MONITORING AND EVALUATION STRATEGIES, MANAGEMENT SUPPORT AND PERFORMANCE OF DAIRY PRIMARY COOPERATIVE SOCIETIES IN MURANG'A COUNTY, KENYA

BY

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DECLARATION

I declare that this research thesis work does not incorporate without acknowledgement any material previously submitted for a degree in any institution of higher education. It does not contain any material previously published or written by another person nor contain any defamatory material. All the resources used or quoted have been indicated and acknowledged as complete references.

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DEDICATION

This research thesis is dedicated to my children Cynthia and Esther and my husband Ben.

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LIST OF ABBREVIATONS AND ACRONYMS

AI	Artificial Insemination
ARD	Agricultural and Rural Development
ASDSP	Agricultural Sector Development Support Programme
DLP	District Livestock Production
DFID	Department For International Development
DPCS	Dairy Primary cooperative Societies
GDP	Gross Domestic Product
GOK,	Government of Kenya
HRM	Human Resource Management
IFAD	International fund for Agricultural Development
KCC	Keya Cooperative Creameries
KNDP	Kenya National Dairy Plan.
M&E	Monitoring and Evaluation
MCC	Murang'a Cooperative Creameries
NGOs	Non-Governmental Organizations
PCM	Project Cycle Management
Phd	Doctor of Philosophy
PMO	Project Management Office
PMBOK	Project Management Body of Knowledge
UNDP	United Nation Development Programme
M&EPE	Monitoring and Evaluation Planning Strategy
M&ETSS	Monitoring and Evaluation Team Strengthening Strategy
M&ECS	Monitoring and Evaluation Communication Strategy

ABSTRACT

Kenya's development blue pint, vision 2030 recognizes the dairy subsector as one of the vehicles that will aid the achievements of the economic and social targets contained therein. Incorporation of dairy farmers into dairy commercialization has led rural communities to form into dairy primary cooperatives for better access to the markets. However, the performance of these dairy primary cooperatives has remained a challenge. In Murang'a County, the dairy primary cooperatives were initiated in 2012 by the county government with an overall goal of transforming subsistence dairy farming into a commercially oriented one to improve the living standards of the smallholder dairy farmers. The main aim of the study was to determine the influence of monitoring and evaluation strategies on the performance of dairy primary cooperatives registered with Murang'a County Creameries in Murang'a County and whether this relationship could be moderated by management support. A study approach combining both qualitative and quantitative aspects was used to ensure data source and methodological triangulation. A cross-sectional survey design, mainly post factor descriptive, observational and descriptive correlation surveys were used along with qualitative case study designs were used for information-rich data from multiple sources and respondents. A sample size of 276 respondents was selected using a probability proportionate simple random sampling for representativeness along with a non-probability purposive sampling method for the key informants. The primary and secondary data were collected using various pre-tested data collection tools. To analyze quantitative data, both descriptive and inferential statistics were used inclusively of arithmetic mean, standard deviation, Pearson product moment correlation, and regression coefficients. Qualitative data were thematically analyzed. To test for the study hypothesis, a paired sample t-test was used. To ensure that the study sample was from a normally distributed group, a normality test using Shapiro-Wilk test statistics was conducted while multicollineality was tested using variation inflation factor (VIF). Heteroscedansticity was minimized by making sure that the data used in hypothesis testing were approximately normal and accurately transformed after being tested for using Levenne's statistics for equality of variances. The study established that the monitoring and evaluation strategies studied had a positive and significant influence on the performance of dairy primary cooperative societies though at variation strengths. Further management support was found to have a non-significant negative relationship with the dairy primary cooperative societies' performance and with no potential to improve the prediction power of monitoring and evaluation strategies on the dairy primary cooperative societies' performance. From the findings, the study recommends the county government to promote dairy primary cooperative societies' towards commercializing dairy farming for maximum profits. The management team should involve stakeholders in the planning process, allocate enough resources for monitoring and evaluation activities and decide on the recipients of the findings. The Murang'a County Creameries board of management should develop a harmonized training curriculum for the monitoring and evaluation staff and conduct training workshops as a way of increasing their capacity. It should also consider recruiting management officials from within the county to enhance ownership. Further studies on dairy primary cooperative societies' strategies in different contexts other than dairy primary cooperative societies would reveal new insights into the influence of the studied monitoring and evaluation strategies on performance.

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CHAPTER ONE

INTRODUCTION

1.1 Background to the Study

While some developed nations have experienced major growth in small-scale production of milk, the same has stagnated in other countries. There has been a concerted effort to commercialize the dairy sub-sector so as to make it more profitable amongst smallholder dairy farmers. Nevertheless, small dairy farmers have continued to receive only a small part of the total value of their ultimate output, even though, in theory, the risk and rewards should be shared down the production process (Perera & Jayasuriya, 2008). In most cases, much of the milk produced by the smallholder dairy farmers is sold to the milk middle men at low and inconsistent prices across the seasons.

Milk production in Kenya has been an important activity in the rural areas that provides a supplementary income, nutrition, and also employment to millions of the rural households. Murang'a County among other Kenyan counties has received interventions from the government to help commercialize dairy farming which has long been subsistence among the small holder-dairy farmers. Some of these interventions include; provision of appropriate dairy management skills, training of dairy farmers, extension services and linkages with input suppliers and service providers like artificial insemination, feeds and breeds (Ngigi, 2004; Karanja 2013; IFAD, 2010). In order to access the said services, the smallholder dairy farmers through the county government were mobilized into dairy primary cooperatives which were also to act as channels to a common market for their dairy produce.

Despite this concerted effort, much of the milk produced in Murang'a County is still locally consumed. Statistics from Murang'a County Creameries, (2016) show that the dairy primary cooperatives' milk coolers within the county were handling milk much below their installed capacity and also faced severe competition from the private milk vendors for marketing of their milk and milk products. Similarly, report from Murang'a Dairy Livestock Production, (2016) indicate that, of the milk production target set by 2017 in Murang'a County, through the dairy primary cooperatives, only 55% had been realized by the end of the time scheduled with a shortfall of 45% of the expected target. With this understanding, therefore, it was worth noting factors

constraining the performance of these dairy primary cooperatives for an address in order to enhance achievement of some of the objectives of 2030 vision.

