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# Factors affecting the development of dairy cooperatives in Kenya: a case study of Kiambu County

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**FACTORS AFFECTING THE DEVELOPMENT OF DAIRY  
COOPERATIVES IN KENYA: A CASE STUDY OF KIAMBU  
COUNTY.**

**MUGWE PETER GITHINJI**

**102805**

**A DISSERTATION SUBMITTED IN PARTIAL FULFILLMENT OF THE  
REQUIREMENTS FOR THE AWARD OF THE DEGREE OF MASTER OF  
MANAGEMENT IN AGRIBUSINESS OF STRATHMORE UNIVERSITY**

**OCTOBER, 2021**

## DECLARATION


### Declaration by the Student

This dissertation is my original work and has not been presented to any other examination body. No part of this thesis should be reproduced without my consent or that of the Strathmore Business School.

Name: Mugwe Peter Githinji    Signature:     Date: 12.10.2021  
MMA/2017/102805

## APPROVAL

This dissertation has been presented for examination with my approval as the Strathmore Business School Supervisor

Name: **Dr. David Mathuva**    Signature:     Date: \_13<sup>th</sup> October 2021

## **DEDICATION**

I would like to dedicate this dissertation to my family, my father for his moral and financial support throughout my academic life, my late Mother for instilling the entrepreneurship grit in me. To my wife Wanjiku and my children Bakhita, Ramiah and Jabali who have been my source of strength and support. Finally, to the Strathmore Business School community and everyone who has supported me in this journey.

God Bless You!

## ABSTRACT

Cooperatives societies are part and parcel of an increasing number of people in formal and informal employment the world over. The study sought to establish factors affecting the development of Dairy Cooperatives in Kiambu County, Kenya. The objectives of the study were to: find out the effect of adoption of technology on the development of Dairy Cooperatives; evaluate the effect of financial access on the development of cooperatives; find out how managerial skills affects the development of Dairy Cooperatives in Kiambu County and; determine how the participation of members affect the development of Dairy Cooperatives in Kiambu County. Grounded on the Social Capital and Resource-Based Theory, this study adopted the descriptive research design. In this study, the target population was 59,635 registered Dairy Cooperative members while the sample size was 398 respondents who were picked via stratified random sampling. Data collection involved questionnaires that contained 5-point scale Likert-type statements. Descriptive and inferential statistics were carried out. In this case, tests such as central tendency (mean), frequencies, percentages, standard deviation in addition to Pearson and regression analysis were utilized. The findings show that the factors under investigation have significant influences on development of dairy cooperatives. This is evidenced by positive and statistically significant relationship between technology adoption, managerial skills & leadership; access to finance; member's participation to the development of dairy cooperatives. These findings show that technology adoption showed the strongest relationship with development of dairy cooperatives. This was followed by member's participation, access to finance, and managerial skills and leadership in that order. These findings are corroborated by results from multivariate regression analysis that shows that all the IVs statistically significantly predict the DV. These findings lead to the conclusions that the kind of managerial skills and leadership in dairy cooperatives affected their development. Access to finance also affected the level to which cooperatives funded their development activities. Affordable financing and increased member subscriptions affected the success of Cooperatives projects. Increasing members' participation would also increase their buy in of the development projects of the dairy cooperatives; augmenting their sustainability. This would go on to enhance their development. The study recommends the need for Dairy Cooperatives to have robust management teams staffed with highly competent and experienced managers. The integrity of the firms should be established and regularly assessed to avoid corruption and mismanagement of the finances. Training was also necessary so as to enhance the capacity of managers and employees. This could be done in-house or sponsored in institutions of learning. There was also need to carry out thorough research before starting development projects so as to understand their riskiness and establish the requisite strategies to ensure their success. Partnerships with SMEs was also recommended since it could avail low-cost credit. Member participation should also be strengthened and embedded in all management processes of the Dairy Cooperatives so as to enhance their support of projects. Regular monitoring and evaluation was recommended so as to come up with strategies for correcting deviations from predetermined development objectives.

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## **LIST OF ABBREVIATION AND ACRONYMS**

<b>ICA</b>	International Cooperative Alliance
<b>KES</b>	Kenya Shillings
<b>KUSCCO</b>	Kenya Union of Savings & Credit Co-operatives Limited
<b>MMA</b>	Master of Management in Agribusiness
<b>NSE</b>	Nairobi Stock Exchange
<b>RBT</b>	Resource-Based Theory
<b>SACCO</b>	Saving and Credit Cooperative Organization
<b>SASRA</b>	Sacco Societies Regulatory Authority

## OPERATIONAL DEFINITION OF TERMS

<b>Adoption of Technology:</b>	This is the term that refers to the acceptance, integration, and use of new technology in society.
<b>Financial Access:</b>	This is the ability of individuals or enterprises to obtain financial services, e.g. credit, deposit, payment, insurance, mortgage, and other risk management services from financial institutions (Aslı Demirgüç-Kunt, 2008)
<b>Development of Cooperatives:</b>	It is the long-term continuity and growth of an enterprise or keeping the enterprise going progressively over time (Bookchin, 2007).
<b>Management skills:</b>	Basic skills including, problem-solving and decision making, planning, meeting management, delegation, and communications needed in managing an organization (Mudibo, 2009)
<b>Members' Participation:</b>	Participation the process by which members influence the scope, operation, and direction as well as activities of their respective cooperatives- (ICA) The International Cooperative Alliance

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Asanteni Sana!

## **CHAPTER ONE**

### **BACKGROUND**

#### **1.1 Introduction**

This chapter presents the background information on the subject of the study and covers the statement of the problem, research objectives, research questions, and the significance of the study. The chapter also covers other sections such as the limitations of the study and scope. In the background of the study, it reviews the key concepts and how they relate to one another. At the end, the chapter justifies the need for the research to be carried out.

#### **1.2 Background of the study**

A cooperative is formally defined as ‘an autonomous association of people united voluntarily to meet their common social, economic, and cultural needs and aspirations through a mutually owned and democratically-controlled enterprise’. The International Labor Organization (ILO) (2014) and United Nation (2009), posit that co-operatives in developing countries can play a very integral role in poverty eradication and economic stimulation of the developing countries. The ILO and the International Co-operative Alliance (ICA), both see the potential of cooperatives to contribute to the Sustainable Development Goals (ILO and ICA, 2014). This is with the support and the spirit of the Cooperative values among them; self-help, democracy, equality, equity, and solidarity supported by the Cooperative principles and mode of governance (voluntary and open membership, democratic member control, member economic participation, autonomy and independence, education, training and information, co-operation among cooperatives, concern for the community), co-operatives possess the capacity of promoting economically and socially inclusive development.

Agricultural co-operatives have been viewed as organizations with the potential to foster socio-economic development and to reduce poverty within the developing world (Bibby & Shaw, 2005; Birchall, 2003, 2004; FAO, 2012; Munkner, 2012; UN, 2011; Vicari & De Muro, 2012). Following the various economic and financial crisis over the decade there is a resurgence of cooperatives, both at the national and international level and organizations are anxious to understand the extent to which

cooperatives in developing countries have been able to cope with the crisis. Much of the interest is focused in Africa where Cooperatives have undergone periods of mismanagement, government interference and failure (Develtere, Pollet, & Wanyama, 2008) and despite that they are growing their membership and growth in numbers while serving the poor communities in these region. There has been arguments that the advent of liberalization in the 1990s in the African context was the charm that revitalized the agricultural co-operatives to develop as genuine member-controlled and business-oriented organizations consequently improving the wellbeing of vulnerable people (Wanyama, 2013). Francesconi and Wouterse (2011) argue that the agricultural co-operatives in the African region have shown a mixed fortunes in terms of performance, growth, development and sustainability. While there are success stories, not all agricultural cooperative endeavors have been sustainable but those that have can provide key insights for cooperative development across the region.

The current co-operative movement was founded in 1844 in Rochdale village, Manchester in England as posited by Pollet (2013). The old countryside credit union was introduced in 1864 by Raiffeisen in German to cover the needs of those in marginal areas in the former communist nation. The rural communities were deemed un-bankable due to limited cash flows and the capacity of human resources (WOCCU 2008). Farmers in Africa took up cooperatives towards the end of 1950s for cash crops like pyrethrum and coffee, tea, sisal among other crops. Mumanyi (2014), argues that the success of the cooperative movement in Ghana has been widely simulated throughout the African Region to great success. Springing from members` savings, deposits and ploughed back earnings are the Cooperative funds (Shrestha 2009). Sharma et al (2005) posits that the resultant benefits have been the improved returns, assets, food consumption and education expenditure, improved housing and reduced health expenditures which were enjoyed by the Cooperative members compared to non-members. On the flipside Problems to do with poor management, embezzlement of funds, and access to capital for development, government policies and the rapid evolution of technology are however curtailing co-operatives in Tanzania from achieving the expected growth (Maghimbi 2010; Mwakajumulo 2011).

The oldest cooperative was introduced in Kenya by the British colonizers in 1908 at Kipkelion. Its main drive was to support the agricultural and dairy sustenance for the

colonizers (Kobia 2011). Government policies and reforms have since been put in place to help streamline the Cooperative movement to maximizing returns to its members. KUSCCO (2010) reports that the Cooperative movement in Kenya has however been plagued by various setbacks that need to be addressed in-order to steer the movement into stability and soundness. The Central Bank of Kenya (2011) financial report, the Cooperative movement in Kenya provided 45% of the Gross Domestic Product (GDP) and the cumulative deposits are above Ksh.200 billion and Ksh.210 billion in assets. The establishment and operation of cooperatives in Kenya is guided by the legislation in the Cooperative Societies Act of 2004. However over the years' management issues, technology evolution, members' participation and government policies are some of the challenges that confront the Cooperative movement in Kenya. The institutions are facing serious liquidity issues due to the rising cost of capital and most of the Cooperatives are unable to meet the demands of their members' expectations (WOCCU 2008). Ondieki et al (2011) posits that limited managerial skills have also largely affected Cooperatives in the country.

### **1.2.1 Global and Local Perspective of Cooperatives Development**

Birchall, 2004 states that the earliest agricultural cooperatives were formed in Europe in the early 17<sup>th</sup> century in the Military and were mainly agricultural cooperatives. The earliest civil agricultural cooperatives were also formed in Europe in the second half of the 19<sup>th</sup> century before spreading to North America and the rest of the world. They have become the true facilitator of agronomic development in the developing nations where farmers have cooperated to form mutual farm Cooperatives e.g. Dairy and insurance societies.

The Kenyan co-operative movement is the strongest in Africa in terms of financial liquidity and membership, the country savings credit and co-operative (Sacco) movement is valued at over KES 1 trillion and scooping the crown among the best in Africa. Government records show that Saccos directly employ more than 500,000 while another 1.5 million Kenyans benefits indirectly. According to the 2015 statistical Report by the world council of credit union (WOCCU), Kenya has the leading Sacco movement in Africa with over five million members (WOCCU 2015).

The country's Cooperatives provide over 61% of the total savings mobilized and 68% of the loans advanced by the Cooperative movement in Africa. Cognizant of the high value that Cooperatives hold in Kenyan economy, the government in 2009 formed the Sacco's societies Regulatory Authority (SASRA) to provide oversight for deposit-taking co-operatives, as enshrined in the Sacco societies Act 2008. Today, about 174 Cooperatives holding Kes 305.3 billion deposits from 3.6 million members are under SASRA's regulation. That notwithstanding over 30 million Kenyans depends on the co-operative movement for loans. The Cooperative movement provides a source of employment to young men and women while providing revenue to the government in the form of taxes. And In supporting enterprise development and self-employment to the Kenyan economy, Cooperatives offer affordable credit to small and medium enterprises (SMEs) KUSCCO (2019).

The Ministry of cooperative development & marketing, 2008 report shows the rich history of Kenya's involvement to the cooperative development that has been characterized by strong growth, thus making a momentous contribution to the overall growth of the economy. The Cooperatives are recognized by the government to be a major contributor to national development, as cooperatives are found in almost all sectors of the economy e.g. Agriculture, Transport, Education, Manufacturing and the Service industries. Out of the total population of Kenya which is approximately 49 million (Republic of Kenya, 2019), it is projected that 63 % of the populace will participate directly or indirectly in cooperative-based enterprises (GoK, 2019). The Cooperative movement is supposed to play a vibrant role in achieving the Jubilee government big 4 agenda which are food security, manufacturing (employment creation) Security (Through wealth creation) and universal health support. Kenya currently has about 12,000 registered cooperative societies with a membership of over 6.5 million which has managed to mobilize domestic savings estimated to be over Kes 130 billion. The Republic of Kenya 2007; International Monetary Fund 2007; The Kenya High Commission in the United Kingdom 2007 reports submit that the Cooperative movement have directly employed over 500,000 people, besides providing opportunities for self-employment to about 63% of Kenya's populace.

### **1.3 Statement of the Problem**

From extant statistics, the Cooperative Movement in Kenya is estimated to contribute about 47% of the GDP and 34% of the national savings; the extant empirical evidence indicates further that some 63% of the Kenyan populace derive their livelihood either directly or indirectly from Cooperatives. WOCCU, 2010, submit that during the year 2011, the cooperative movement reported a revenue of about Ksh.50 Billion. We can conclude from this report that the cooperatives have a great potential as an economic pillar for development of the country. The way to sustain the development of these agricultural cooperatives in Kenya, have been debatable, since the number of cooperatives going into insolvency and hurting the economy is increasing over time (GoK, 2013).

A GoK, 2012 study commissioned by the Ministry of Cooperative Development and Marketing found that from a sample of 220 cooperatives only 3.63% were considered to be sustainable, 35% cooperatives had an average sustainability score and 78% were considered un-sustainable. This report scored the cooperatives based on 3 sets of criteria; the existence of a business plan (50%), the degree of representation (20%) and management (30%). The poor development sustainability of agricultural cooperatives in Kenya has been attributed to management skills by the leadership, adoption of technology, stakeholder involvement and access to finance (RoK, 2012; WOCCU, 2010). Munkner, 2015; Birchall, 2011; Mazzrol et al., 2011).It is on this premise that the researcher embarked to establish the determinants of development of Dairy cooperatives in Kenya with a keen interest on Kiambu county. Could managerial skills, stakeholder involvement, access to finance and Technology adoption be drivers of development of Dairy Cooperatives in Kenya? This study seek to dive deeper and find out.

