of significance. Findings from the Anova table showed that the level of significance was 0.002. This value was less than the p value of 0.05. The model therefore stands out as statistically significant for calculating performance based on value chain network.

4.6.3 Coefficients

Table 4.12: Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	2.17	0.034		2.714	0.002
	Value chain networks	0.578	0.449	0.11	0.565	0.002

Source: Field Data

Table 4:6 presents the model fit for the data is as follows;

Y= 2.17+0.578X1

Where

Y - Performance (dependent variable)

X1 - Value Chain Network (Predictor variable)

From the table it was deduced that for one-unit increase of value chain network changes performance by 3.47. Further, value chain network has a positive relationship with performance. No change on value chain would mean performance would still have a value of 2.17 as indicated by the constant value. Value chain network was also found to be a positive and significant predictor of performance as indicated by the 0.578 beta value.

4.7 Discussion of Results

This Section presents discussion of the results from the study and links those results to both theoretical and empirical literature.

4.7.1 Value Chain Networks

From the findings of the descriptive statistics, it was established that value chain networks influenced operations of the Saccos extensively as depicted by the average mean 2.2411. One of the greatest ways through which the influence was felt was through support of feeding programs as indicated by the mean of 1.93. The least way through which the impact of value chain was felt was through equipment financing to farmers as shown by the 3.42 mean. Value chain network was also practiced through training of management of dairy groups and training of farmers this is almost similar to the findings of Sumuni (2015) who found that value chain actors often engaged in trainings on milk marketing. The study's objective was to establish the value chain strategies adopted by chain actors in milk marketing.

The other factors comprised of distribution and retailing of milk; and bulking and cooling of milk. This is also supported by Ann, Mike & John (2015) who established that milk traders engage in bulking and transport of fresh milk. These activities involved proper handling of equipment and proper hygiene. The milk traders in this case were collectors and retailers.

4.7.2 Performance of Dairy Saccos

Discoveries from the descriptive statistics also demonstrate that Saccos performance was influenced by value chain network to a considerable extent as highlighted by the average mean of 3.782. Among the significant ways through which this performance was felt was through increased sales as shown by a mean of 4.01. Another key way the performance

was felt was through improved quality and quantity of milk as indicated by a mean of 3.91. This finding is similar to that of Ann, Mike & John (2015) who found that dairy firms that trained their entrepreneurs to produce products with better quality had better performance in terms of increase in sales and profitability. Other researchers such as Chege (2017) and Banerjee and Kunamaneni (2019) also established that performance was enhanced through value chain activities such as distribution and retailing of products, market development and processing and packaging of milk.

From the regression analysis it was discovered that 61% of the variation in the performance of the Saccos could be attributed to the model fitted with value chain network. The Anova table also showed that the model for predicting performance based on the model was statistically significant. The beta coefficient for value chain was established to be 0.578. This implies that for every additional unit in value chain network performance went up by a value of 0.578. These findings are echoed by the following studies: Banerjee and Kunamaneni (2019) who conducted a study on the role of firm-to-fridge value chain in achieving competitive advantage and performance. Nguyen et al. (2018) who critically analyzed the dairy VC in the Bavi area, Vietnam and its influence on performance. These studies found a positive statistical relationship between value chain and performance.

The research also agrees with those of Mulugeta (2016) who investigated the effect of value chain on performance of Ethiopia's malt barley. Findings from his study showed that value chain brought about increase performance in farmers Saccos. Explicitly, constructive relations between coordination of activities, performance, and joint decision-making at

such corporations' interface were noted due to the integration of value chain in their operations.

The findings also are in line with those of Agarwal (2012) who carried out a study to assess the impact of value chain in financial performance of edible oil manufacturing companies in Kenya. In his study he established that value chain was a crucial indicator of financial performance. Thus, he suggested that it is important to be able to know the right value chain mix that will lead to profitability of the companies.

CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

This chapter presents summary of findings based on the study's objective; investigating the influence of dairy value chain network on performance of Dairy Saccos in Kiambu County. This chapter also presents the conclusion, recommendations, study limitations, and suggestions for further research.