In Asia, dairy primary cooperatives were implemented as part of the social welfare and rural development interventions to provide a regular cash flow for poorly resourced and often landless dairy farmer. An evident in Thailand, Malaysia, and Indonesia was that such smallholder dairy farmers were able to make enough income for their improved standards of living. However, a study by Chantalakhana and Skunmun, (2012) on the performance of dairy cooperatives revealed that smallholder dairying in these countries can become very sound and sustainable enterprises with efficient management of these cooperatives. The authors advise for the adoption of effective monitoring formats to be more aware of the relative importance of all their financial inputs in terms of milk productivity. The dairy primary cooperatives must therefore do more and better planning, monitoring and evaluation if they are to generate greater profits for their members. In the management field, production activities and processes should be monitored and evaluated to help differentiated success from failure.

The performance of the dairy sector in India over the past four decades has been extremely impressive. Milk production is a rural activity in India aimed at providing supplementary income, employment, and nutrition to millions of rural households. However, the performance of community dairy cooperatives in India has a mixed response in attaining the desired objectives (Gupta, 2007). It has been observed that even well-conceived dairy cooperatives have suffered from management shortcomings and more so monitoring and evaluation related problems. According to Mdoe, and Mlay, (2009) partial or complete failure of dairy primary cooperatives is attributed to a number of reasons such as absence of meticulous planning and non-adherence to the plan in terms of the agreed processes, lack of sufficient preparatory time before initiation, absence of an effective and efficient coordination mechanism and lack of involvement of the stakeholders in the planning process.

Most commonly, dairy cooperatives for milk production and processing in tropical countries are characterized by inadequate technological and economic conditions. Study findings by Perera and Jayasuriya, (2008) on Sri Lanka dairy industry, pointed among the factors success of the local dairy cooperatives was monitoring and

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feedback with support from the government. Likewise, Papke-Shields, Beise, and Quan, (2010) noted that constant monitoring and evaluation of dairy projects' progress enhanced their performance. According to their study, supporting the M & E function was relevant in the management of project parameters. In the agreement, Hwang and Lim, (2013) established that monitoring and evaluating of dairy projects' budget performance, schedule performance and quality performance had the highest impact on the overall performance of the dairy industry in Nigeria. Examining the M & E strategies applied in dairy primary cooperatives and their influence on performance will most likely help in improving the productivity of dairy smallholder farmers.

In developing countries, the performance of dairy primary cooperatives is driven by a number of factors which among them include management of dairy projects. According to Barrett, (2008) and Kirsten, (2010), M & E is a management tool that can be used to help improve the performance level of dairy production networks by helping to reduce cycle times. Amongst other constraints of dairy production, studies done in Ghana dairy schemes show that lack of integrating M & E in their work objectives impacts negatively to the overall performance of dairy cooperatives (Middleton, 2005 and Martinez, 2011). Successful deployment and use of M & E strategies seem critical to performance and survival of dairy primary cooperatives.

In Kenya, dairy primary cooperatives are promoted by the government as a means to increase the efficiency of marketing of fluid milk and supply of inputs and hence dairy development in the rural sector of the country's economy. In fact, dairy cooperatives have a potential impact on poverty reduction to sustained economic growth and to make markets function better for poor people (DFID, 2010). Even though, the dairy sub-sector in Kenya has a vast potential, it is constricted by dearth and fluctuation in quality and quantity of dairy feeds, deprived and eroding genetic resource base, poor management practices, diseases, poor market infrastructure, poor service delivery and policy and institutional arrangements ((Karanja, 2003; Muriuki, 2003, Wanjala, Omondi, and Njehia, 2014, Oduor, 2011). To reorganize the development constraints and recognize the benefits from the huge but unexploited dairy resource, efforts have been made in diverse aspects to expand this sub-sector. These efforts include the provision of input and services like animal health, breed

improvement, feed resources development, research, extension services and development, finance and marketing.

Like in many other developing counties, the dairy commercialization concept is mainly shared among the dairy farmers in Muranga County who do not hesitate to express their devastating confidence in the organization of dairy primary cooperative societies as a driving force for their development. Through Murang'a County government's initiative, 35 primary dairy cooperative societies were set up as a means to add to the effectiveness of milk production and collective marketing of dairy produce. However, the performance of these dairy primary cooperative societies is limited to the set target. Moreover, knowledge about the strategies used to monitor and evaluate the dairy cooperatives' activities and the management support is limited, a gap this present study seeks to bridge.

Given the undoubting importance of dairy cooperatives, therefore, it becomes imperative to explore the monitoring and evaluation strategies and management support as they have far-reaching implications on the performance of dairy primary cooperatives. Therefore, this study was initiated to create new knowledge in the understanding of monitoring and evaluation strategies and their influence on the performance of dairy primary cooperative societies.

1.1.1 Performance of Dairy Primary Cooperatives in Murang'a County

The decision to promote dairy development through cooperatives in Murang'a County was based on a number of considerations, chief among which was that dairying would be a means to provide an additional source of employment and income to small and marginal farmers as well as the landless laborers in rural areas. The decision to adopt the cooperative structure as a means for dairy development was taken in order to promote domestic production under the cooperatives. Despite the government spending substantial amounts of money to help commercialize dairy farming in Murang'a County, the findings of a study by Muriuki, (2013) show that, performance of dairy primary cooperatives in production and productivity is still low in bringing a sustainable change in the living standards of the dairy farmers. This could be attributed by multiple factors studied or yet to be studied.