### **1.4 Objective of the Study**

#### **1.4.1 The General Objective**

The general objective of the study was to establish factors affecting development of Dairy Cooperative Societies in Kiambu County, Kenya.

### **1.4.2 Specific Objectives**

The study was guided by the following objectives:

- i. To find out the effect of technology adoption on the development of Cooperatives in Kiambu County;
- ii. To evaluate the effect of financial access on the development of Dairy Cooperatives in Kiambu County;
- iii. To find out how managerial skills affects the development of Dairy Cooperatives in Kiambu County;
- iv. To determine how the participation of members affect the development of Dairy Cooperatives in Kiambu County.

### **1.5 Research Questions**

- i. What is the effect of technology adoption on the development of Dairy Cooperatives in Kiambu County?
- ii. What is the effect of financial access on the development of Dairy Cooperatives in Kiambu County?
- iii. What is the effect of managerial skills on the development of Dairy Cooperatives in Kiambu County?
- iv. What is the effect of members' participation on the development of Dairy Cooperatives in Kiambu County?

### **1.6 Scope of the Study**

The study focused on analyzing the factors affecting the development of Dairy Cooperatives in Kiambu County. The study was carried out among the 12 Sub-Counties that make up Kiambu County. The researchers target population was 59,635 Dairy Cooperatives members in Kiambu County, and the sample population was 398 members. The study took about two months from March 2020.

### **1.7 Significance of the study**

The research study sought to avail useful insights to the Dairy Cooperatives members on the issues that determine the development of Dairy Cooperatives they patronize. This would also help policy makers in the formulation of policies towards improving service delivery structure and ensure the Dairy Cooperatives sector development. The

recommendations of this study would also make potential contributions towards the policies that govern Cooperative Societies in Kenya as well as enhance efficiency in the sector. Most importantly, the study sought to donate to the body of knowledge on the implementation of investment projects particularly in the Dairy Cooperative Societies. The study also shows the role played by the selected factors on the development of Dairy Cooperative Societies and their place in existing empirical and theoretical literature. Through the recommendations, this study also provided areas for further research.

## **CHAPTER TWO**

### **LITERATURE REVIEW**

#### **2.1 Introduction**

This chapter provides the reviews of literature in line with the study objectives. This is done critically and against the backdrop of the problem facing the study. Lastly, a conceptual framework is presented.

#### **2.2 Theoretical Review of Literature**

The synergy of each and every member of a Cooperative society is required for any developmental progress of a community or a group. The social capital is the effect of member's relations in social groups that often unknowingly result in fulfillment of their goals together and individually. This relates also to the promotion of cooperation and unity among members of the same association leading to trust and common bond. This theoretical framework integrates two sides: on one hand how cooperatives create internal social capital and spread it in their immediate environment, and, on the other hand, it explains how the presence of social capital promotes the creation and development of cooperatives. The theories further covers the various aspects of social capital chief among them the type of social networking, relationship, and interaction which comprises the rules, regulations, and norms that govern social actions and common bond among members including the benefits that is derived from them (Anderson, Locker, & Nugent, 2002).

##### **2.2.1 The Social Capital theory**

The social capital theory originates from social capital, which comprises the attitudes, the relationships, the institutions, and values that dictate on the interactions among people and contribute to economic and social development. Basargekar (2009) posits social capital as “the abilities of people to work together towards resolving community or social issue and promote equitable access to benefits of development”. Glaeser, Laibson, and Sacerdote (2002) suggest that “social capital can be considered as a tool of economic development among people, which also affects their environment and community.” This can either be positively or negatively based on their collective action for mutual benefit of a group or a community. He also argues

that individuals do not generate social capital and thus are not the primary unit of analysis in the use of social capital theory to measure an occurrence.

Basargeker (2010) reckons that the theory focuses also on collective responsibility thus enhancing better participation by members in a society or a community. The theory surmises that when people act or function in a group like in a cooperative society, there is a trickle-down effect to the economic and social development of the group, individuals in the group and the community. This development can either be financial condition or physical progress such as material acquisition. This is important because economic development does not take place without expansion in physical material achievement and financial possessions.

Glaeser et al. (2002) opine that the theory recognizes healthy social and civil environment, which should help the social group to act and meet their personal, and group interest without which economic development capabilities will not be accomplished. The attention of this theory is to use social network, association, and relationship for the social and economic development of individuals, the group and the community. The application of the social capital theory to the role of cooperative societies in development is to evaluate the contribution of the cooperatives to members' standard of living which basically examines household income, resources, business profitability and enterprise asset condition is expected to lead to social, financial and physical rewards.

Henry and Schimmel (2011) in conclusion suggest that cooperatives are meant to meet members' financial, economic and social needs. In the context of this current study, members' needs and interests ought to be put into consideration. The economic needs can be met through the financial gains while the members can derive the physical benefits from interactions, and finally, the social needs relate to social benefits. The social, financial and physical contribution of cooperative to the members may include easy access to loans, ability to accumulate savings and acquisition of physical assets like land, livestock and houses among others. Financial benefit or capital benefit accrue in a cooperative due to improved interpersonal relations while trust and common bond can increase efficiency and reduce the costs of

transaction, thus creating financial capital which lacks in other types of institutions like banks.

### **2.2.2 Resource-Based Theory**

This is a tactic to accomplishing competitive lead that began in the mid-1980s and early 1990s, following major works published by Wernerfelt, B. (“The Resource-Based View of the Firm”), Prahalad and Hamel (“The Core Competence of The Corporation”), Barney, J. (“Firm resources and sustained competitive advantage”) and others. Grant (2001) posits that the Resource-Based Theory (RBT), hold that organizations face major challenges in identifying and using resources effectively. In this light, most organizations do not appreciate their resources. This causes such organizations to use such ineffectively. According to Grant, financial balance sheets, more often than not, fail to present intangible resources and people-based skills. Without mapping out clearly what the resources of an organization entail, it is very hard to use resources effectively. He identifies six classes of resources. These include human, technological, physical, financial, reputation and, organizational resources. Each of these resources contributes significantly to the profitability of organization. In line with this current study, the various resources in a Dairy Cooperative could affect implementation of development projects.

Human resources, the management of the Cooperative and other employees play key roles in the development of Cooperatives. In this regard, their technology knowledge and abilities to apply it would affect the development of the Cooperative. Finance is another pertinent resource that would affect the development of the Cooperative

There exists some criticisms of the resource based theory. One of the major criticism is that it assumes that all the resources generate the same value for the firm, a concept in logic called tautology (Priem & Butler, 2001). This is a wild presumption since this cannot be the case. The role of technology on the productivity of resources is taken for granted. Indeed, the theory is also narrow in implications and very rigid.

The theory also presupposes that resources just happen to be there instead of critically assessing the factors that lead to the availability of these resources such as how capabilities are acquired or developed to effectively manage the resources owned or

obtained. As applied to this study, the RBT provides the conceptual lens to understand how obtaining financial resources may contribute to the development of dairy cooperatives in Kiambu.

### **2.3 Empirical Review**

This section principally grants an evaluation of pertinent empirical literature by various scholars on the study variables namely effects of adoption of technology, financial access, Managerial skills and members' participation on the development of Dairy cooperatives in Kenya.

#### **2.3.1 Adoption of Technology and the development of Dairy Cooperatives**

Technology adoption strategy has been established by many researchers to be a calculated technique to improve competitiveness and create a competitive edge within the industry. Inversely the greatest singular factor accelerating the degeneration of a firm's competitiveness is the inability to develop and integrate technology strategy and business strategy. Mitchell (2007), did a study on What Motivates Members to Participate in Cooperatives and Mutual Businesses. He discovered that technology strategy also played an important role in defining a firm's performance in technology-driven industries such as industrial automation companies as further indicated by many literatures. However, most of the previous studies have generally focused on the structure-conduct-performance theory which emphasized greatly on external factors (market condition and competitors) to link strategies to firm growth.

A study done by Venansius (2014) on Organizational Change found out that most Cooperatives had created web pages that were easily accessible to the members and other stakeholders' e.g. customers and potential members. The Cooperatives offerings are marketed here both locally and internationally on real time basis. Transactions such as subscription payment, Cooperative deposits, dividends payments, shares, bills, generation of Cooperative account statements amongst other online services have been enabled through the use of automation.

The convenience of the Automatic teller machines has enabled shareholders to access their funds anywhere at any given time. The emergency of e-money transactions like cash transfers, pay bills, buy goods, withdrawals and deposits amongst other

Cooperative mobile money services has been capacitated by the adoption of information technology. Another study carried out by Manyara (2003) on Challenges and opportunities facing SACCO in the current devolved system of government of Kenya found out that technology is made up of discoveries in science, product development and improvements in process, machinery, automation, and information technology.

The Ministry of Co-operative Development and Marketing in its (2008) report posits that ICT is increasingly becoming an essential tool for efficient operations of investments and that co-operatives should be encouraged to use this technology whether ICT or for production. Through its policy document on investment, the Ministry of co-operatives notes that the number of co-operatives that are computerized is minimal while those that are partially computerized are the majority thus recommends that CODIC (Co-operative Development Information Center) be operationalized to fulfill its core mandate of developing and assisting the co-operative movement to acquire compatible computer software for their operations at a competitive price; and that to save on costs, Cooperatives should link up with private ATM service providers, e.g. Pesa link or alternatively utilize Cooperative Bank ATM service which has a country wide network and is available for the Cooperative movement.

Finally in a study by Thompson et al., (2010) done in Nigeria on the quality of services and demand for health care in Nigeria, they found out that accurate and timely information about daily operations is essential if managers are to gauge how well the strategy execution process is proceeding; and that information systems need to cover five broad areas of customer data, operation data, employee data, supplier/partner/collaborative ally data, and the financial performance data. Thus, ICTs can provide reliable access to markets (Local, regional and International) through increased use of affordable communications (phone, email and website). Gunga (2008) posits that ICT enable the reduction in the overall operation overheads through enhanced access to timely and reliable data, enhanced communications within the entire supply, value chain and knowledge management that arises from the achievement of appropriate skills-sets that enhances throughput and create information about new opportunities. Literature reviewed on adoption of technology

has showed the importance of technology in organizations. However most of the studies done do not expound how technology especially production technology can affect the development of Dairy Cooperatives.

### **2.3.2 Financial Access and the development of Dairy Cooperatives**

Isidore and Rand (2019) in his study on "the relationship between the income and behavioral biases." established that more income was correlated with increased financial knowledge. This went on to affect confidence in making investments decisions on development projects. Within the context, of this study, it is apparent that income influences investment decisions and thus development. However, it may be a tall order to establish the level to which this applies to Dairy Cooperatives without studies such as the current one.

Umamaheswari and Kumar (2014) in their research on “on Coimbatore based salaried investors’ awareness, attitude, expectation, and satisfaction over their investments”, it found that income predicted investment decisions in the study area. In this regard, people made various considerations before making investment decisions. Key to this was the amount of income they had and their saving plans. However, a third of the study participants lacked the relevant investment awareness to opt for the correct financial plan. This current study sets out to find out how disposable income as a sub-variable of access to finance influence the development of Dairy Cooperatives in Kiambu Kenya.

Velmurugan, Selvam, and Nazar (2015) in their study “an empirical analysis on perception of investors’ towards various investment avenues” sought to find out the perception persons of different income levels on various investment options. It was established that persons with higher income levels preferred to invest in less riskier environment and vice versa. This shows that risk averseness, which was often pegged on income levels, was a key determinant of investment decisions and thus development and progression. This modern study was determined to test the levels to which this trend persists in Dairy Cooperative in Kiambu Kenya.

Cherogony (2013) assessed “the effects of financial resource mobilization by Ainabkoi Rural Cooperative Societies in Ainabkoi Division Uasin Gishu County.”

The findings obtained show that the success of implementation of development projects was pegged to available finances. In this regard, Cooperatives, armed with an understanding of what was at stake, were able to obtain sufficient finances for their development projects. However, the ability by Cooperatives to solicit for sufficient capital was pegged on the expected returns for the investments so made. This study was not exhaustive as it missed to look at other major factors like the cost of those finances and this underlines the importance of this current study.

Onugu, (2014) while researching on the financial performance of cooperative societies in Enugu state Nigeria, found out that the cost of financing is the main issue considered by organizations when deciding of the type of capital source to pursue for their development projects. The value of the investments and projects undertaken by cooperative societies is highly linked to the costs of financing them thus they have to be put into account for the managers to make informed decisions. Cooperative societies find it difficult to measure the impact of financing costs on their capital structure decisions in regard to their investing activities. However, this study did not exhaust all aspects of cost of finance which contributes to the financial performance of cooperative societies at large.

Akhtar et al., (2012) did a study on the connection between financial leverage and financial performance of the energy sector in Pakistan. The research determined that organizations with inadequate investment opportunities often engage in insufficient projects where risks analysis is not easy thus the costs of financing are priced high. The size of the firm was used determine the cost of financing. In this aspect the bigger firms had an upper negotiation power thus a lower average financing costs. They further posit that most of large institutions tend to diversify their portfolios in order to control their capital costs. This study failed to look into the uncertainties associated with financial leverage and how they can be managed in order to determine its influence towards organizational development.

### **2.3.3 Managerial skills and the development of Dairy Cooperatives**

Management is the process of planning, organizing, motivating a group of people. It involves deciding the objectives of the organization and planning how to achieve those objectives (Cole 2010). Hamisu (2010) conducted a study that matched the

time-management skills and academic performance of mature and traditional-entry university students. The goal of the research study was to investigate whether there existed a correlation between time-management skills and academic performance in the university. The results clearly showed that the provision of management skills among the employees is vital to new organization generation. The methodologies used both primary and secondary showed its influence based on results. It was paramount for the executives of all organizations to have technological skill-sets in virtually all advanced and refined production and processing technology which is evolving daily. New innovations and technologies in the organization are bound to be achieved due to this expertise. This will go hand in hand to help with snowballing capacity development and competition with major foreign conglomerates that are expanding daily.