5.2 Summary of the Study

The research objective was to establish the influence of dairy value chain networks on performance of Dairy Saccos in Kiambu County. Findings from working experience showed that those that had worked in the Saccos for a period between 6-10 years accounted for the largest number of respondents as they constituted 45% of the respondents. The group was followed by those with a working experience of over 1 to 5 years who accounted for 27% of the respondents, 18% of the respondents worked with the Saccos between 11 and 15 years, 9 % of those surveyed were employees in the dairy Saccos for a time over 15 years.

Results from length of operation of the Saccos determined that 45% the largest number of Saccos had been functioning for a period between over 15 years, this number was followed by those Saccos that had been operational for 1-5 years and 11 to 15 years accounting for 18% of the Saccos, 9% had been in operation for a period of less than a year and less than 1 year. Investigation into the number of employees in the Saccos revealed that most Saccos

accounting for the 64% of those surveyed had hired between 1-100 workers. 27% of the Saccos hired workers between 101-200 workers. Saccos that had a number of employees between 201-300 and above 301 were 9% and 0 Saccos respectively. Findings from the descriptive statistics revealed that value chain network was incorporated in the running of the Saccos to extensively as shown by the 2.2411 mean and 0.291 standard deviation. The main way through which this incorporation was done was through support of feeding programs and the least way through which value chain incorporation was felt was through equipment financing to farmers.

Descriptive statistics on how performance was influenced by value chain network showed that performance was influenced considerably as indicated by the average mean of 3.782 and standard deviation of 0.363. This performance was demonstrated through increased sales and the least way through which performance was felt was through the creation of high value dairy products. Findings from the regression analysis showed that 61% of the variation in performance was due to the model been fitted with value chain as a predictor. This also implied that 39% of the variation in performance due to various factors or errors. Further, the regression analysis discovered that value chain stood out as a major determiner of performance.

5.3 Conclusion of the Study

The purpose of this inquiry was to determine the influence of dairy value chain networks on the performance of Dairy Sacco's in Kiambu County. Through findings from regression analysis it was concluded that dairy value chain network did have a positive and significant

impact on the performance of the dairy Saccos in Kiambu. The extent of this effect of dairy value chain networks on performance was also revealed through the fact that it elucidated 61% of the variation of performance of the Saccos. The findings of this research point out that dairy firms should have an effective value chain network. The main areas of to be considered comprise of distribution and retailing of milk, market development, equipment financing to farmers, training of management of dairy groups, provision of consumer information, processing and packaging of milk products, training of farmers, bulking and cooling of milk and support of feeding programs. These factors enhance performance since they are likely to lead to customer satisfaction, skilled and competent actors, new dairy products, better quality products and sufficient quantity to serve the market.

Value chain theory by Porter (1985) presents activities which value addition is added into a service or a product. Such activities include: inbound logistics, operations, outbound logistics, marketing and sales and technology and development. This theory can help organizations to identify key activities to improve to enhance dairy firm performance. Dynamic capability theory by Teece, Pisano and Shuen (1997), addresses how firms can cope within a dynamic and constantly changing environment through application of its resources. Dairy Saccos, therefore, should use these theories in its operations to identify key activities in the value chain that will its dynamic capability.

The study also concluded that adoption of dairy value chain networks improve the performance of Dairy Sacco's in Kiambu County to a significant level. This is because the Dairy Saccos in Kiambu County that have adopted the value chain networks enjoyed high

performance. The Dairy Saccos that have adopted value chain networks also experienced reduction in their operations costs and increase market share and sales. Dairy Saccos in Kiambu County which have adopted value chain networks also experienced shorter processing time, low customer complaints and also enjoyed improved quality of milk products. As a result, the study concluded that there is a signification and positive relationship between dairy value chain networks and the performance of Dairy Saccos in Kiambu County.

5.4 Recommendations of the Study

The study made it clear that dairy value chain networks was essential for the performance of the Dairy Saccos. The study recommended the following:

1. That various Saccos in the county should integrate dairy value chain network in the operationalization of the Saccos in a manner that is sustainable and efficient to ensure that performance of the Saccos is enhanced and translated to profits.