Performance of dairy cooperatives is perceived as a multidimensional concept depending on the nature and type of the cooperatives in question. For instance, Doloi,

(2009) considers three dimensions in measuring the performance of dairy primary cooperatives; improved income of the beneficiaries, improved food security and increased employment opportunities of the intervention target groups. Another important dimension in the performance of dairy performance includes stakeholders' satisfaction (Dvir, 2005). Any interventions which in the ultimate analysis result to customers approval is said to be successful. In a nutshell, the performance of dairy cooperatives can be accessed on the basis of quality achievement, meeting of technical requirement, meeting beneficiaries' needs and finally achievement of organizational goal.

For the purpose of this study, the performance of the dairy primary cooperatives in Murang'a County was based on four performance measurement dimensions adopted from earlier scholars but with a slight improvement to fit the study. These were; consistency in milk delivery to the cooperative societies, an increase of income from milk sale, increased number of members registered with dairy primary cooperative societies, and satisfaction of the dairy farmers with the operations of the dairy primary cooperatives. This would help maintain a balance on performance indicators dimensions.

1.1.2 Monitoring and Evaluation Strategies

Monitoring and Evaluation strategies are the actions plans to guide the monitoring and evaluation work throughout the production process. Monitoring and evaluation focus on the execution process and progress for the intended results (Khan, 2010). Considering that large amounts of time and resources were dedicated to selecting and designing of dairy primary cooperative societies, it was of paramount importance to adequately monitor and evaluate their activities if they were to achieve their performance objectives. Since the Kenyan dairy industry, particularly dairy cooperative societies have a long and successful history of linking smallholder dairy producers with markets; Mbugu, Njonge, Waiyaki and Ngaruiya, (2010), it is important to understand the M & E strategies related to the performance of dairy primary cooperatives in Murang'a County which is likely to influence their performance. Monitoring and evaluation strategies which addressed by this study were: monitoring and evaluation planning strategy, monitoring and evaluation team strengthening strategy and monitoring and evaluation communication strategy.

1.1.1.1 Monitoring and Evaluation Planning Strategy

Monitoring and Evaluation process is dependent on effective planning. If monitoring and evaluation of the dairy primary cooperatives' activities are to be effective it is important to know what the purpose of M & E is, who the providers and recipients of monitoring and evaluation findings are, and whose perspectives the intervention is interested in. Only then can the various M & E alternatives be considered.

Monitoring and evaluation activities should be seen as an integral component in the management of the dairy cooperative societies. According to UNDP, (2002) guidance, M & E should take place throughout the intervention's production lifecycle with regular review and updating. In a similar line of thinking, Raymond, (2011) advises that planning for M & E should start at the time of initiation of the intervention along with other performance objectives. Planning for monitoring and evaluation should detail on M & E budget allocation, M & E-resource types and sources, M & E technology, stakeholder representative and utilization of monitoring and evaluation findings (Gyorkos, 2003). Once the execution activities are well monitored and controlled, employees are likely to keep to the track, learn and improve their operations for performance purposes.

Lack of adequate financial resources for monitoring and evaluation is a common challenge to the performance of dairy primary cooperatives societies. Gibbs, Napp, Jolly, Westove, and Uhle, (2012) noted that a number of community organized dairy cooperatives lack adequate funding for their dairy projects' activities: this means that the little resources available are channeled to the actual implementation of their daily activities. Monitoring and evaluation are looked at as an expense that these cooperatives cannot afford and if any monitoring and evaluation is done, then it is done superficially just recording a few activities and irregularly: all due to lack of planning for M & E from the initial stage. M & E planning is recognized as one of the key apparatus undertaken to ensure effective operations (Naoum, Fong and Walker, 2014). Lack of planning for monitoring and evaluation funding makes the dairy primary cooperatives unable to use external evaluators, not able to adequately collect the entire necessary field data and also not afford to use computers or any other technology to aid the monitoring and evaluation function, resulting to low-quality data. It is therefore of much essence to budget for monitoring and evaluation within the overall production cycle, set aside resources enough for monitoring and evaluation

activities, develop monitoring and evaluation capacities and involve dairy cooperatives' stakeholders' representatives in planning for monitoring and evaluation to enhance the learning process for performance.

1.1.2.2 Monitoring and Evaluation Team Strengthening Strategy

Development programmes, projects and other interventions with strong monitoring and evaluation components tend to stay on track. Additionally, implementation flaws are often detected earlier, which reduces the likelihood of having major cost overruns or time delays at a later stage. For an effective monitoring and evaluation, as advised by Kelly and Magongo, (2004) there should be individuals who are directly in charge of the M & E activities as a main project management function and in identification of qualified personnel for the different activities of the M & E such as data collection, analysis, report writing, dissemination of the monitoring and evaluation findings. In other studies, such individuals are referred to as project M & E team (Gyorkos, 2003: and Naidoo, 2011). In the case of dairy primary cooperative societies, having the team clearly designated with monitoring and evaluation roles ensures that when the monitoring and evaluation processes are due, somebody is available to do it, an indication of the value attached to monitoring and evaluation as a tool for management, learning and improving on the performance of these cooperatives.

Strengthening and supporting the monitoring and evaluation team members ensure that the team adds value to the operations of the dairy primary cooperative societies. A motivated working team according to Cantu, (2007) usually achieves high performance. This indicates that the more a team is strengthened, the more it performs and the higher the value added to the dairy primary cooperative societies. The same applies to the monitoring and evaluation teams in the management process. Pretorius, Steyn, and Jordan, (2012) noted a significant association between management support on the monitoring and evaluation team and the performance of the projects they produced. Moreover, the management team should desire to achieve quality in all project phases and processes, embracing quality and empowered monitoring and evaluation team, so as to enhance their performance. Empowered and capacitated monitoring and evaluation team members work for results.

There are various features mostly used to assess the capability of the monitoring and evaluation team members; a factor perceived to influence the performance of social

interventions. These features include; financial capacity, size of the monitoring and evaluation staff, monitoring and evaluation skills and knowledge, frequency of monitoring and evaluation, stakeholders' representation, M & E teamwork and use of technology (Hassan, 2013; Georgieva & Allan, 2008; Magondu, 2013; Naidoo, 2011; Gwadoya, 2012). To investigate the influence of M & E strategies on the performance of dairy primary cooperative societies, the current study used monitoring and evaluation team strengthening strategy measurement indicators derived from earlier empirical studies. These indicators include; the optimized size of the monitoring and evaluation team, clarified roles of the monitoring and evaluation team and presence of monitoring and evaluation internal capacity.