Johnson (2008) did a research on a missed opportunity for small farmers and land reform beneficiaries in South Africa. He discovered that managerial skills were the chief influence in exerting control over activities and relationships within teams and organizations. Nonetheless, this was inspired by the benefits to be achieved from the performance and the resultant effects of the leader's performance. Consequently, management skills could also involve transformative learning in leadership improvement that focuses on both critically reflecting on individual behaviors and conventions with effectively generating means of accepting and acting upon the environment (Johnson, 2008).

One of the major role in strategic planning that determines vision is also played by management skills. Rajan (2009), posits that leadership strategy affects the organization's management potential and characteristics of those transformational leaders could cause important changes (Turner et al., 2001). A leader like this can take charge in areas of corporate vision, strategy and culture while also being able to promote creativity of new products and technologies in organizations (Bass, 2005). Avolio (2012), did a study on Strategy Implementation at GlaxoSmithKline where it was established that, leadership expertise affected successful management, and this was a key component of policy implementation. The essential ingredient is management skills regardless of organizational size although in small to medium sized enterprises hire local managers while larger operations recruited foreign

executives to deal with demand and market pressures. Leadership, motivational creativity and inspiration by sharing the management and company's vision were characteristics of a good manager. Vision, corporate strategy and organizational culture were end-results of this encouragement process and success creativity.

Riggio,(2005) in his study “The Role of Informal Microfinance Institutions in Saving Mobilization, Investment and Poverty Reduction”, determined that due to capital constraints and family owned management styles, small to medium sized businesses contributed an overwhelming majority of the management skills problems affecting the many industries. This resulted in a shortage of knowledge as well as limiting the understanding and introduction of new innovations due to lack of knowledge management. Extant literature reviewed on use of excellent management skills has shown the importance of internal factors in organizations such as human resource management. However, these studies have not clearly determined the influence of managerial skills factors on the growth of organizations especially Cooperative societies. This research is aimed at filling this research gap.

#### **2.3.4 Members' Participation and the Development of Cooperatives**

Participation is defined as the process by which Dairy Cooperatives members exert their influence on the scope, operation and direction as well as activities of their respective cooperatives. The International Cooperative Alliance (ICA) defines cooperation as a form of union where the members unite as individuals to fulfill their social, economic and cultural needs. The cooperatives through the founding principles are less of profits and more towards services to the members. The aim is to afford the members the services and goods at the least cost. Beside the economic aspect to the community who are the members, the cooperatives are considered as social establishments which educate the people in economic management. (Selvaraj, 2000).

Davis (1969) describes participation to be both the mental and emotional involvement of a person in a group situation which encourages him to contribute to objectives and shares duties in them. On the other hand the UNO (1979) describes participation as the distribution by people the remunerations of growth, active input by people to development and participation of people in decision making at all the various levels of society. The UNDP (1993) also describes participation as the close taking part of

people in the commercial, public traditional and administrative process that affect their lives.

Selvaraj (2000) writing on cooperative in the New Millennium, for effective functioning of the cooperative movement, he posits that free-thinking members are the pole of the cooperative. These are members who are well-informed, about cooperatives principles and philosophy. These members make themselves aware of the problems and have the disposition to donate to the advancement of the cooperatives. Such membership certifies member participation in the business and decision-making affairs of the cooperatives. Observant members thwart fiscal indiscretions and the advent of bestowed interest in cooperatives. Ultimately the development of the cooperative is definite. On the flipside, ill-informed, lethargic, sedentary, non-participative and indifferent members become a problem in themselves. They are susceptible to manipulation by the covert elements in the society (Vishwanathan, 2000).

Thomas & Charles (1998) states that Participation is the measures of appearance at meetings, serving on committees, serving as an elected official, and finally participates in recruiting other farmers to become members. Consequently Cooperative institutions, which are devolved economic and autonomous units, can fulfill real economic activities by empowering individual members to pool their wealth for the production on feasible scales. This is truer in the rural areas where production units are small in size (especially land), the members are various in number and are physically scattered by nature and so no viable commercial activity can be practiced unless the individual efforts are established on the basis of principles of self-help service and impulse mutual aid (Vishwanatha,1994). Clark (1991) in their research acknowledged the indispensable elements for safeguarding active contribution of farmers' groups. These were; minute identical group, auxiliary income generation activities, formal credit, group promoters, training to group members, group savings, ready access to extension service, participatory monitoring and evaluation; and lastly group self-sufficiency. Mukherjee (1997) observed that the level of contribution tends to oscillate with passage of time, at times it's high then low but ultimately finds a balance and steadies. Rehman and Rehman (1998) found that there are many factors determining the nature of participation of members in

development programmes of a Cooperative among them; willingness, desirability, the representative nature of participants in the Cooperative and the asset distribution pattern among the participants among many more others.

#### **2.4 Conclusion of literature review**

Research has revealed that lack of adequate development of Dairy Cooperatives has made it difficult for them to absorb their operational losses ,which may have threatened their existence leading to the losses being absorbed thus affecting their dividend share and members capital and thus growth. Though the crucial purpose of Cooperatives is to mobilize members resources, and award credit in form of cash and farm inputs for the members development, this has made it challenging for the Cooperatives to grow their wealth, thus increase the members wealth .This failure to realize sufficient Cooperative development via the amassing of sufficient of formal capital, can be accredited to weak financial access, managerial skills, Technology adoption and members participation on issues regarding the development of their Cooperatives. Government policies in term of regulations and taxation play a significant role in determining the growth of the Dairy Cooperatives and the overall economy.

**Table 2.1 A summary of research gaps**

<b>Author</b>	<b>Variables relating to the present study</b>	<b>Objective(s) of the study</b>	<b>Findings or recommendations</b>	<b>Research gap (method, context among others)</b>
Mitchelle (2007)	Technology Adoption	“What Motivates Members to Participate in Cooperatives and Mutual Businesses?”	technology strategy plays an important role in defining a firm’s performance in technology-driven industries	Primary data in the UK. May not relate to Kenya
Venansius (2014)	Technology Adoption	“ On Using Technology to Enhance Service Delivery in a SACCO”	Most Cooperatives had created web pages that were easily accessible to the members and other stakeholders’ e.g. customers and potential members	Primary data in the Uganda. May not relate to Kenya
Manyara (2003)	Technology Adoption	“Challenges and opportunities facing SACCO in the current devolved system of government of Kenya.”	Found out that technology is made up of discoveries in science, product development and improvements in process, machinery, automation, and information technology.	Used desktop research primarily targeting Mombasa County. May not relate expressly to Kiambu county. Not based on primary data as this current study.
Thompson et al., (2010)	Technology Adoption	“ On the quality of services and demand for health care in Nigeria ”	ICTs can provide reliable access to markets (Local, regional and International) through increased use of affordable communications (phone, email and website	Was focused on Nigeria and may not relate to Kiambu County in Kenya
Gunga (2008)	Technology Adoption	“ The cooperative movement in Kenya and its potential for Enhancement of IC T Livelihood.”	ICT enable the reduction in the overall operation overheads through enhanced access to timely and reliable data, enhanced communications within the entire supply, value chain and knowledge management	Was undertaken in Kenya. Will need test the veracity of this findings in the context of dairy cooperatives in Kiambu county.

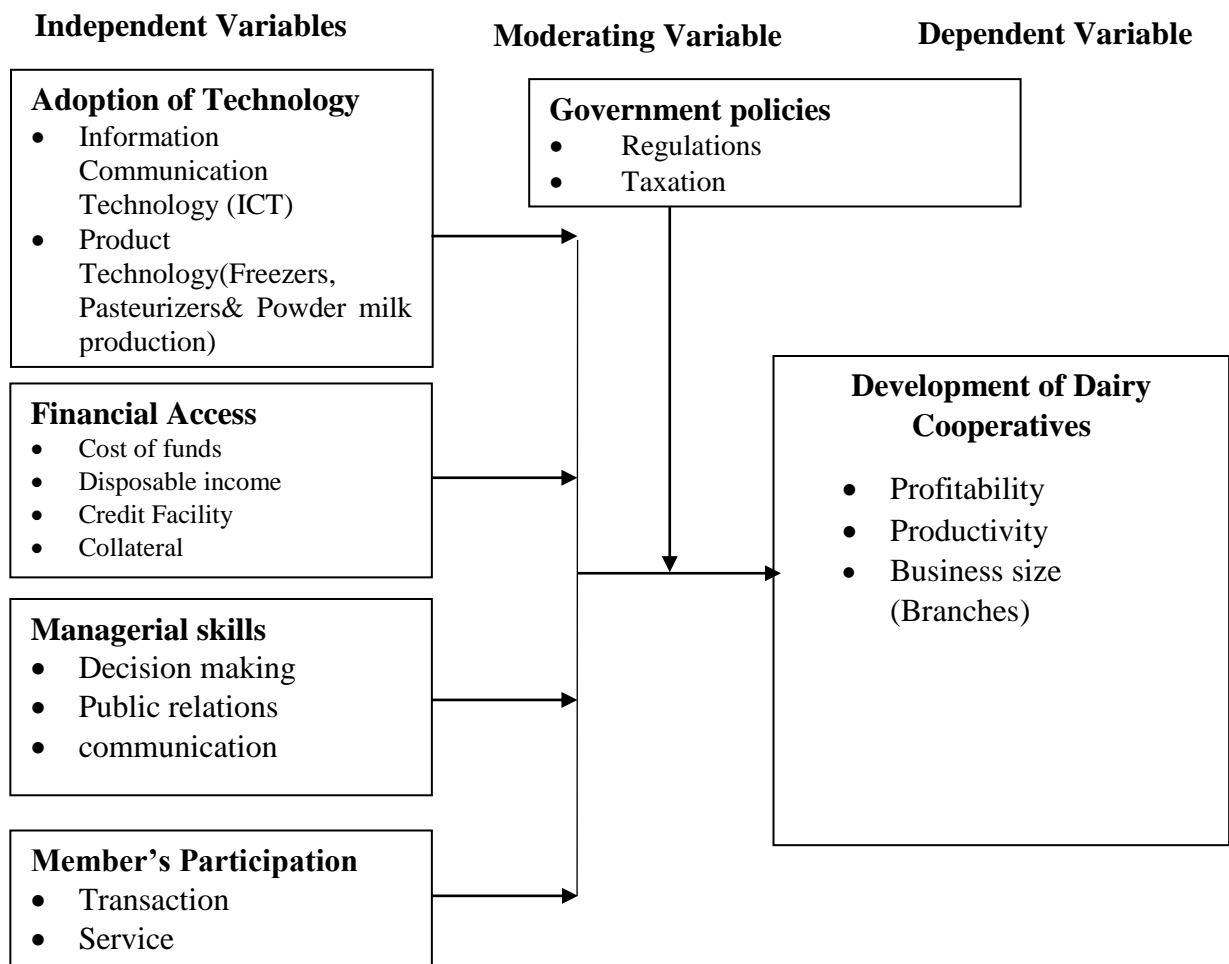
Isidore and Rand (2019)	Financial Access	“The relationship between the income and behavioural biases.”	established that more income was correlated with increased financial knowledge	Based on primary data sources in India and may not relate to contemporary issues in Kenya.
Umamaheswari and Kumar (2014)	Financial Access	“ On Coimbatore based salaried investors’ awareness, attitude, expectation, and satisfaction over their investments ”	found that income predicted investment decisions in the study area	Based on data from the salaried middle class of Coimbatore District, India. May not relate to this study.
Velmurugan, Selvam, and Nazar (2015)	Financial Access	“ an empirical analysis on perception of investors .”	Established that persons with higher income levels preferred to invest in less riskier environment and vice versa.	Was focused on Vellore city, Tamil Nadu and India and may not relate to this current study
Cherogony (2013)	Financial Access	“The effects of financial resource mobilization by Ainabkoi Rural Cooperative Societies in Ainabkoi Division Uasin Gishu County.”	Findings show that the success of implementation of development projects was pegged to available finances.	This study was not exhaustive as it missed to look at other major factors like the cost of obtaining finances and this underlines the importance of this current study.
Onugu, (2014)	Financial Access	“On the financial performance of cooperative societies in Enugu state Nigeria.”	Found out that the cost of financing is the main issue considered by organizations when deciding of the type of capital source to pursue for their development projects.	This study did not exhaust all aspects of cost of finance which contributes to the financial performance of cooperative societies at large.

Akhtar et al., (2012)	Financial Access	“On the connection between financial leverage and financial performance of the energy sector in Pakistan.”	organizations with inadequate investment opportunities often engage in insufficient projects where risks analysis is not easy thus the costs of financing are priced high	The study failed to look into the uncertainties associated with financial leverage and how they can be managed in order to determine its influence towards organizational development.
Hamisu (2010)	Managerial skills	“On time-management skills and academic performance of mature and traditional-entry university students.”	The provision of management skills among the employees is vital to new organization generation.	The study focused on universities. Differs from this study which focuses on dairy cooperatives.
Johnson (2008)	Managerial skills	“ on a missed opportunity for small farmers and land reform beneficiaries in South Africa”	Managerial skills were the chief influence in exerting control over activities and relationships within teams and organizations.	Focused on South Africa and may not expressly relate to Kiambu County in Kenya.
Avolio (2012)	Managerial skills	Strategy Implementation at GlaxoSmithKline	Leadership expertise affected successful management, and this was a key component of policy implementation.	It may not relate to dairy cooperatives in Kiambu county.
Riggio,(2005)	Managerial skills	“The Role of Informal Microfinance Institutions in Saving Mobilization, Investment and Poverty Reduction.”	Determined that due to capital constraints and family owned management styles, small to medium sized businesses contributed an overwhelming majority of the management skills problems affecting the many industries.	The study did not clearly determine the influence of managerial skills factors on the growth of organizations especially Cooperative societies.