2. The study also recommends that the various Saccos outline the different concepts of value chain network that they have in use. From these concepts they should identify which ones are the most effective in enhancing performance and invest heavily in them. The Saccos should also seek to understand those elements that are not effective and work towards addressing the challenges they pose to their performance.

3. The study also recommends sharing of information about the concept of value chain among the Saccos. This is because through benchmarking they will support each other to successfully integrate the concept into their performance. Although the Saccos are competitive, enhanced performance among the Saccos as a whole from the same region would help them become more profitable as compared to other regions.

4. With the application of value chain networks, dairy firms should be headed by skilled employees. Heads of department should ensure standard procedures are followed in production. This will ensure consistency of the products being processed hence reduction of complaints in product quality.

5.5 Limitations of the Study

It was evident throughout the research that time was inadequate to conduct the study. The limited time restricted the researcher to the investigation of only one factor. It also limited the researcher in the acquisition of materials. However, the researcher strived to complete the exploration with the stipulated period. The study was also limited to bias. This was evident through some of the questions that were not answered. This bias is informed by the respondents fear that since the dairy industry is too competitive divulging information about their operations would be disadvantageous for their marketing strategies. The study was also limited in the sense that it was carried out on the context of dairy Saccos. Thus the data collected reflected only the environment within which dairy Saccos operate. Thus the results of this study can only be inferred to dairy Saccos alone.

5.6 Suggested Areas for Further Research

The research established that value chain networks accounted for 61% of the variation in performance. Thus the study suggests that other researchers investigate other factors that could have an influence on performance of Saccos. The study was also carried out in Kiambu County. It is important to conduct a replica study within other Counties in Kenya as well to establish if the findings of this study are worth inferring to those of other counties to avoid generalizations.

The study was conducted to study the performance of dairy Saccos therefore it would be paramount for other Saccos in different industries to conduct the same study. This would help provide a knowledge base of how value chain addition works in different sectors of the economy.

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APPENDICES

Appendix I: Letter of Introduction

UNIVERSITY OF NAIROBI
SCHOOL OF BUSINESS

Telephone: 020-8095398
Telegrams: "Varsity", Nairobi
Telex: 22095 Varsities
Our Ref: **D61/5933/2017**

Tel: 020 8095398
Nairobi, Kenya

Date: 5th October, 2020

TO WHOM IT MAY CONCERN

The bearer of this letter, Abuga Everlyne Michoki of Registration Number **D61/89973/2016** is a Master of Business Administration (MBA) student of the University of Nairobi.

She is required to submit as part of her coursework assessment a research project report. We would like the student to do her project on **Dairy value chain networks and performance of dairy saccos in Kiambu county,Kenya.** We would, therefore, appreciate if you assist her by allowing her to collect data within your organization for the research.

The results of the report will be used solely for academic purposes and a copy of the same will be availed to the interviewed organization on request.

Thank you.

UNIVERSITY OF NAIROBI
05 OCT 2020
P.O. BOX 30197 - 00100, NAIROBI

PHILIP NGIGI
FOR: DEAN, SCHOOL OF BUSINESS

Appendix II: Letter of Transmittal

Everlyne Michoki Abuga
P.O Box 20944
NAIROBI

21st August, 2020

TO WHOM IT MAY CONCERN

Dear Sir/Madam

RE: PERMISSION TO COLLECT DATA

I am a post graduate student at University of Nairobi, School of Business specializing in Strategic Management. I am undertaking a research on Dairy Value Chain Networks and Performance of Dairy Saccos in Kiambu County, Kenya. I intend to collect data/information from the Dairy Saccos situated in Kiambu County.

To fulfill the requirement of this course, I am appealing to your dairy sacco to allow me to collect data through questionnaires from the senior management or equivalent. The information will be treated with strict confidence and be used for academic purposes only.

Thank you.

Abuga

Everlyne M. Abuga
Reg. No. D61/89973/2016

Appendix III: Questionnaire

This questionnaire seeks to collect data on value chain networks and performance of Dairy Saccos in Kiambu County. The collected information will be utilized solely for academic reasons and used confidentiality. Please provide all the required details in the questionnaire by ticking (√) on the choices provided and/or filling questions requiring your personal opinion in the blanks provided.