1.1.2.3 Monitoring and Evaluation Communication Strategy

Communication is important for all facets of cooperatives' societies but is absolutely essential to the performance of monitoring and evaluation. This is because monitoring and evaluation results must feedback into the project execution processes as a whole to influence decision making (Kusek & Rist, 2004). As proposed by Mackay, (2007) communication for results is a monitoring and evaluation strategy which should be used as a management tool to facilitate internal learning and engagement of stakeholders. This is in agreement with an observation by the Iris Aid, (2010) that communication role should be throughout the production cycle as opposed to exclusively as a dissemination function at the end of the production process. From these observations, failure to communicate M & E results regularly with stakeholders within the dairy primary cooperatives may cause disengagement, disinterest and ultimately the non-use of M & E findings. An M & E that is not used to inform decisions is of little value to the dairy projects and to the entire dairy primary cooperatives.

One of the major pillars of monitoring and evaluation function is the monitoring and evaluation planning strategy. Monitoring and evaluation function should be planned and developed right from the project initiation, planning, and designing phases. It is necessary to identify the stakeholders who need to receive information on monitoring and evaluation, what type of monitoring and evaluation information needed, format the monitoring and evaluation information should be in, when the information should be provided, through which mode and channel and who is responsible for providing it (Torres et al. (2005). Additionally, communication of monitoring and evaluation

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results improves clarity on expectations, roles, and responsibilities, as well as information on progress and performance which helps to ensure optimum and efficient use of the production resources.

Earlier studies have viewed communication strategy in projects and organizational general views. The present study will specifically investigate communication as a monitoring and evaluation strategy in the dairy primary cooperative societies, particularly in Murang'a County. The indicators used to measure this construct were; monitoring and evaluation communication frequency, diversity of monitoring and evaluation communication channels monitoring and evaluation target audience.

1.1.2.4 Management Support

Management support in this study is used as a moderating variable in the relationship between performance of dairy primary cooperatives and monitoring and evaluation strategies. A moderating variable is used as a factor or a phenomenon that also impacts on the dependent variable, thus influencing the relationship between the independent and the dependent study variables (Marconi & Lakatos, 2003). According to Best and Khan, (2004), the moderating variable tends to interact in some style to vary the association between the dependent and the independent variable. The management team plays an essential role in providing the M & E team with the appropriate working environment, and making decisions that enhance the creation and execution of monitoring and evaluation skills and knowledge successfully.

This present study views management support as the initiative from the dairy primary cooperative management team to provide a conducive working environment to the staff including the M & E team. This may be done through motivating the project team through incentives and availing the project team with opportunities and abilities to perform. Management support has been viewed as a critical success factor in dairy farming operations (Chepkoech, (2010); Karanja, 2003). In Zimbabwe, Lack of management support has resulted in poor monitoring and evaluation practices as noted by Mugwagwa, (2007) in the case of the Marirangwe dairy projects leading to poor performance. Likewise, low milk production at Chikwakwa smallholder dairy farmers in the Mashona land East province of Zimbabwe was found to be generally due to poor calf management as a result of poor management support. Morgan, (2012)

attests that effective management support gives confidence to the project team to execute their projects toward success.

The current study examined the influence of management support on dairy primary cooperative societies and its moderating influence on the relationship between M & E strategies and performance of the dairy primary cooperative societies in Murang'a County. The indicators used to measure this construct were; provision of incentives for motivation professional development for skills and provision of modern technology.

1.1.3 Dairy primary cooperatives in Murang'a County

Murang'a County is one of the forty-seven counties created under the Kenyan constitution of 2010. It occupies a total of 2558.8 km2, borders to the north by Nyeri, to the South by Kiambu, to the West by Nyandarua and to the East by Kirinyaga, Embu and Machakos counties. The 2009 population and housing census recorded a population of 936,228 persons for Murang'a county projected to rise to 966,672 persons in 2017 (Murang'a County Integrated Development Plan/ MCIDP 2013-2017). The County has eight constituencies; Kangema, Katanga, Kiharu, Mathioya, Kigumo, Kandara, Kahuro and Maragwa (Murang'a County Development Plan, 2008). The climate is relatively favorable for dairy cattle which make the county to have a substantial for dairy producers.

Dairy cooperatives societies have been encouraged as a vehicle for economic and social development because the cooperatives in form of equitable organizations enable smallholder milk producers to capture economies of size and increase their marketing power (Muriuki & Thorpe 2001). The dairy primary cooperative societies in Murang'a County were established in the year 2012 by the county government with the twin objectives of; increasing the milk production besides providing small dairy producers with remunerative price of milk per litre and available market linkages in order to generate greater and consistent profits within the region to grow benefits to the county rural poor to the greatest possible extent.

The dairy primary cooperative societies are distributed within the eight Murang'a County political constituencies. To support their operations, the Murang'a county government installed 35 cooling plants within the county constituencies to facilitate in milk collection, cooling and provision of other bulking services (Murang'a County

Creameries, 2015). From the cooling points, the milk is collected by the milk processors, mainly Brookside, Daima and Kenya Cooperative Creameries processing companies through the Murang'a County Creameries.

The dairy primary cooperative societies are under the umbrella of Murang'a County creameries (MCC). They are centrally managed and monitored by the MCC with support from the County government. The MCC management committee is made up of the general manager, operational manager, quality assurance and information technology managers along with other clerical staff.

An analysis of the smallholder dairy sector in central Kenya by KUAT/CAISKIPPRA, (2012) found that managing of dairy primary cooperatives was being faced by numerous challenges which have been decrementing their productivity. From this observation, the current study was propelled to investigate on the performance of Murang'a County Dairy Primary Cooperative Societies with a focus to Monitoring and Evaluation strategies and support from the management team.