Selvaraj (2000)	Members' Participation	"Cooperative in the New Millennium, for effective functioning of the cooperative movement t."	Found that free-thinking members are the pole of the cooperative.	Focused on India and may not expressly relate to Kiambu County in Kenya.
Clark (1991)	Members' Participation	"An effective strategy for securing sustainable participation of small farmers in rain fed areas."	Identified the elements essential for securing active participation of farmers' groups such as: ; minute identical group, auxiliary income generation activities, formal credit, group promoters, training to group members, group savings, ready access to extension service, participatory monitoring and evaluation; and lastly group self-sufficiency.	May not expressly relate to Kiambu County in Kenya.
Mukherjee (1997)	Members' Participation	"Participatory Appraisal of Natural Resources"	Observed that the level of participation tends to fluctuate with passage of time. Sometimes it remains at a low key and then takes off and/or dissipates	Focused on India and may not expressly relate to Kiambu County in Kenya.

## 2.5 Conceptual Framework

A conceptual framework is a diagrammatical research tool aimed at assisting the researcher to develop awareness and understanding of the situation under scrutiny and to communicate. The independent variables were examined in relation to how they are affected by the dependent variable. This study conceptualizes that the development of Dairy Cooperatives (dependent variable) is determined by Managerial Skills, financial Access, Members participation and Adoption of technology (the independent variables) as shown in Figure 2.1.



**Figure 2.1 Conceptual Framework**

*Source, Author (2020)*

### **2.5.1 Members' Participation and the Development of Cooperatives**

The various ways that a member participates in a cooperative includes attending the annual general meetings, serving on the various committees, involvement in recruitment of employees and the audit firm and lastly patronage (Osterberg&Nilson, 2009). This participation of members in governance of a cooperative is what differentiates cooperatives from other forms of businesses. Participation is a crucial indicator for the developing members in understanding and appreciating of the cooperative (Gray, Karaenzle& USDA, 1998). Extant studies submit that membership participation enthused by cooperative values is vital for co-operative Development and growth. Several authors have discoursed that co-operatives' development depends on members' sense of belonging, guarantee and link (Birchall, 2011; Mazzarol et al., 2011; Munkner, 2012). Munkner (2015) posit that 'co-operatives are worthy as their members create them'. Nonetheless association allegiance and commitment depend on cooperatives' capacity to meet members' requirements and demands.

### **2.5.2 Access to Finance**

Dairy Cooperatives credit has always been a chief contribution in the development of the Dairy sector. Rahji, 2000 posits that Credit is regarded as more than just another reserve such as land, labour, equipment and raw materials. A major reason for the weakening in the impact of Dairy Sector to the economy is the continuous lack of an official government credit strategy and the reluctance of financial establishments to take up dairy farming lending. With expanded Credit access, farmland size and production is greatly increased. A study by Olagunju, (2000) acknowledged that credit services as well as the use of agronomic capital and labor resources fast-track the embracing process and increase the scale of production.

### **2.5.3 Managerial Skills**

Hambrick and Mason (1984) defines management as referring to the practice of forecasting, forming, leading and monitoring the efforts of the organization members and of using all other organizational assets to accomplish definite organizational objectives. Veerakumaran (2006), views management as 'the powerful energy in cooperative activities that help in realizing concessions among participants, taking

into consideration both the needs and the interests of the members, the commercial objectives of the cooperative. For the smooth operation, a Cooperative needs good management to control its day-to-day and long-term undertakings through the administration. In a cooperative this administration is known as a management committee which is involved in the process of reaching consensus and then ensuring headway with the group's pronouncement. In this aspect management is a critical tool in the execution of strategies and actions which endlessly augment the actions of the cooperatives.

#### **2.5.4 Adoption of Technology**

This variable addressed the levels of both information technology and production technology as adopted by various Cooperatives in Kenya in their operations and service delivery as indicated by availability of the operating pasteurizing machines, point of sale platforms and an active online presence.

#### **2.5.5 Development of Dairy Cooperatives**

The study was guided by the relationship of dependent variable and the autonomous variables. The research targeted at establishing the connection between the reliant variable and the autonomous variables.

## **CHAPTER THREE**

### **RESEARCH METHODOLOGY**

#### **3.1. Introduction**

This chapter presents the methodology that was adopted by this study. This includes the research design, philosophy, population and sampling processes, and data collection methods as well as data analysis techniques.

#### **3.2 Research Design**

This is defined as “a framework for conducting a study that optimizes control over factors that could easily interfere with the validity of the study findings” (Burns, Grove, & Gray, 2015). This study used the descriptive survey design to establish factors affecting the development Dairy Cooperatives in Kenya with reference to Dairy Cooperatives in in Kiambu County. This design was used since it “determines and reports the way things are, describes data and characteristics of the population and phenomenon being studied.” This study is also built on this design since as Cooper and Schindler (2003) assert, “the descriptive study is the one that is concerned with finding out who, what, when, where and how.”

#### **3.3 Target Population**

A target population is “a group of individuals objects or items from which samples for measurement are taken” (Mugenda & Mugenda, 2003). The target population was 59,635 Dairy Cooperative members in Kiambu County (Kiambu County, 2018). This was partly done due to the fact that Kiambu dairy cooperatives lead in milk production in Kenya (Kenya Dairy Board, 2018). The sample population was 398 members. The targeted population of the study was collated from the various Sub-Counties as follows;

**Table 3.1 Target Population**

<b>Sub-County</b>	<b>Number of Members</b>
Githunguri, Gatundu (North & South)	17,000
Kiambu Town, Thika, Juja & Ruiru	5,235
Kiambaa	4,000
Limuru	9,600
Kabete & Kikuyu	10,800
Lari	13,600
<b>Total</b>	<b>59,635</b>

*Source: Kiambu County Records (2018)*

### **3.4 Sampling Design and Procedures**

Orodho (2003) defines sampling as “the process by which an analysis is carried out on the target population in order to find something about the population from which it was selected from.” Sampling is usually done so as help reduce the cost and time that would have otherwise been used to observe the entire population. Using stratified sampling techniques, this study sampled 398 persons from the target population of 59,635 using the simplified sampling formula stipulated by Taro Yamane (Yamane, 1967). The formula is:

$$n=N/1+N*(e)^2$$

Where:

n=the sample size

N= the population size

e=the acceptable sampling error (assumed at 0.05)

When fitted, the sample size for study is:  $n=59635/1+59635*(0.05)^2$

$n \approx 398$  respondents

The researcher got a list of members from the Dairy Cooperatives within the given Sub-Counties to pick-out the target populace.

The sample size is shown in the Table 3.2.

**Table 3.2 Sample Size**

<b>Sub-Counties</b>	<b>Number of Members</b>	<b>Sample Size</b>	<b>Portion of sample %</b>
Githunguri, Gatundu (North & South)	17,000	114	28%
Kiambu Town, Thika, Juja & Ruiru	5,235	35	9%
Kiambaa	4,000	27	7%
Limuru	9,600	66	16%
Kabete & Kikuyu	10,200	65	17%
Lari	13,600	93	23%
<b>Total</b>	<b>59,635</b>	<b>398</b>	<b>100%</b>

*Source: (Kenya Dairy Board, 2018)*

### **3.5 Data Collection Methods**

#### **3.5.1 Questionnaires**

According to Chandran (2004), questionnaires are used as method of data collection as they help to standardize data and the adoption of generalized information amongst any population. Their main advantage when used to collect data in a descriptive study is the ease and quickness one is able to obtain information without been seen as a threat. Questionnaires which contained open and closed-ended questions and also the likert-scale type of questions were administered by the interviewer to collect primary data on the factors affecting development of Dairy Cooperatives in Kenya. A list of dairy cooperative members from the various Cooperative in each sub-county was obtained from the Dairy Cooperatives to assist in identifying potential respondents. Ancillary data was collected from fiscal registers of the co-operative societies, internet sources and archives.

### **3.6 Data Analysis**

In the first level of analysis, the researcher used Quantitative and Qualitative data in this research study. As such, quantitative analysis was done using the descriptive statistics aided by the use of SPSS (Data analysis application) and Qualitative data analysis involved explanation of information obtained via discussions and explanations of the study findings. In this case, tests such as central tendency (mean),

frequencies, percentages and standard deviation were carried out. Correlation and regression analysis statistical method were used. The following regression model was applied in the analysis;

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \epsilon$$

Where;

**Y** = Development of Dairy Cooperatives  
(Dependent Variable)

**$\beta_0$**  = Constant Term

**$\beta_1, \beta_2, \beta_3, \beta_4$** , = Beta coefficients

**X1** = Adoption of technology

**X2** = Financial access

**X3** = Managerial Skills

**X4** = Members Participation

**$\epsilon$**  = Error Term

### **3.7 Research Quality**

Validity and reliability are characteristics that a questionnaire must have for it to produce useful results (Kothari, 2004). Validity, in this case, is when the questionnaire actually tests what it was intended for while reliability is the measurement of relevance. For the validity and reliability of the questionnaire to be established a test was carried out among 10 respondents who are not in the study to determine whether the questionnaire is actually able to meet its intended purpose. The researcher did a pilot test with members of Njabini Dairy Cooperative in Nyandarua County with the aim to ensure that the validity was achieved. The researcher conducted spot checks and supervisory visits to ensure that the research assistant is doing the right thing. He also checked the data for completeness.

Validity denotes “the degree of accuracy in capturing the intended information” (Mbwesa, 2006). A valid instrument measures the theory in question accurately. It is “the best available approximation to the truth or falsity of a given deduction” (Patton, 2002). The validity of the questionnaires were tested using content validity technique

where the questions were evaluated against the desired outcome to see how valid they were to the study.

Instrument reliability is defined as “the capacity of a research tool to dependably measure features of concern over time” (Mugenda & Mugenda, 2003). In this study, reliability was assessed by pre-testing the questionnaire. Cronbach Alpha ( $\alpha$ ), a reliability coefficient whose cut-off point is 0.7 (which signifies acceptable but also 0.5 sufficed) and above was applied in testing the internal consistency of research items.

### **3.8 Ethical Issues and Administration of Questionnaires**

Legal and ethical considerations are “measures for conduct that recognize and distinguish acceptable and unacceptable behavior” (Resnik & Borgia, 2011). The researcher obtained permission from the authority after explaining the intention of the study from Strathmore Business School. The researcher also sought permission from the respondents. The intention of the study was also explained to them. The respondents were similarly guaranteed of anonymity and the privacy of the material obtained. It was made explicitly clear that the information collected were used for academic purposes only. The questionnaires were managed by the researcher who also did a follow up to ensure the information was obtained from the respondents in good time. The respondents were given two days to give out their opinions about the problem under research.

## **CHAPTER FOUR**

### **RESEARCH FINDINGS AND DISCUSSION**

#### **4.1 Introduction**

In this chapter, the findings of the study are presented. These findings are prepared in line with the study objectives namely; to find out the effect of technology adoption on the development of dairy cooperatives; to evaluate the effect of financial access on the development of dairy cooperatives; to find out the how managerial skills affects the development of dairy cooperatives and finally to determine membership participation affect the development of dairy cooperatives in Kiambu County. The findings obtained are presented in the following discourse.

#### **4.2 Response Rate**

Out of the 398 respondents targeted, 334 participated. This makes a response rate of 83.9%; which was considered enough to represent the study. However, the reason for non-response was due to operational difficulties, time and cost restraints, and a lack of co-operation from respondents. These conclusions are presented in Table 4.1.

**Table 4.1 Response Rate**

<b>Sampled</b>	<b>Responded</b>	<b>Response Rate</b>
398	334	83.4%

Source: Author (2020)

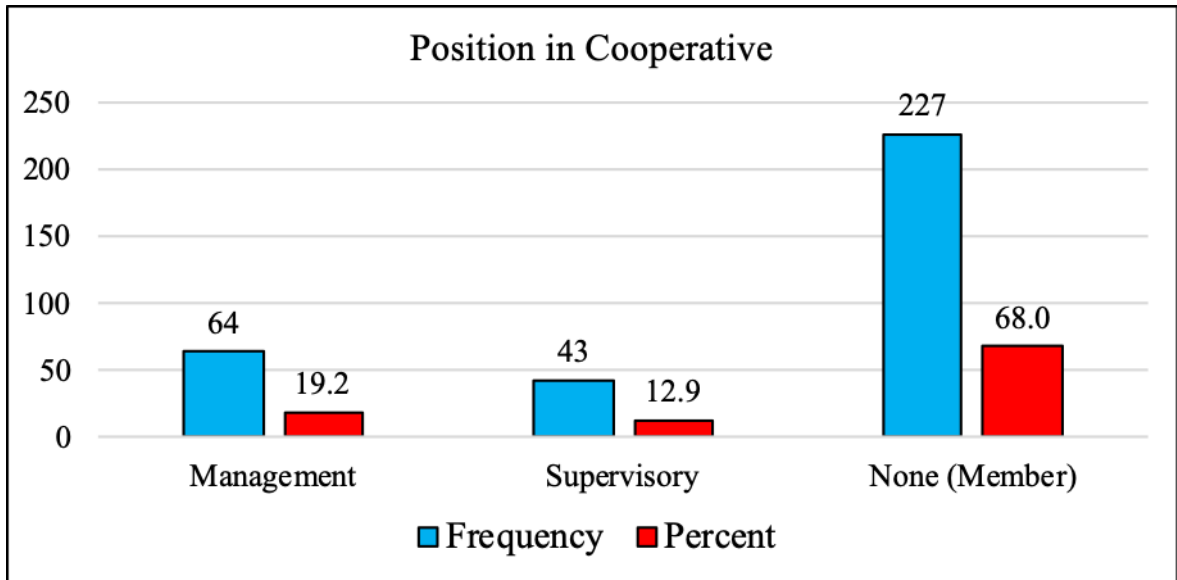
#### **4.3 Analysis of Demographic Data**

The researcher sought to investigate selected demographic characteristics concerning the study respondents.