SECTION A: DEMOGRAPHIC

1. Name of the Dairy Sacco (Optional)…….

2. Please indicate your age group.

18 to 25 years [ ] 26 to 30 years [ ] 31 to 35 years [ ]

36 to 40 years [ ] Over 40 years [ ]

3. Please indicate your gender.?

Male [ ] Female [ ]

4. What is your position in the Sacco

Position	**Tick(√)**
CEO/Managing Director	
Director/Senior Manager/General Manager	
Manager, Head of Division	
Others (Please specify)	

5. What is your highest level of education?

Certificate [ ] Diploma [ ]

Bachelor's Degree [ ] Master's Degree [ ]

6. For how long have you worked for the Dairy Sacco?

Less than a year [ ] 1-5 years [ ] 6-10years [ ]

11-15 years [ ] Over 15 years [ ]

7. For how long has the Dairy Sacco been in existence?

Less than a year [ ] 1-5 years [ ] 6-10years [ ]

11-15 years [ ] Over 15 years [ ]

8. Please indicate the ownership structure of the Dairy Sacco.

Firm Ownership Structure	**Tick(√)**
Sole proprietorship	
Partnership	
Corporation	
Limited Liability Company	

9. How many employees work in the Dairy Sacco?

1 – 100 [ ] 101- 200 [ ]

201 -300 [ ] Above 301 [ ]

SECTION B: VALUE CHAIN NETWORKS

10. Kindly indicate on a Scale of 1 – 5 to what extent your dairy sacco has adopted the following value chain networks and activities

Key:

Very great extent [1], great extent [2], moderate extent [3], small extent [4], very small extent [5] (Kindly tick (✓) as appropriate.

Value Chain Networks	**1**	**2**	**3**	**4**	**5**
Distribution and retailing of milk					
Market development					
Equipment financing to farmers					
Training of management of dairy groups					
Provision of consumer information					
Processing and packaging of milk products					
Training of farmers					
Bulking and cooling of Milk					
Support of feeding programmes					
Provision of after sales services to customers					
Engaging in advertising programmes					
Engaging in customer information integration					

The firm has an efficient support systems such accounting, administrative and legal services.					

SECTION C: FIRM PERFORMANCE

11.In what ways has adoption of dairy value chain influenced the performance of your dairy sacco?

Key: Use, 5 = Greatly; 4 = Considerately; 3 = Moderately; 2 = Remotely; 1= Not at all

(Kindly tick(✓) as appropriate.

Performance Indicators	**1**	**2**	**3**	**4**	**5**
Significantly reduced costs					
Increase in sales					
Increase in Sacco profits					
Increased efficiency in business operations					
Reduction in wastes					
Increase in quantity of milk produced					
Shorter order processing time					
Improved quality of milk					
High-value dairy products					
Reduced customer complaints					
Increased employee satisfaction					

Improved alignment of business functions and organization strategy					
Improved employee satisfaction					
Increased market share					

12. Recommend any other strategy that can be used to promote the performance of your Dairy Sacco?

THANK YOU SO MUCH

Appendix IV: Registered Dairy Saccos in Kiambu County

	Sub County	Co-operative Society
1	Githunguri Sub County	Githunguri Dairy Farmers Co-operative Fariji Dairy Co-operative Society
2	Kabete Sub County	Kabete Dairy Co-operative Society Muguga Dairy Co-operative Society
3	Kikuyu Sub County	Kikuyu Dairy Co-operative Society Gikabura Dairy Co-operative Society
4	Lari Sub County	Lari Dairy Co-operative Society Gatamaiyu Dairy Co-operative Society
5	Limuru Sub County	Limuru Dairy Co-operative Society
6	Kiambu Sub County	K-Unity Co-operative Society
7	Kiambaa Sub County	Kiambaa Dairies Co-operative Society
8	Gatundu South Sub County	Mangu Processing Co-operative Society
9	Ruiru Sub County	NONE
10	Gatundu North Sub County	NONE
11	Thika Sub County	NONE
12	Juja Sub County	NONE

Source: Kenya Dairy Board Report, 2019

Appendix V: Map of Kiambu County

Source: Google Map