1.2 Statement of the Problem

The Kenya Vision 2030 aims at transforming the dairy sub-sector from subsistence into a commercial orientation in order to deliver an annual 10 % economic growth. Dairy cooperative societies play an important role in milk production and distribution in support of short-term food security. Moreover, they are capable of increasing smallholder dairy farmers' yields and incomes, thus improving their livelihood. The milk production and income levels of the smallholder dairy farmers are dependent on the performance of the dairy cooperatives societies to which they are members of.

To trim down the milk production limitations, and realize the benefits from the vast but untapped dairy resource in Murang'a County, hard work has been done to improve the performance of the smallholder dairy farmers. Although significant progress has been made in the establishment of the dairy primary cooperatives, their performance has been sub-optimal. Statistics from the District Livestock Production annual report, (2013) indicate that by 2012 when the dairy primary cooperative societies were being initiated, there were 35 actively operating cooling plants and the total daily milk production in the county was at 70,000 liters. A target production of milk per day was set at 200,000 liters by 2017 which was to be attained by attracting

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more dairy farmers into the dairy societies with improved daily milk production. Report from Murang'a County Creameries, (2017) is that by 2017, only 28 cooling plants among the initial 35 were actively in operation. In addition, the amount of fluid milk sold to the processor from the dairy primary cooperative societies through Murang'a County Creameries was at 110,000 liters per day. Guided by this statistics, only 55% of the milk production target had been achieved by the expiry of their target duration with a shortfall of 45 %.

The topic on the performance of dairy cooperative societies has been previously studied by different scholars from various backgrounds and using different methodologies. Different results have been yielded that are not easy to compare. Some of the performance challenges constantly identified include poor management, institutional challenges, high production cost, group dynamics, breeding and feeding-related issues and other external factors. Among the internal elements that appear not adequately addressed was the nature of monitoring and evaluation strategies used in the management of dairy primary cooperative societies and in particular those operating in Murang'a County.

From this background, the current study sought to investigate the performance of dairy primary cooperative societies in Murang'a County which to date has not met the stakeholders' expectations. The influence of M & E strategies and management support on the dairy primary cooperatives' performance was determined. The moderating influence of management support on the relationship between dairy primary cooperative societies' performance and M & E strategies was further examined.

1.3 Purpose of the Study

The purpose of this study was to investigate the influence of monitoring and evaluation strategies on the performance of Dairy Primary Cooperative Societies in Murang'a County, Kenya and whether this relationship could be moderated by management support.

1.4 Objectives of the Study

The study was guided by the following objectives

i. To establish how Monitoring and Evaluation planning strategy influences performance of Dairy Primary Cooperative Societies in Murang'a County, Kenya.

ii. To examine the influence of Monitoring and Evaluation team strengthening strategy on performance of Dairy Primary Cooperative Societies in Murang'a County, Kenya.

iii. To determine the influence of Monitoring and Evaluation communication strategy on performance of Dairy Primary Cooperative Societies in Murang'a County, Kenya.

iv. To establish the influence of combined Monitoring and Evaluation strategies on the performance of Dairy Primary Cooperative Societies in Murang'a County, Kenya.

v. To assess the influence of management support on performance of dairy primary cooperatives in Murang'a County, Kenya.

vi. To determine the moderating influence of management support on the relationship between Monitoring and Evaluation strategies and performance of Dairy Primary Cooperative Societies in Murang'a County, Kenya.

1.5 Research Questions

The study sought to answer the following questions:

i. How does monitoring and evaluation planning strategy influence performance of Dairy Primary Cooperative Societies in Murang'a County, Kenya?

ii. How does Monitoring & Evaluation team strengthening strategy influence performance of Dairy Primary Cooperative Societies in Murang'a County, Kenya?

iii. In what ways does M & E communication strategy influence performance of Dairy Primary Cooperative Societies in Murang'a County, Kenya?

iv. How does combined Monitoring and Evaluation strategies influence the performance of Dairy Primary Cooperative Societies in Murang'a County, Kenya?

v. How does management support influence performance of Dairy Primary Cooperative Societies in Murang'a County, Kenya?

vi.   How does management support moderate the relationship between Monitoring and Evaluation strategies and performance of Dairy Primary Cooperative Societies in Murang'a County, Kenya?

1.6 Research Hypotheses

$H1_1$. There is a significant influence of monitoring and evaluation planning strategy on performance of dairy primary cooperative societies in Murang'a County, Kenya.

$H1_2$. There a significant influence of monitoring and evaluation team strengthening strategy on performance of dairy primary cooperative societies in Murang'a County, Kenya.

$H1_3$. There is a significant influence of monitoring and evaluation communication strategy on performance of dairy primary cooperative societies in Murang'a County, Kenya.

$H1_4$. There is a significant influence of M & E strategies on the performance of dairy primary cooperative societies in Murang'a County, Kenya.

$H1_5$. There is a significant influence of management support on the performance of dairy primary cooperative societies in Murang'a County, Kenya.

$H1_6$. Management support has a significant moderating influence on the relationship between monitoring and evaluation strategies and performance of dairy primary cooperative societies in Murang'a County, Kenya.

1.7 Significance of the Study

The study findings were hoped to benefit the management bodies of the dairy cooperative societies in Kenya, policymakers and other dairy primary cooperatives operating under similar conditions. The information generated by this study was hoped to assist in the improvement of the dairy cooperatives' performance by suggesting appropriate and relevant measures. It was hoped that lessons drawn from this study would go a long way in informing and shaping the direction of the existing and future dairy primary cooperatives in Murang'a County as well as the country of Kenya and beyond.

The results of this study were hoped to assist other researchers as stepping stones for further studies on the dairy primary cooperative's performance and add to the existing knowledge base on performance of dairy cooperative societies in developing countries with respect to monitoring and evaluation strategies. Documentation of the research outcomes and lessons would inform decision-making and would identify future opportunities for effective interventions in the dairy industry.