##### **4.3.1 Position of Respondents in Cooperative**

The dairy cooperative members (respondents) were requested to specify their position in the cooperative and 68% (227) indicated they were just members. Those in managerial and supervisory positions followed at 19.2% and 12.9%. These findings

show that various categories of members of the dairy cooperatives participated in the study. This implies that diverse Cooperative membership tends to increase technology adoption, financial access, skills improvement, and reduced transaction costs in accessing inputs and output markets (Mojo et al., 2017). Since this was done proportionately, it was possible to obtain an all-rounded information about the subject under investigation. These findings are presented in Figure 4.1.

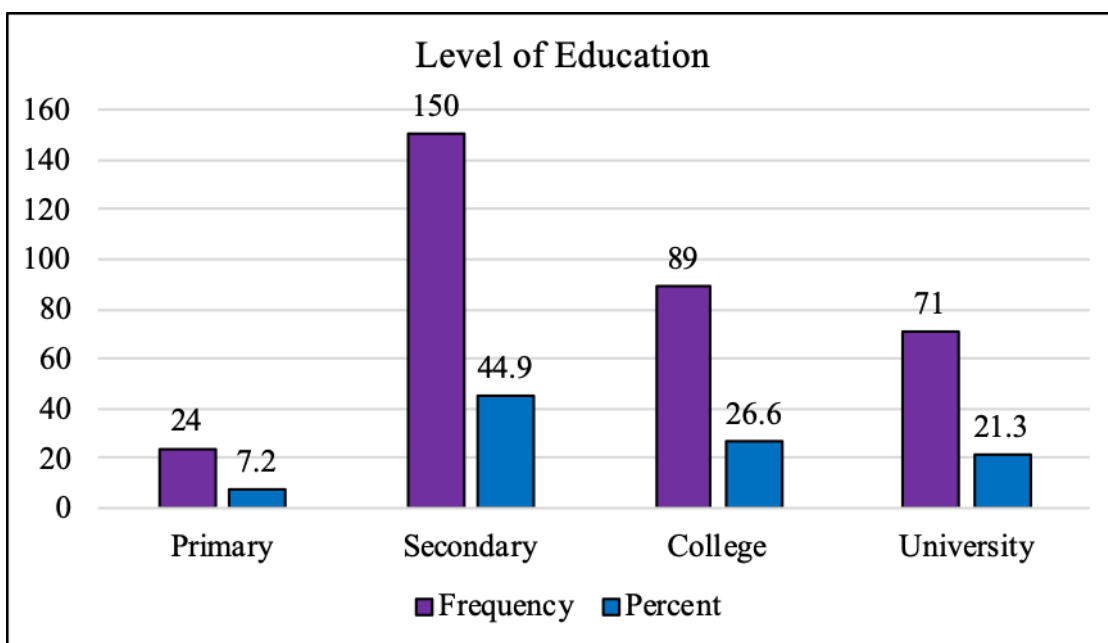


**Figure 4.1 Position in Cooperative**

Source: Author (2020)

#### 4.3.2 Education Levels of Respondents

The study wanted to determine the level of education of the dairy cooperatives members studied. Figure 4.2, demonstrates that most of the respondents, 44.9% had secondary level education. These were followed by slightly more than a quarter (26.6%) who had college level education and 21.3% who had university level qualifications. The least had primary level qualifications at 7.2%. These findings show that the respondents had sufficient education qualifications to make significant contributions to the study. This is because the level of education

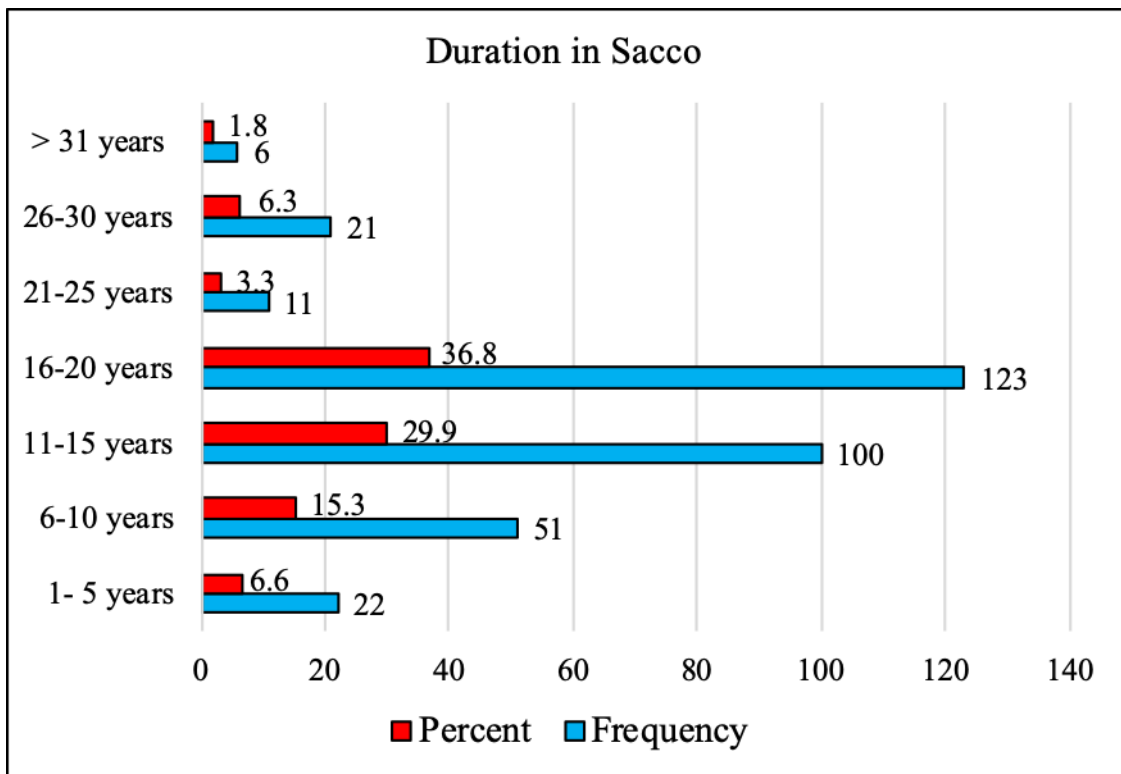


**Figure 4.2 Level of education**

Source: Author (2020)

#### **4.3.3 Duration in Dairy cooperatives**

The Dairy cooperative members (respondents) were asked to indicate the duration of time they had been in the dairy cooperatives. The majority, more than a third of the respondents (36.8%) had been with the dairy cooperatives for 16 to 20 years. These were followed by 29.9% who had been there for 11 to 15 years. All in all, the findings show that 78.1% had been in their dairy cooperatives for over 10 years. This shows that the respondents had been in the dairy cooperatives long enough to understand the factors affecting their development. These findings are shown in Figure 4.3.



**Figure 4.3 Duration in Dairy cooperatives**

Source: Author (2020)

#### 4.3.4 Sub-Counties of Respondents

The respondents were asked to indicate the sub-counties within Kiambu County that they came from. As shown in Table 4.2, most of them came from Githunguri Sub-County at 12.9% while the least came from Kikuyu Sub-County at 3.6%. Since all the sub-counties targeted in the study were represented, the findings obtained could paint a balanced picture about the subject under investigation.

**Table 4.2 Sub-Counties of Respondents**

<b>Sub-County</b>	<b>Frequency</b>	<b>Percent</b>
Githunguri	43	12.9
Gatundu South	41	12.3
Gatundu North	34	10.2
Kiambu Town	34	10.2
Lari	34	10.2
Limuru	33	9.9
Ruiru	31	9.3
Kabete	22	6.6
Kiambaa	22	6.6
Juja	15	4.5
Thika Town	13	3.9
Kikuyu	12	3.6
<b>Total</b>	<b>334</b>	<b>100</b>

Source: Author (2020)

#### **4.4 Technology Adoption**

The first objective of the study was to find out the effect of technology adoption on the development of dairy cooperatives in Kiambu County. The Data was gathered using likert-scale type statements and open ended questions. The resultant findings are presented in the below section.

##### **4.4.1 Technology Adoption according to Psychometric Scale Statements**

The respondents were presented with selected statement son the influence of technology adoption on the development of dairy cooperatives in Kiambu County. They were requested to specify their level of agreement with each statement on a 5-point scale as follows: 1=Strongly Disagree; 2=Disagree; 3=Not Sure; 4=Agree; 5=Strongly Agree. The agreed to four of the statements (weighed means of 4) and strongly agreed with one statement (Weighted mean of 5). In this regard, above half (53.3%) of the respondents were in agreement that the cooperative adopted technology in its processes. Another 51.8% agreed that the adopted technology had improved service delivery in the dairy Cooperative. This conforms to the Ministry of Co-operative Development and marketing findings in its (2008) report posits that ICT was essential tool for efficient operations of investments and that co-operatives should be encouraged to use this technology.

Also more than half (50.6%) agreed that the adoption of technology had given the dairy cooperative an economical advantage in the industry. This could enhance the development of the dairy cooperatives as posited by Mitchelle (2007) who posits that one of the factors accelerating the waning of a firm’s attractiveness is the inability to develop and assimilate technology strategy and business strategy. Close to half (46.1%) went on to agree that technology adoption spurred development of the dairy cooperative which agrees with Venansius (2014). Lastly, most of the respondents (62.6%) strongly approved that technology adoption value-added the communication with the dairy Cooperative Stakeholders. This agrees with the Gunga (2008) who posits that ICT plays a pivotal role in enhancing the communication processes of organizations. Thus it is apparent that technology adoption plays a crucial part in the development of dairy cooperatives.

**Table 4.3 Technology Adoption**

	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>Mean</b>
<b>Statement</b>	<b>%</b>	<b>%</b>	<b>%</b>	<b>%</b>	<b>%</b>	
a) Has the Cooperative adopted technology in its processes	6.3	6.9	6.9	53.3	26.6	4
b) Has the adopted technology improved service delivery in the Dairy Cooperative	3.9	6.6	4.2	51.8	33.5	4
c) Has the adoption of technology given the Dairy cooperative a competitive edge in the industry	3.6	5.7	6.6	50.6	33.5	4
d) Has technology adoption spurred development of the dairy cooperative	3.6	3.3	8.7	46.1	38.3	4
e) Does technology adoption improve the communication with the Dairy Cooperative stakeholders	0.0	0.3	0.3	36.8	62.6	5

N=334

Source: Author (2020)

#### **4.4.2 Technology Adoption according to Open-Ended Question**

The respondents were presented with the question, “in which other ways does technology adoption affect the development of dairy Cooperatives?” The findings show that the Dairy cooperatives had indeed adopted numerous technologies. These included modern ICT equipment to ensure prompt and efficient communication with members. They had also deployed information management systems to keep track of

various aspects of the dairy cooperatives such as members' subscriptions, loans, salaries, dividends, projects among others. This enhanced the success of the dairy cooperatives. In some instances though, dairy cooperatives were late in adopting modern technologies due to bureaucracies and inertia to change. This made some of the Dairy cooperatives inefficient. All in all, the level to which dairy cooperatives adopted new technologies affected their development.

#### **4.5 Managerial Skills and Leadership**

The study went on to investigate the influence of managerial skills and leadership on the development of the Dairy Cooperatives in Kiambu County. The findings obtained are presented in the following section.

##### **4.5.1 Managerial Skills and Leadership according to Psychometric Scale**

###### **Statements**

With weighted means of 5 for all statements, the respondents tended to strongly agree with all the statements presented to them. To begin with, the respondents strongly agreed that adoption of good management and leadership practices affected the development of the dairy Cooperative (63.5%). This is in line with Turner et al. (2001) who posit that good management was linked with the success of organizations. In this regard, it was pertinent to have management teams that could expertly direct their firms.

The respondents also strongly agreed that the quality of the employees recruited by the management Committee determined the development of the dairy Cooperative (65.0%). In this light, it was pertinent to have quality employees to enhance the achievement of the activities of the firm (Hamisu, 2010). By strongly agreeing (60.8%) the respondents also opined that the ability of the management to ensure equitable deployment and manipulation of human resource, financial resources, technological resources, and natural resources enhanced the development of the dairy cooperative. This agrees with Riggio (2005) who argues that managerial capacities to deploy the requisite resources could enhance the performance of organizations. This shows that deploying experience managers can have positive effect on the performance of dairy cooperatives. Lastly, the respondents strongly agreed (72.2%) that the experiences of the managers of the dairy Cooperative influenced their abilities

to match development project with available resources. This also agrees with Riggio (2005) who underlines the importance of experience in the success of an organization. It is thus evident that the success of dairy cooperatives was pegged to the quality of management and the leadership they offered.

**Table 4.4 Managerial Skills and Leadership**

	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	
<b>Statement</b>	<b>%</b>	<b>%</b>	<b>%</b>	<b>%</b>	<b>%</b>	<b>Mean</b>
a) Good management committee ensures proper management of Cooperative resources	0.0	0.3	3.3	39.2	57.2	5
b) The adoption of good management and leadership practices affect the development of the Dairy Cooperative	0.3	0.6	0.0	35.6	63.5	5
c) The quality of the employees recruited by the management Committee determines the development of the Dairy Cooperative	0.0	0.0	0.3	34.7	65.0	5
d) The ability of the management to ensure equitable deployment and manipulation of human resource, financial resources, technological resources, and natural resources enhances the development of the Dairy Cooperative	0.0	0.0	0.0	39.2	60.8	5
e) The experiences of the managers of the Dairy Cooperative influence their abilities to match development project with available resources	0.0	0.0	0.6	27.2	72.2	5
N=334						

Source: Author (2020)

#### **4.5.1 Managerial Skills and Leadership according to Open-Ended Questions**

The respondents were asked to explain other ways in which management skills and leadership affected the development of the Dairy cooperative. The findings show that the expertise of the management affected the quality of management decisions. It also affected the level to which these decisions could be implemented. Good leadership also contributed to the deployment of competent employees. It also affected efficiency

in resource utilization; which agrees with Turner et al. (2001) who was of the same opinion. Managerial skills also affected the quality of relationships between the dairy cooperatives and members. It was thus evident that there was undeniable linked between managerial skills and leadership and the development of dairy cooperatives.