1.8 The study Basic Assumptions

The assumptions considered for this study were: the dairy primary cooperative societies would continue to be important in the achievement of the vision 2030 targets. It was also assumed that the study participants would answer the interview and questionnaire questions in an honest and candid manner and to the best of their ability. Once the dairy primary cooperatives' performance data were available, the study assumed that the dairy cooperative management team and other relevant stakeholders would make use of them, use the findings and make decisions on them for dairy primary cooperative societies' performance improvement.

1.9 Delimitations of the Study

The current study was conducted in Murang'a County of Kenya. This geographical location attracted this study due to its substantial potential for dairy production, with the existence of large numbers of smallholder dairy farmers on subsistence dairy farming. Despite a large number of the dairy farmers, the county lacked a common milk processing plant and therefore had to bring together the smallholder dairy farmers in small primary cooperatives to facilitate milk collection for a common market, a phenomenon unique to Murang'a County. It was the researcher's intention to study these dairy primary cooperative societies located in different geographical locations within the county and with different performance records based on data from the county livestock offices. This geographical delimitation helped in controlling the cultural and political differences between different counties and sub counties in Kenya.

The study unit of analysis was the dairy primary cooperative societies in Murang'a County from which the study respondents were sampled. The study was delimited to the mixed method approach proposed by pragmatism worldview assumption in order

to accommodate views of the dairy primary cooperatives' stakeholders with varying demographic characteristics.

1.10 Limitations of the Study

Written questionnaire responses may have posed limitations concerning response clarity and respondents' understanding of the questionnaire items. With the absence of the researcher to explain the study or offer clarification for the data collection activity, the accuracy and depth of response would have been affected. Foreseeing this possibility, the researcher ensured that the questionnaire items were clear and well-validated prior to distribution.

The survey instruments measured the research participants' perception regarding the M & E strategies and management support factors related to the dimensions of the performance of the dairy primary cooperative societies on the study. The degree of subjectivity would most likely be inherent to the data collected which would have led to biased results. The position of the respondents in the dairy primary cooperatives may have posed bias and subjectivity in their responses. To check on this, concentrated efforts were made to ensure that all aspects of data collection and analysis were approached with maximum objectivity.

1.11 Definition of Significant Terms in the study

Dairy Primary Cooperative Societies- From the study context, these are groups of dairy farmers who have deliberately come together for a collective common milk marketing channel for a sustainable income.

Performance of dairy primary cooperative societies –
The study views the dairy primary cooperative societies' performance as the ability to sustain the livelihood of the smallholder dairy farmers through their own dairy products and for the economic growth of the entire county. Performance of dairy primary cooperatives was measured through-consistence in milk delivery to the processing plant, an increase of dairy farmers' income from milk sales, increase in membership and satisfaction of stakeholders with the dairy primary cooperative societies' operations.

Monitoring and Evaluation Strategies –

From the study's point of view, these are action plans on what issues to monitor and evaluate who to conduct the M & E activities, which methods to be employed in data gathering, analysis and in the dissemination of M & E findings.

Monitoring and Evaluation Planning Strategy-

This was perceived by the study as the definition of M & E activities, estimating project M & E cost and required resources, deciding on M & E stakeholders' representatives and   recipient of the M&E findings. To measure this construct, the following parameters were used: budget allocation, stakeholders' involvement and utilization of the findings

Monitoring and Evaluation Team Strengthening Strategy-

This was viewed by the study as the action plans taken to empower the M & E team for enhanced performance. Indicators to measure this study construct were; optimizing the size of the M & E team, specifying the role of the M & E team, the presence of M & E internal capacity.

Monitoring and Evaluation Communication Strategy-

From the study's point of view, this is an action plan on how the M & E field findings would reach the dairy primary cooperative societies stakeholders. The indicators used to measure this construct were; M & E-communication mode, M & E of communication frequency and diversity of M & E communication channels.

Management Support –

For the purpose of this study, management support was viewed as the initiative from the management to provide an enabling working environment by motivating the monitoring and evaluation team, availing the project team with opportunities and abilities to enhance performance. The indicators used to measure this construct were; provision of incentives for motivation, professional development for skills and provision of modern technology.

1.12 Organization of the Study

The research project report is organized into five chapters. Chapter one is the introduction which consists of the study background, problem statement, the study purpose, objectives of the study, research questions, research hypotheses, significance, delimitations, and limitations of the study, basic assumptions and the definition of significant terms. Literature review is represented in Chapter two which looked at the various aspects of the dairy primary cooperative societies and what other researchers have done in relation to the research topic. Studies on M & E strategies, management support, and performance of dairy primary cooperatives were reviewed. Finally, in this chapter, theoretical and conceptual frameworks are presented together with the identified research gaps in a matrix form.

Chapter three outlines the research philosophy, research design, the target population, methods of data collection, validity and reliability of data collection instruments, data collection procedures, ethical consideration, data analysis and presentation techniques. Chapter four has data presentation, data analysis, interpretation, and discussion of the findings. Chapter five contains a summary of the study findings, conclusions drawn from the findings, recommendations, and suggestions for further studies. A list of references made in the study are appended, researcher's introduction letter, research instruments are appended in the Appendices section of this research thesis.

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CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

A literature review is an account of what has been published on a topic by scholars and researchers. According to Taylor and Procter, (2012) literature review should allow a critical assessment to identify areas of controversy in the existing literature, and formulate questions that need further research. This chapter seeks to demonstrate the relative dearth of research on the link of M & E strategies, management support and performance of dairy primary cooperative societies in Kenya and in particular Murang'a County. As with all other literature review, this review is intended to clarify existing knowledge, raise questions, and reveal gaps to inform future practice and research. For the purpose of this study, the literature review was guided by the study objectives highlighted in chapter one.

2.2 Performance of Dairy Primary Cooperative societies

The primary object of cooperatives is to facilitate economic interaction through collective action and enabling members to gain access to a certain market service or take advantage of economies and partake in activities they would never afford or manage individually. Due to the difference in the nature and essence of cooperatives, their performance is argued to have different interpretations and expectations

Performance of the dairy primary cooperatives has several definitions and various aspects can influence it. Kerzner, (2009) proposes that a correct definition of dairy primary cooperatives' performance should consider various dimensions. A considerable amount of research has been conducted in various areas, investigating factors that affect the performance of dairy primary cooperative societies and have also proposed various ways to their management for a better performance (Williams, and Naumann, (2011); Chen, and Lee, (2007). Singh and Tyagi, (2015) studied the performance of dairy marketing cooperatives in Ethiopia. The predictor variables studied were socio-economic and institutional factors. Results of a Logit regression model showered a significant positive correlation between dairy farmers' family size, land size, number of dairy animals, education level, milk price, attitudes, and management skills. Management variables like monitoring and evaluation as

hypothesized by this present study may likely explain performance of dairy primary cooperatives.

2.2.1 Performance Measures of Dairy Primary Cooperative societies

Various definitions have been applied in the measurements of performance of dairy primary cooperative societies. Cook and Burres, (2009) identified three critical performance measurement factors as financial, organizational and operational. The researcher after surveying twenty eight dairy cooperative societies in Malawi observed a significant positive correlation of variables like open membership, governance, and management practices with the dairy cooperatives' success. Closely related, Banaszca, (2008) noted four factors that contributed to the higher performance of dairy cooperatives; leadership strength, group size, the business relation among members and membership selection process during the group formation. Empirical studies have studied performance of dairy cooperative societies from different dimensions.

The performance of dairy cooperative societies has been measured differently. Wani, Sankhara, and Signh, (2015) studied performance of dairy cooperatives in India. The performance measurement indicators used were an annual change of membership of societies, percentage households covered in villages, milk collected per member and milk price per liter over the period of three years. In a similar study context, Amponsha, (2010) investigated the performance of dairy projects in Ghana focusing on three measurement dimensions; achievement of stakeholders' satisfaction, achievement of management objectives and achievement of benefits to beneficiaries. Likewise, Harmon, Scotti, Behson, (2007) assessed dairy cooperatives' performance by measuring the client's or intended user's satisfaction, as well as employee development and satisfaction. The author used operational efficiency, customer benefit, interventions' success, and potential benefit to the entire cooperative to assess its performance. In the same vein, Yu, Flett, and Bowers, (2005) develop a value-centered model based on net execution cost and operation value to evaluate performance. Similarly, Sharma, (2015) in a study of dairy cooperatives performance, used various performance measurement indicators like herd size per household, membership to the dairy cooperatives and milk production in liters per household.

Different scholars have used different performance measurement dimensions in different types of interventions. In the dairy production, Diane, Polson, Delker, and Gary, (2014) have established fifteen performance measures based on ten major areas namely; the rate of production, cost control, capital efficiency, profitability, repayment schedule, solvency, mission, maintain family's living standard and motivated labour force among others. In the Asian dairy industry, Philippot, (2011) used profitability model to measure dairy cooperatives performance. The study reports that for smallholder dairy farmers, milk income less feed cost is one of the simplest and easiest ways to measure dairy farm profitability. The performance indicators used by Ngongoni, Mapiye, Mwale, and Mupeta, (2006) on a study of small-holder dairy cooperatives in Zimbabwe were milk yields, calving rates, age at first calving and calving intervals. These findings were further corroborated with Agyemang and Nkhonjera, (2010) in Malawi who used the dairy milk production per cow, employment creation, and project expansion to measure the performance of dairy cooperatives societies. Despite of measuring performance of dairy cooperatives from different measurement indicators, there seem to be a correlation on the results obtained.

Different performance measurement models have been used in the previous studies. They include; productivity, profitability, production cost, customer satisfaction and employees' satisfaction models or a synthesis of either model. Mburu, Gitu, and Wakhungu, (2007) investigated the performance of dairy primary cooperatives through the lens of small holder farmers. The performance measurement models used were increased profit per cow, risk reduction and reduced production cost. Studies by Mumba, (2011) in Zambia; Cain, Anwar, and Rowlinson, (2007) in the Punjab region of Pakistan are among the few studies which tested a multidimensional model of dairy cooperatives' performance whereby performance measures were based on both financial and productivity measures. The findings were that increased support from the management enhances the performance of dairy cooperatives which increases the profitability of small-holder dairy farmers. Use of combined models allows use of multiple performance measurement indicators for more valid results.

For more insight, selected measurement indicators from different performance dimensions designed by earlier scholars were used to measure the performance of the dairy primary cooperatives of Murang'a County. Scott-Young and Samson, (2008)

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propose the use of a combination of performance dimensions for triangulation. For the purpose of this study, performance indicators of dairy primary cooperative societies included; consistence in milk delivery, dairy farmers' income from milk sales, membership and satisfaction of the stakeholders with DPCS' operations.

2.3 M & E strategies and Performance of Dairy Primary Cooperative societies

Operational Managers have become increasingly responsible for exploiting and adjusting to change in a rational and proactive way. They are also responsible for the implementation of important strategies for performance (Dess et. al., 2007). A strategy is a high-level decision process concerned with responsiveness to, and relationships within the firm's business environment and therefore the choice of a strategy is a powerful determinant of its performance over time. Monitoring and evaluation have been promoted as an important concept to improve the quality and impact of rural development efforts. Regular and objective monitoring of rural development indicators will assist in governments' ability to formulate and implement rural development policies, effectively assessing progress and demonstrating accountability. Kusek, Rist & White 2005) assert that M & E should be placed a priority on the agenda of developing countries, within the framework of the 2030 vision; a key measure of both economic and social development. Through monitoring and evaluation of project planned activities, stakeholders are likely to differentiate success from failure.

Monitoring and evaluation is an integral part of project cycle management and therefore it is increasingly important to consider strategies to advance this field along theoretical and practical lines. Various scholarly studies have been done on M & E and dairy cooperatives performance. A cross-sectional survey on dairy cooperatives in Uganda on n = 93 by Kyazee, (2017), found a significant and positive relationship between M & E rights and dairy cooperatives' performance. This relationship was found to be moderated by innovation by Marangu, (2012). A significant relationship was found to exist between innovation and cooperative's' performance which also had a positive moderation influence between M & E rights and performance. Monitoring and evaluation strategies could influence dairy primary cooperatives' performance differently, a gap addressed by the present study. For more insight, the moderating influence of management support on the relationship between monitoring

and evaluation strategies and performance of dairy primary cooperatives was examined.