#### **4.6 Access to Finance**

The third objective of the study was to evaluate the effect of financial access on the development of dairy cooperatives. The findings are presented in the following section.

##### **4.6.1 Access to Finance according to Psychometric Scale Statements**

The respondents agreed to two of the statements presented to them. To begin with, they agreed that net profit of the Cooperative and other sources of funds like government grants influenced the development of the dairy Cooperative (50.6%). These findings agree with Glaeser et al. (2002) who shows the importance of profits and financial resources in the development of an organization. The income levels of Cooperatives also affected their decision to invest in various development options, 60.2% agreed with this sentiment. This also agrees with Glaeser et al. (2002) who is of the view that organizations should consider the resources at their disposal before making investment decisions.

The respondents strongly agreed with the following statements. The success of the development projects of dairy Cooperative was influenced by their financial plans, strongly agree was at 58.4%. This aligns with the Umamaheswari and Kumar (2014) who was of the same opinion. In this light, the financial resources and plans that cooperatives had, influenced their investment decisions and success of their projects. Also the cost of funds to the Cooperatives influenced their risk averseness and the kind of investment decisions they made, strongly agree at 69.8%. This agrees with Onugu, (2014) who posits that in Enugu state Nigeria, the cost of financing is the main issue considered by organizations when deciding of any type of capital source to pursue for their development projects. As such, the abilities to service loans from the proposed projects affected the investment decisions of dairy cooperatives.

Further, the income levels of the Cooperative members influenced the amounts available to the Cooperative, strongly agree (75.1%). This is in line with Velmurugan et al. (2015) income levels was a key determinant of investment decisions and thus development and growth. The more members were able to raise resources, they more there were available resources to undertake projects. Lastly, the respondents strongly agreed (76.9%) that the ability of cooperative to provide collateral for capital funding influenced the success of the development projects undertaken. This shows that the assets of organizations affected their development processes as stipulated by Glaeser et al. (2002).

**Table 4.5 Access to Finance**

<b>Statement</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>Mean</b>
	<b>%</b>	<b>%</b>	<b>%</b>	<b>%</b>	<b>%</b>	
a) Net profit of the Cooperative and other sources of funds like government grants influences the development of the Dairy Cooperative	0.3	0.3	0.6	48.2	50.6	4
b) The success of the development projects of Dairy Cooperative is influenced by their financial plans	0.3	0.3	1.2	39.8	58.4	5
c) The income levels of Cooperatives affects their decision to invest in various development options	0.6	0.6	7.5	31.1	60.2	4
d) The cost of funds to the Cooperatives influences their risk averseness and the kind of investment decisions they make	0.3	0.6	0.3	29.0	69.8	5
e) The income levels of the Cooperative members influences the amounts available to the Cooperative	0.0	0.0	0.6	24.3	75.1	5
f) The ability of cooperative to provide collateral for capital funding influences the success of the development projects undertaken	0.0	0.0	0.0	23.1	76.9	5

N=334

Source: Author (2020)

#### **4.6.2 Access to Finance according to Open-Ended Questions**

The respondents were presented with the question, “in which other ways does access to finance affect the development of the Dairy cooperative?” The findings show that

finances determined the quality and size of projects undertaken by the cooperatives. If the cooperative did not have enough finances, it could not balance between member dividends and investment in worthwhile projects that could generate more capital for the firm. This challenged the profitability of the firms. Sufficient members' contributions availed enough revenue that could be used to adequately develop the cooperative. Also, if the cooperative could borrow cheaply from financial institutions Onugu (2014), it was possible to undertake quality projects and develop itself more.

#### **4.7 Members' Participation**

The study went on to explore the influence of members' participation on the development of Dairy Cooperatives in Kiambu County. The findings are presented in the subsequent section.

##### **4.7.1 Members' Participation according to Psychometric Scale Statements**

While most of the respondents agreed with the first statement presented to them (Weighted mean of 4), they strongly agreed with all other statements (Weighted means of 5). In this light, above half of all the respondents agreed (52.7%) that the participation of members was vital before investments are made. Secondly, 66.2% of the respondents strongly agreed that members had a voice in the Cooperative and its activities and that this affected its development projects. This agrees with the Thomas and Charles (1998) who underlines the importance of member participation in the implementation of projects in organizations. It was thus vital for members to be involved in the implementation of projects.

Most of the respondents also strongly agreed (63.5%) that considerations about the financial expectations of members had to be made before development decisions are made. These findings corroborate those of Umamaheswari and Kumar (2014) who point out that members' opinions as well as their expectations should be sought before making investment decisions. Almost all of the respondents (99.1%) strongly agreed that members were encouraged to transact/consume products offered by the Cooperative. This was pivotal towards achievement of the development goals of the firm as envisaged by Vishwanathan (1994). Lastly, most of the respondents strongly agreed (70.1%) that if members did not support an investment project, its sustainability was not guaranteed. This is in line with the findings of Francesconi and

Wouterse (2011) who points out that members participation affected the sustainability of projects and vice versa.

**Table 4.6 Members’ Participation**

<b>Statement</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>Mean</b>
	<b>%</b>	<b>%</b>	<b>%</b>	<b>%</b>	<b>%</b>	
a) The participation of members is vital before investments are made.	0.9	0.9	16.5	29.0	52.7	4
b) Members have a voice in the Cooperative and its activities and affect its development projects	0.0	0.0	4.5	29.3	66.2	5
c) Considerations about the financial expectations of members has to be made before development decisions are made	0.0	0.0	6.3	30.2	63.5	5
d) Members are encouraged to transact/consume products offered by the Cooperative	0.0	0.0	0.0	0.9	99.1	5
e) If members do not support an investment project, its sustainability is not be guaranteed	0.3	0.3	0.6	28.7	70.1	5

N=334

Source: Author (2020)

#### **4.7.2 Members’ Participation according to Open-Ended Questions**

When presented with the question, “in which other ways does members’ participation affect the development of the Dairy Cooperative?” the respondents made various suggestions. Members’ participation increased the pool of ideas at the disposal of the cooperative. This influenced the quality of decision making. Involving members in project decisions led to increased buy-in into the projects as envisaged by Francesconi and Wouterse (2011). This further affected the success of these projects. Some members were also able to volunteer their expertise and this augmented the overall performance of the cooperative. The willingness of members to adopt the projects of the firm was also increased if they were involved in making project decisions. This further buttressed the development of the cooperative as posited by Vishwanathan (1994).

## **4.8 Development of Dairy Cooperatives**

The study went on to investigate the extent of development of Dairy Cooperatives in Kiambu County. The findings are presented in the ensuing sections.

### **4.8.1 Development of Dairy Cooperatives according to Psychometric Scale**

#### **Statements**

Regarding the development of dairy cooperatives mixed results were obtained with means ranging from 2 (disagree) to 5 (strongly agree) obtained. To begin with, Most of the respondents strongly agreed (66.2%) that there were instances in which the high cost of finance stalled development projects before conclusion. This is in line with Henry and Schimmel (2011) who points out that high cost affected the success of organizations'. Majority of the respondents also strongly approved (63.2%) that the Dairy Cooperative faced management related challenges in implementing development projects. Also 60.2% strongly agreed that sometimes, technology apathy affected the development of the Dairy Cooperatives. This corroborates the findings of Develtere, et al. (2008) who posits that managerial problems affected the success of Dairy cooperatives.

Almost half (49.1%) of the respondents agreed that their technology adoption was usually in time in-order to be competitive. Another close to a third (35.6%) which the highest number agreed that their stakeholders/members were usually satisfied with the development projects they undertook. This could lead to further support and success of the projects as posited by of Francesconi and Wouterse (2011). Another close to half (49.4%) agreed that high costs of technology hardware and software affected the development of the Dairy Cooperative.

When asked if their development projects were usually completed within the estimated budget costs, most of the respondents (35.6%) said that they were not sure. This was an indication of success in the implementation of the projects since timeliness was a key indicator of the success in projects (Hamisu, 2010). Also, most of the respondents pointed out that they were not sure (39.5%) that their development projects usually yielded the desired returns. This is in line with Avolio (2012) who posits that the success of projects is pegged on their ability to realize the expected outcomes. Lastly, more than half of the respondents (52.7%) disagreed that there was

evidence that their development projects were sustainable because they are undertaken based on quality market research. This shows that often, projects were undertaken without prior research on their suitability.

**Table 4.7 Development of Dairy Cooperatives**

<b>Statement</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>Mean</b>
	<b>%</b>	<b>%</b>	<b>%</b>	<b>%</b>	<b>%</b>	
a) Our technology adoption is usually in time in-order to be competitive	3.3	3.9	14.1	29.6	49.1	4
b) Our development projects are usually completed within the estimated budget costs	5.4	16.2	35.6	22.8	20.1	3
c) Our stakeholders/Members are usually satisfied with the development projects we undertake	6.6	16.2	11.4	30.2	35.6	4
d) Our development projects usually yield the desired returns	25.4	39.5	3.3	16.5	15.3	3
e) There is evidence that our development projects are sustainable because they are undertaken based on quality market research	26.0	52.7	0.9	13.5	6.9	2
f) There are instances in which the high cost of finance stall development projects before conclusion	0.0	0.3	3.3	30.2	66.2	5
g) The Cooperative faces management related challenges in implementing development projects	0.0	0.3	2.7	33.8	63.2	5
h) Sometimes technology apathy affect the development of the Dairy Cooperative	0.0	0.3	6.3	33.2	60.2	5
i) High cost of technology hardware and software affect the development of the Dairy Cooperative.	0.6	0.9	20.1	29.0	49.4	4

N=334

Source: Author (2020)

#### **4.8.2 Development of Dairy Cooperatives according to Open-Ended Questions**

The responders were presented with the question, “in which other ways can you rate the success of the development of the Dairy Cooperative?” The responses obtained show that the performances of cooperatives were very divergent. While some cooperatives were doing well by expanding their client bases and opening new

branches, other were not doing so well. This was attributable to market forces such as competition as well as internal challenges in the cooperative. If the cooperative was poorly managed, there efficiency was compromised. Loss of resources through corruption could also set in, leading to poor development. This agrees Mwakajumulo (2011) as well as Maghimbi (2010) who posit that poor management led to embezzlement of funds. It was thus pertinent to have managers with high integrity.

The respondents were also presented with the question, “In which ways can the development of Dairy Cooperatives be enhanced?” The responses obtained show that there were various ways in which this could be achieved. This included employing competent and experienced managers as recommended by Turner et al. (2001). Training was also necessary so as to enhance the capacity of the employees as posited by Clark (1991). There was need to carry out thorough research before starting projects so as to understand their riskiness and put in place the requisite strategies to ensure that their success was ensured. Partnerships with microcredit was also recommended since it could avail low-cost credit. Member participation should also be strengthened and embedded in all management processes of the Saccos so as to enhance their support of projects.

#### **4.9 Correlation Analysis**

Pearson correlation shows that there was statistical significant relationship between technology adoption ( $r=.646$ ,  $p<0.001$ ); managerial skills & leadership ( $r=.156$ ,  $p<0.001$ ); access to finance ( $r=.317$ ,  $p<0.001$ ) and; member's participation ( $r=.398$ ,  $p<0.001$ ); and development of dairy cooperatives. These findings show that technology adoption showed the strongest relationship with development of dairy cooperatives. This was followed by member’s participation, access to finance, and managerial skills and leadership in that order. Table 4.8 Pearson Correlation Analysis

**Table 4.8 Pearson Correlation**

		Correlations				
		Technology Adoption	Managerial Skills & Leadership	Access to Finance	Member's Participation	Development of Dairy Cooperatives
	Sig. (2-tailed)	.000	.213	.771		
Development of Dairy Cooperatives	Pearson Correlation	.646**	.156**	.317**	.398**	1
	Sig. (2-tailed)	.000	.004	.000	.000	

\*\* . Correlation is significant at the 0.01 level (2-tailed).

N=334

Source: Author (2020)

#### 4.10 Multivariate Regression Analysis

Multiple Regression analysis was carried out to find out the level to which the dependent variable (DV) could be explained by the independent variables (IVs).

##### 4.10.1 Model Summary

Table 4.19 shows the model summary. In the study model, the correlation coefficients R for regression between the IVs and DV had a value of 0.673. This shows that 67.3% of the variability in the regression model can be explained by the data used in this study. Further, the coefficient of determination R<sup>2</sup> in the model was 0.453. This implies that 45.3% of the variance in development of dairy cooperatives can be explained by the independent variables.

**Table 4.9 Model Summary**

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.673 <sup>a</sup>	.453	.446	1.00889

a. Predictors: (Constant), Member's Participation, Access to Finance, Managerial Skills & Leadership , Technology Adoption

Source: Author (2020)

##### 4.10.2 Analysis of Variance

As shown in Table 4.20, the IVs statistically significantly predict the DV,  $F = 68.052$ ,  $p < 0.05$ . This shows that the regression model was a good fit for the data.

**Table 4.10 Analysis of Variance**

ANOVA <sup>b</sup>						
Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	277.068	4	69.267	68.052	.000 <sup>a</sup>
	Residual	334.875	329	1.018		
	Total	611.943	333			

a. Predictors: (Constant), Member's Participation, Access to Finance, Managerial Skills & Leadership , Technology Adoption

b. Dependent Variable: Development of Dairy Cooperatives

Source: Author (2020)

### 4.10.3 Regression Coefficients

The study went on to fit the regression coefficients obtained into the study regression model. Under the section on coefficients, significant t-test values ( $p < 0.05$ ) were obtained for each of the four independent variables (technology adoption,  $t = 10.670$ ,  $\beta = 0.541$ ,  $p < 0.05$ ; managerial skills & leadership,  $t = 1.819$ ,  $\beta = 0.092$ ,  $p < 0.05$ ; access to finance,  $t = 3.594$ ,  $\beta = 0.184$ ,  $p < 0.05$  and; member's participation,  $t = 3.125$ ,  $\beta = 0.148$ ,  $p < 0.05$ ). This shows that all the variables can be fitted in the regression model adopted by this study.

The model was:

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \varepsilon$$

Where;

Y = Development of Dairy Cooperatives (Dependent Variable)

$\beta_0$  = Constant Term

$\beta_1, \beta_2, \beta_3, \beta_4$ , = Beta coefficients

X1 = Adoption of technology

X2 = Financial access

X3 = Managerial Skills

X4 = Members Participation

$\varepsilon$  = Error Term

In this regard, the fitted model using the unstandardized coefficients was:

$$\text{Development of Dairy Cooperatives} = 2.208 + (0.540 * \text{Technology Adoption}) + (0.088 * \text{Managerial Skills \& Leadership}) + (0.225 * \text{Access to Finance}) + (0.145 * \text{Member's Participation}) + 0.273.$$

The significant Standardized Beta Coefficients show that enhancing Technology Adoption, Managerial Skills & Leadership, Access to Finance and Member's Participation by 1 unit would lead to Development of Dairy Cooperatives by 0.541, 0.092, 0.184 and 0.148 units respectively.

**Table 4.11 Coefficients**

Model	Coefficients <sup>a</sup>			t	Sig.
	Unstandardized Coefficients		Standardized Coefficients		
	B	Std. Error	Beta		
(Constant)	0.745	0.273		2.732	0.007
Technology Adoption	0.54	0.051	0.541	10.67	0.000
1 Managerial Skills & Leadership	0.088	0.048	0.092	1.819	0.070
Access to Finance	0.225	0.063	0.184	3.594	0.000
Member's Participation	0.145	0.046	0.148	3.125	0.002

a. Dependent Variable: Development of Dairy Cooperatives

Source: Author (2020)

## **CHAPTER FIVE**

### **DSCUSSION, CONCLUSION AND RECOMMENDATIONS**

#### **5.1 Introduction**

This chapter discusses summary and the major findings of the entire study. It also presents the study's conclusions. Lastly, recommendations are presented. Areas for further study are also identified and presented.

#### **5.2 Summary of the Findings**

##### **5.2.1 Effect of Technology on the development of Dairy Cooperatives in Kiambu County**

The first objective of the study was to find out the effect of technology adoption on the development of dairy cooperatives in Kiambu County. Data was put together using likert-scale type statements and open ended questions. According to the findings obtained using 5 point likert-scale statements show above half (53.3%) of the respondents agreed that the cooperative adopted technology in its processes. Another 51.8% agreed that the adopted technology had improved service delivery in the Dairy Cooperative. Also more than half (50.6%) agreed that the adoption of technology had given the Dairy cooperative an economical advantage in the industry. Close to half (46.1%) went on to agree that technology adoption spurred development of the dairy cooperative. Lastly, most of the respondents (62.6%) strongly agreed that technology adoption enhanced the communication with the Dairy Cooperative Stakeholders.

The findings of this study were in line with a study done by Cheruiyot, (2016) on effect of technology adoption on organizational performance of dairy societies in Uasin-gishu County, Kenya. The study found that financial information system technologies adoption, information communication technology adoption and Product Processing technologies adoption had significant and positive effect on performance of dairy societies.

### **5.2.2 Effects of Managerial skills and Leadership on the development of Dairy cooperatives in Kiambu County**

When asked to explain other ways in which management skills and leadership affected the development of the Dairy cooperative, the respondents show that the expertise of the management affected the quality of management decisions. It also affected the level to which these decisions could be implemented. Good leadership also contributed to the deployment of competent employees. It also affected efficiency in resource utilization. Managerial skills also affected the quality of relationships between the dairy cooperatives and members. It was thus evident that there was undeniable linked between managerial skills and leadership and the development of dairy cooperatives.

The study went on to investigate the influence of managerial skills and leadership on the development of the Dairy Cooperatives in Kiambu County. The respondents strongly agreed that adoption of good management and leadership practices affected the development of the Dairy Cooperative (63.5%). They also strongly agreed that the quality of the employees recruited by the management Committee determined the development of the Dairy Cooperative (65.0%). By strongly agreeing (60.8%) the respondents also opined that the ability of the management to ensure equitable deployment and manipulation of human resource, financial resources, technological resources, and natural resources enhanced the development of the Dairy Cooperative. Lastly, the respondents strongly agreed (72.2%) that the experiences of the managers of the Dairy Cooperative influenced their abilities to match development project with available resources.

When asked to explain other ways in which management skills and leadership affected the development of the Dairy cooperative, the respondents show that the expertise of the management affected the quality of management decisions. It also affected the level to which these decisions could be implemented. Good leadership also contributed to the deployment of competent employees. It also affected efficiency in resource utilization; which agrees with Turner et al. (2001) who was of the same opinion. Managerial skills also affected the quality of relationships between the dairy cooperatives and members. It was thus evident that there was undeniable linked between managerial skills and leadership and the development of dairy cooperatives.

### **5.2.3 Effect of financial access on the development of the Dairy Cooperatives in Kiambu County**

The third objective of the study was to evaluate the effect of financial access on the development of dairy cooperatives. The responses agreed that net profit of the Cooperative and other sources of funds like government grants influenced the development of the Dairy Cooperative (50.6%). The income levels of Cooperatives also affected their decision to invest in various development options, agree at 60.2%. Further, the respondents strongly agreed (58.4%) that the success of the development projects of Dairy Cooperative was influenced by their financial plans. Also the cost of funds to the Cooperatives influenced their risk averseness and the kind of investment decisions they made, strongly agree at 69.8%. Further, the income levels of the Cooperative members influenced the amounts available to the Cooperative, strongly agree (75.1%). Lastly, the respondents strongly agreed (76.9%) that the ability of cooperative to provide collateral for capital funding influenced the success of the development projects undertaken.

The respondents asked to explain the other ways in which access to finance affected the development of the Dairy cooperative. The findings show that finances determined the quality and size of projects undertaken by the cooperatives. This findings is in line with Gagliardi, (2009) on how financial availability influences the growth of Cooperatives. If the cooperative did not have enough finances, it could not balance between member dividends and investment in worthwhile projects that could generate more capital for the firm. This challenged the profitability of the firms. Sufficient members' contributions availed enough revenue that could be used to adequately develop the cooperative. Also, if the cooperative could borrow cheaply from financial institutions, it was possible to undertake quality projects and develop itself more.

### **5.2.4 The Influence of members' participation on the development of Dairy Cooperatives in Kiambu County**

The study went on to examine the influence of members' participation on the development of Dairy Cooperatives in Kiambu County. Above half of the respondents agreed (52.7%) that the participation of members was vital before investments are

made. Secondly, 66.2% of the respondents strongly agreed that members had a voice in the Cooperative and its activities and that this affected its development projects. Most of the respondents also strongly agreed (63.5%) that considerations about the financial expectations of members had to be made before development decisions are made. Almost all of the respondents (99.1%) strongly agreed that members were encouraged to transact/consume products offered by the Cooperative. Lastly, most of the respondents strongly agreed (70.1%) that if members did not support an investment project, its sustainability was not guaranteed.

When presented with the question, “in which other ways does members’ participation affect the development of the Dairy Cooperative?” the respondents made various suggestions. Members’ participation increased the pool of ideas at the disposal of the cooperative. This influenced the quality of decision making. Involving members in project decisions led to increased buy in into the projects. This further affected the success of these projects. Some members were also able to volunteer their expertise and this augmented the overall performance of the cooperative. The willingness of members to adopt the projects of the firm was also increased if they were involved in making project decisions. This further buttressed the development of the cooperative.

The study went on to investigate the extent of development of Dairy Cooperatives in Kiambu County. Mixed results were obtained with means ranging from 2 (disagree) to 5 (strongly agree) obtained. To being with, Most of the Dairy Cooperative members interviewed strongly agreed (66.2%) that there were instances in which the high cost of finance stalled development projects before conclusion. Majority of the respondents also strongly approved (63.2%) that the Dairy Cooperative faced administration related challenges in implementing development projects. Also 60.2% strongly agreed that sometimes, technology apathy affected the development of the Dairy Cooperatives.

Almost half (49.1%) of the Dairy Cooperative Members (respondents) agreed that their technology implementation was usually in time in-order to be competitive. Another close to a third (35.6%) which the highest number agreed that their stakeholders/Members were usually satisfied with the development projects they undertook. Another close to half (49.4%) agreed that high costs of technology

hardware and software affected the development of the Dairy Cooperative. When asked if their development projects were usually completed within the estimated budget costs, most of the respondents (35.6%) said that they were not sure. Also, most of the respondents pointed out that they were not sure (39.5%) that their development projects usually yielded the desired returns. Lastly, more than half of the respondents (52.7%) disagreed that there was evidence that their development projects were sustainable because they are undertaken based on quality market research. This shows that often, projects were undertaken without prior research on their suitability.

To the question, “in which other ways does members’ participation affects the development of the Dairy Cooperative?” the respondents made various suggestions. Members’ participation increased the pool of ideas at the disposal of the cooperative. The findings were in line with Mojo et al., (2017) who posited that diverse Cooperative membership tends to increase technology adoption, financial access, skills improvement, and reduced transaction costs in accessing inputs and output markets. This influenced the quality of decision making. Involving members in project decisions led to increased buy in into the projects. This further affected the success of these projects. Some members were also able to volunteer their expertise and this augmented the overall performance of the cooperative. The willingness of members to adopt the projects of the firm was also increased if they were involved in making project decisions. This further buttressed the development of the cooperative.

### **5.3 Conclusion**

The factors under investigation have significant influences on development of dairy cooperatives. This is evidenced by positive and statistically significant relationship between technology adoption ( $r=.646$ ,  $p<0.001$ ); managerial skills & leadership ( $r=.156$ ,  $p<0.001$ ); access to finance ( $r=.317$ ,  $p<0.001$ ) and; member's participation ( $r=.398$ ,  $p<0.001$ ); and development of dairy cooperatives. These findings show that technology adoption showed the strongest relationship with development of dairy cooperatives. This was followed by member’s participation, access to finance, and managerial skills and leadership in that order. These findings are corroborated by results from multivariate regression analysis that shows that all the IVs statistically significantly predict the DV,  $F=68.052$ ,  $p <0.05$ . These findings lead to the conclusions that the kind of managerial skills and leadership in dairy cooperatives

affected their development. Access to finance also affected the level to which cooperatives funded their development activities. Affordable financing and increased member subscriptions affected the success of projects. Increasing members' participation would also increase their buy in of the projects of the dairy cooperatives; augmenting their sustainability. This would go on to enhance their development.

## **5.4 Recommendations**

Anchored on the theoretical literature, empirical assessment and the research outcomes, the following commendations were suggested;

### **5.4.1 Practice Recommendations**

There is a need for dairy Cooperatives to have robust management teams staffed with highly competent and experienced managers. The integrity of the firms should be established and regularly assessed to avoid corruption and mismanagement of the finances. Training is also necessary so as to enhance the capacity of managers and employees. This could be done in-house or sponsored in institutions of learning. There is also a need to carry out thorough research before starting projects so as to understand their riskiness and put in place the requisite strategies to ensure that their success and contribution to the development of the Dairy Cooperative. Partnerships with microcredit is also recommended since it could avail low-cost credit. Member participation should also be strengthened and embedded in all management processes of the Dairy Cooperatives so as to enhance their support of projects. Regular monitoring and evaluation was recommended so as to come up with strategies for correcting deviations from predetermined development objectives in the dairy cooperatives.

### **5.4.2 Policy Recommendations**

The study recommends the need for policies to be in place to strengthen research on the challenges facing Dairy Cooperatives development. Policies should also be put in place to create a favorable environment for technology adoption. Policies for enhancing ease in access of Finance put in place for financing of Dairy Cooperatives development projects. The constitutions of the Dairy Cooperatives should be revised and member participation strengthened by a policy.

## **5.5 Recommendations for Further Research**

From the foregoing results from the research there is a need to do a comparative studies among other Dairy cooperatives in other counties neighboring Kiambu so as to assess the kind of results from the other regions in the Country. An In-depth research using other investigation approaches such as Key Informant Interviews on each of the study variables is also recommendable so as to pin point the most important variables from the set and finally to establish the intervening influences of government policies on the development of Dairy cooperatives in the county. This would help to align policies, funding, research and all other interventions geared to supporting the sector are well thought out.

## **5.6 Limitations of the study**

The study faced a few limitations among them; The Global pandemic of Covid 19, limited literacy levels among some respondents, suspicion which led to some of the farmers being reluctant to give information despite reassurance that the study was confidential. Some farmers flatly refused to cooperate absolutely arguing that the information may be used by rival Dairy Cooperatives.

### **5.6.1 Cooperation from the Respondent**

Some respondents were uncooperative by procrastinating sessions and inaccurate provision of information. To mitigate this limitation, the researcher assured the respondents that the information sought is for academic purposes. Furthermore, enough time was given to the respondents to fill in the questionnaires.

### **5.6.2 Confidentiality**

Fear of the information obtained being misused; losing confidentiality which could cost their Dairy Cooperative Society in terms of earnings hindered some of the respondents from answering the research tools. To overcome this limitation the researcher provided a letter of research from the Strathmore Business School. The researcher also promised that if the information could not be treated confidentially, they were held answerable.

### **5.6.3 Corona Virus (COVID 19) Global Pandemic**

The emergence of the above pandemic globally curtailed movement and gatherings across the globe and the County for that matter. This greatly affected the researcher's movement and interactions across the county during data collection while also stretching the budget due to COVID 19 protocols that needed to be adhered to. The researcher followed guidelines from the government, local authorities and the school on appropriate actions to follow so as not to endanger his health and the health of the assistants and others in the community. All this summed pushed up the budget of the research but it was necessary for the researcher and the community at large

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## APPENDICES

### APPENDIX I: LETTER OF INTRODUCTION

Dear Respondent,

I am a student pursuing a Masters of Management in Agribusiness (MMA) degree from Strathmore University Business School. In fulfillment of my degree requirements I am required to conduct a research study, thus I am undertaking a study on **factors affecting development of Dairy Cooperatives in Kenya: a case study of Kiambu County.**

The responses collected in this study will be used for academic purposes only and will be treated with the utmost confidentiality required.

Thank you.

Yours Sincerely,

Mugwe Peter Githinji

Student Registration: 102805

MMA 2017

Strathmore University Business School

## APPENDIX II QUESTIONNAIRE

The questionnaire is aimed at seeking information about factors affecting the development of Dairy Cooperatives in Kenya with reference to Dairy Cooperatives in Kiambu County. Kindly answer the questions by ticking or filling in the spaces provided. Your participation is on voluntary basis, and all information provided will be held confidentially and only used for purposes of this study.

### A: Background Information

1) Do you hold any position in this Cooperative?

Management [ ] Supervisory [ ] None [ ]

2) For how long have you associated with this Cooperative (in years)?

1-5 years [ ] 6-10 years [ ] 11-15 years [ ] 16-20 years [ ]

21-25 years [ ] 25-30 years [ ] 31 years and above [ ]

3) Level of Education

Primary [ ] Secondary [ ] College [ ] University [ ]

4) Which sub-County do you come from? .....

### B: Technology Adoption

5) This section sets out to investigate the influence of technology adoption on the development of Dairy cooperatives in Kiambu County. Please rate your level of agreement with the following statements on a scale of 1=Strongly Disagree; 2=Disagree; 3=Not Sure; 4=Agree; 5=Strongly Agree

Statement	Likert-Scale				
	1	2	3	4	5
Has the Cooperative adopted technology in its processes					
Has the adopted technology improved service delivery in the Dairy Cooperative					
Has the adoption of technology given the Dairy cooperative a competitive edge in the industry					
Has technology adoption spurred development of the					

dairy cooperative					
Does technology adoption improve the communication with the Dairy Cooperative stakeholders					

6) In which other ways does technology adoption affect the development of Dairy Cooperatives? Please explain .....

.....

.....

**C: Managerial Skills and Leadership**

7) This section sets out to investigate the influence of managerial skills and leadership on the development of the Dairy Cooperatives in Kiambu County. Please rate your level of agreement with the following statements on a scale of 1=Strongly Disagree; 2=Disagree; 3=Not Sure; 4=Agree; 5=Strongly Agree

Statement	Likert-Scale				
	1	2	3	4	5
Good management committee ensures proper management of Cooperative resources					
The adoption of good management and leadership practices affect the development of the Dairy Cooperative					
The quality of the employees recruited by the management Committee determines the development of the Dairy Cooperative					
The ability of the management to ensure equitable deployment and manipulation of human resource, financial resources, technological resources, and natural resources enhances the development of the Dairy Cooperative					
The experiences of the managers of the Dairy Cooperative influence their abilities to match development project with available resources					

8) In which other ways does management skills and leadership affect the development of the Dairy cooperative? Please explain.....

.....

**D: Access to Finance**

9) This section sets out to investigate the influence of access to finance on the development of Dairy Cooperatives in Kiambu County. Please rate your level of agreement with the following statements on a scale of 1=Strongly Disagree; 2=Disagree; 3=Not Sure; 4=Agree; 5=Strongly Agree

Statement	Likert-Scale				
	1	2	3	4	5
Net profit of the Cooperative and other sources of funds like government grants influences the development of the Dairy Cooperative					
The success of the development projects of Dairy Cooperative is influenced by their financial plans					
The income levels of Cooperatives affects their decision to invest in various development options					
The cost of funds to the Cooperatives influences their risk averseness and the kind of investment decisions they make					
The income levels of the Cooperative members influences the amounts available to the Cooperative					
The ability of cooperative to provide collateral for capital funding influences the success of the development projects undertaken					

10) In which other ways does access to finance affect the development of the Dairy cooperative? Please explain .....

.....

**E: Members' Participation**

11) This section sets out to investigate the influence of members' participation on the development of Dairy Cooperatives in Kiambu County. Please rate your level of agreement with the following statements on a scale of 1=Strongly Disagree; 2=Disagree; 3=Not Sure; 4=Agree; 5=Strongly Agree

Statement	Likert-Scale				
	1	2	3	4	5
The participation of members is vital before investments are made.					
Members have a voice in the Cooperative and its activities and affect its development projects					
Considerations about the financial expectations of members has to be made before development decisions are made					
Members are encouraged to transact/consume products offered by the Cooperative					
If members do not support an investment project, its sustainability is not be guaranteed					

12) In which other ways does members' participation affect the development of the Dairy Cooperative? Please explain .....

.....

**G: Development of Dairy Cooperatives**

13) This section sets out to find out the level of development among Dairy Cooperatives in Kiambu County. Please rate your level of agreement with the following statements on a scale of 1=Strongly Disagree; 2=Disagree; 3=Not Sure; 4=Agree; 5=Strongly Agree

Statement	Likert-Scale				
	1	2	3	4	5
Our technology adoption is usually in time in-order to be competitive					
Our development projects are usually completed within the estimated budget costs					
Our stakeholders/Members are usually satisfied with the development projects we undertake					
Our development projects usually yield the desired returns					
There is evidence that our development projects are					

sustainable because they are undertaken based on quality market research					
There are instances in which the high cost of finance stall development projects before conclusion					
The Cooperative faces management related challenges in implementing development projects					
Sometimes technology apathy affect the development of the Dairy Cooperative					
High cost of technology hardware and software affect the development of the Dairy Cooperative.					

14) In which other ways can you rate the success of the development of the Dairy Cooperative? Please explain .....

.....

.....

15) In which ways can the development of Dairy Cooperatives be enhanced? Please explain

.....

.....

**\*\*\*THANK YOU\*\*\***

### APPENDIX III: RESEARCH WORK PLAN

<b>Activities</b>	<b>Duration in weeks</b>
Research project proposal development and approval	4 weeks
Literature Review	4 weeks
Developing the data collection instrument	1 week
Fieldwork	2 week
Data analysis and period up to research report approval	2 weeks
Period up to defense presentation of research report findings	1 week
Development of final project work and submission to research coordinator at SSB	5 weeks

*Source: Author, (2020)*

#### APPENDIX IV: RESEARCH BUDGET

ITEMS	QUANTITY	UNIT PRICE	TOTAL AMOUNT KES
<b>Research Assistants (Two)</b>			
Transport	16 days	300	4,800
Meal	16 days	200	3,200
Daily allowance	16 days	500	8,000
<b>Sub Total</b>			<b>16,000</b>
<b>Travelling and subsistence expenses</b>			
Transport	16 days	500	8,000
Meal	16 days	300	4,800
<b>Sub Total</b>			<b>12,800</b>
<b>Stationery</b>			
Pens and pencils	9	50	450
Stapler	1	400	400
Staples	1	100	100
Writing pads (ream)	1	350	350
<b>Sub Total</b>			<b>1,300</b>
<b>Communication</b>			
Airtime	1	3,000	3,000
Sign Language Interpreter	5days	2500	12,500
<b>Sub Total</b>			<b>15,500</b>
<b>Printing and Binding</b>			
Internet			5,000
Printing			2,740
Binding			300
<b>Sub Total</b>			<b>8,040</b>
<b>GRAND TOTAL</b>			<b>53,640</b>

*Source: Author, (2020)*

## APPENDIX V: ETHICS APPROVAL



16<sup>th</sup> April 2020

Mr Mugwe, Peter  
peter.mugwe@strathmore.edu

Dear Mr Mugwe,

**RE: Factors Affecting Development of Dairy Cooperatives in Kenya: A Case Study of Kiambu County.**


This is to inform you that SU-IERC has reviewed and **approved** your above research proposal. Your application approval number is **SU-IERC0750/20**. The approval period is **16<sup>th</sup> April 2020 to 15<sup>th</sup> April 2021**.

This approval is subject to compliance with the following requirements:

- i. Only approved documents including (informed consents, study instruments, MTA) will be used
- ii. All changes including (amendments, deviations, and violations) are submitted for review and approval by SU-IERC.
- iii. Death and life threatening problems and serious adverse events or unexpected adverse events whether related or unrelated to the study must be reported to SU-IERC within 72 hours of notification
- iv. Any changes, anticipated or otherwise that may increase the risks or affected safety or welfare of study participants and others or affect the integrity of the research must be reported to SU-IERC within 72 hours
- v. Clearance for export of biological specimens must be obtained from relevant institutions.
- vi. Submission of a request for renewal of approval at least 60 days prior to expiry of the approval period. Attach a comprehensive progress report to support the renewal.
- vii. Submission of an executive summary report within 90 days upon completion of the study to SU-IERC.

Prior to commencing your study, you will be expected to obtain a research license from National Commission for Science, Technology and Innovation (NACOSTI) <https://oris.nacosti.go.ke> and also obtain other clearances needed.

Yours sincerely,

  
Dr Virginia Gichuru,  
Secretary; SU-IERC

Cc: Prof Fred Were,  
Chairperson; SU-IERC



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## APPENDIX VI: NACOSTI PERMIT

NATIONAL COMMISSION FOR  
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**APPENDIX VII: FACTOR LOADING FOR INDEPENDENT VARIABLES IN THE DEVELOPMENT OF DAIRY COOPERATIVES**

**Technology Adoption**

<b>Total Variance Explained</b>							
Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings <sup>a</sup>
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total
1. Has the Cooperative adopted technology in its processes	4.382	87.641	87.641	4.382	87.641	87.641	4.286
2. Has the adopted technology improved service delivery in the Dairy Cooperative	.466	9.315	96.956	.466	9.315	96.956	2.833
3. Has the adoption of technology given the Dairy cooperative a competitive edge in the industry	.091	1.820	98.777	.091	1.820	98.777	.325
4. Has technology adoption spurred development of the dairy cooperative	.048	.966	99.742	.048	.966	99.742	.144
5. Does technology adoption improve the communication with the Dairy Cooperative stakeholders	.013	.258	100.000	.013	.258	100.000	.465
Extraction Method: Principal Component Analysis.							
a. When components are correlated, sums of squared loadings cannot be added to obtain a total variance.							

## Managerial Skills and Leadership

Total Variance Explained							
Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings <sup>a</sup>
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total
1. Good management committee ensures proper management of Cooperative resources	4.376	87.514	87.514	4.376	87.514	87.514	3.930
2. The adoption of good management and leadership practices affect the development of the Dairy Cooperative	.289	5.781	93.295	.289	5.781	93.295	3.516
3. The quality of the employees recruited by the management Committee determines the development of the Dairy Cooperative	.155	3.092	96.387	.155	3.092	96.387	3.761

4. The ability of the management to ensure equitable deployment and manipulation of human resource, financial resources, technological resources, and natural resources enhances the development of the Dairy Cooperative	.125	2.498	98.885	.125	2.498	98.885	3.989
5. The experiences of the managers of the Dairy Cooperative influence their abilities to match development project with available resources	.056	1.115	100.000	.056	1.115	100.000	4.077
Extraction Method: Principal Component Analysis.							
a. When components are correlated, sums of squared loadings cannot be added to obtain a total variance.							

## Access to Finance

Total Variance Explained							
Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings <sup>a</sup>
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total
1.							
2. Net profit of the Cooperative and other sources of funds like government grants influences the development of the Dairy Cooperative	4.884	81.404	81.404	4.884	81.404	81.404	4.330
3. The success of the development projects of Dairy Cooperative is influenced by their financial plans	.682	11.369	92.772	.682	11.369	92.772	3.737
4. The income levels of Cooperatives affects their decision to invest in various development options	.173	2.889	95.661	.173	2.889	95.661	4.236

5. The cost of funds to the Cooperatives influences their risk averseness and the kind of investment decisions they make	.159	2.644	98.305	.159	2.644	98.305	3.713
6. The income levels of the Cooperative members influences the amounts available to the Cooperative	.056	.938	99.243	.056	.938	99.243	4.247
7. The ability of cooperative to provide collateral for capital funding influences the success of the development projects undertaken	.045	.757	100.000	.045	.757	100.000	4.119
Extraction Method: Principal Component Analysis.							
a. When components are correlated, sums of squared loadings cannot be added to obtain a total variance.							

## Members' Participation

Total Variance Explained							
Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings <sup>a</sup>
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total
1. The participation of members is vital before investments are made.	3.687	73.733	73.733	3.687	73.733	73.733	3.408
2. Members have a voice in the Cooperative and its activities and affect its development projects	.916	18.315	92.048	.916	18.315	92.048	1.322
3. Considerations about the financial expectations of members has to be made before development decisions are made	.179	3.573	95.620	.179	3.573	95.620	3.209
4. Members are encouraged to transact/consume products offered by the Cooperative	.166	3.327	98.948	.166	3.327	98.948	3.247
5. If members do not support an investment project, its sustainability is not be guaranteed	.053	1.052	100.000	.053	1.052	100.000	.072
Extraction Method: Principal Component Analysis.							
a. When components are correlated, sums of squared loadings cannot be added to obtain a total variance.							

## Development of Dairy Cooperatives

Total Variance Explained							
Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings <sup>a</sup>
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total
1. Our technology adoption is usually in time in-order to be competitive	7.471	83.011	83.011	7.471	83.011	83.011	7.096
2. Our development projects are usually completed within the estimated budget costs	.866	9.619	92.630	.866	9.619	92.630	4.944
3. Our stakeholders/Members are usually satisfied with the development projects we undertake	.260	2.884	95.514	.260	2.884	95.514	6.684
4. Our development projects usually yield the desired returns	.121	1.342	96.856	.121	1.342	96.856	5.672
5. There is evidence that our development projects are sustainable because they are undertaken based on quality market research	.110	1.228	98.084	.110	1.228	98.084	6.359

6. There are instances in which the high cost of finance stall development projects before conclusion	.074	.818	98.901	.074	.818	98.901	6.269
7. The Cooperative faces management related challenges in implementing development projects	.044	.485	99.386	.044	.485	99.386	6.729
8. Sometimes technology apathy affect the development of the Dairy Cooperative	.029	.323	99.709	.029	.323	99.709	6.698
9. High cost of technology hardware and software affect the development of the Dairy Cooperative.	.026	.291	100.000	.026	.291	100.000	6.215
Extraction Method: Principal Component Analysis.							
a. When components are correlated, sums of squared loadings cannot be added to obtain a total variance.							