Different monitoring and evaluation strategies have been used in literature as predictors of performance of dairy cooperatives and have yielded results with some differences and similarities likewise. Based on these premises, it is important that the dairy primary cooperative stakeholders adapt monitoring and evaluation strategies appropriate for their performance. The choice of monitoring and evaluation strategies and performance variables for this empirical study was based on the extensive literature review of existing studies with a focus on monitoring and evaluation planning, strengthening of monitoring and evaluation team and communication of monitoring and evaluation findings to the project stakeholders. The literature on the monitoring and evaluation strategies of concern to this study is reviewed in the following section.

2.3.1 Monitoring and Evaluation Planning Strategy and Performance of Dairy Primary Cooperatives.

The purpose for monitoring and evaluation planning is to establish and maintain guidelines that define the M & E activities. This will help determine whether the M & E process is institutionalized within the overall planning and designing stages of the interventions. According to Crawford and Bryce, (2003) planning for monitoring and evaluation entails definition of M & E activities, estimating project M & E cost and required resources, and deciding on M & E stakeholders' representatives. Gyorkos, (2003) alludes that project planners should include a clearly delineated M & E plan as an integral part of the overall project plan that includes of monitoring and evaluation activities, persons to carry out the M & E activities, monitoring and evaluation frequency, sufficient budget for activities and specification of the use of monitoring and evaluation findings. Moreover, the key purpose of M & E in development interventions is to measure performance to allow learning for development of results more effectively.

The required financial and human resources for monitoring and evaluation should be considered within the overall costs of delivering the agreed results and not as additional costs. In support of this observation, Kohli & Chitkara, (2008) contend that M & E should be planned for at the same time of project planning. Most of M & E

plans are noted by Mackay, (2007) to also contain a list of collaborators and other partners to participate in the projects' activities and a plan for communication and utilization of the M & E results. This shows that planning for M & E takes care of all features that need to be in place and for early detection of project progress or lack thereof.

Monitoring and evaluation strategies on the performance of interventions have been empirically studied based on different contexts. Wegayehu, (2014) studied the performance of selected nongovernmental organizations supported common groups associations in Addis Ababa through the lens of M & E strategies. The study which was purely quantitative revealed that scarcity of resources set aside for M & E work, inadequacy of monitoring and evaluation technical capacity, deficiency of expertise in M & E and minimal support from the management challenged M & E performance to a great extent which highly contributed to the associations' under-performance. In a similar line of thinking, Vanessa and Gala, (2011) conducted a quantitative study on dairy projects in Ghana. The findings were that availability of M & E human and technical capacity, participatory M & E, effective dissemination and utilization of M & E findings contributed positively to their performance. Despite the difference in the study contexts, M & E remained a predictor variable to projects' performance.

Monitoring and evaluation discloses best practices for knowledge accumulation on why and how some projects thrive in different situations and contexts. In their study, Khake and Worku, (2013) found that for an effective M & E practice, there should be a participatory approach in the M & E budgetary planning, allocation, and review. The authors argue that involving those tasked with the M & E function in budgeting promotes ownership and improves delivery of project results. In practice, the concerned should be cautious in budget allocation so that the M & E budget is not too little as to give results that are not accurate and credible, or so big that it interferes with the program. Closely related, a descriptive survey study by Masuku, (2014) on the management of dairy cooperatives in Swaziland confirmed an association between M & E capacity, innovation and milk yields. These findings were supported by Kamau, Mireri, and Usman, (2013) based on a quantitative study of thirty projects in a building industry in Abuja, Nigeria. In comparison, projects in which project managers supported monitoring and evaluation practices were rated higher in performance.

Monitoring and evaluation planning strategy aligned with the stakeholders' desires and expectations ensures ownership and utilization of M & E findings. This improves the performance of the interventions. In Banglandesh, Jabbar, (2009) conducted a simple regression analysis on the M & E performance relationship in donor-funded community dairy projects. The researcher found a modest but significant positive correlation between the study variables. These findings were inconsistent with the results of a quantitative study by White, (2012) in Botswana on the influence of project review techniques on performance. The findings revealed a significant and positive relationship between M & E practices, employees' competencies, management commitment and resource availability on the performance of the dairy projects. White's argument was supported by Horton, MacKay, Anderson, and Dupleich, (2000) on dairying projects in the Netherlands, who indicated that planning for M & E financial resource and skilled personnel enhance project performance. From these observations a well-designed monitoring and evaluation strategy will enable assess of project outcomes and impacts.

Despite different study approaches, these studies seem to have related findings in support of M & E planning strategy on projects' performance. Nevertheless, Kavuyah, (2010) laments that the meaningfulness and usability of monitoring and evaluation information has been limited because of its disconnection from strategic and organizational level decision making including finances and budgetary decisions and therefore as advised by Asaka, Aila, Odera, and Abongo, (2012) that beneficiaries should be included right from the onset of the project to make sure that the beneficiaries own up the project activities to enhance project success. While multiple empirical studies support M & E planning as an effective strategy to performance, there is little documentation in the literature related to M & E for dairy primary cooperative societies. Using a mixed method research approach, this present study investigated related study constructs in dairy primary cooperatives and in a Kenyan local context. Use of both qualitative and quantitative approaches opened avenues for obtaining information-rich and unbiased data. This also advanced knowledge on whether the same findings would hold across contexts.

Involvement of the program beneficiaries in the M & E planning process gives them a sense of ownership and utilization of the M & E findings which enhances improvement of the overall program performance. Hassan, (2013) reported that a

member of the project is seen to be more receptive to the M & E findings in which s/he has participated actively rather on the reported M & E findings. Osterberg and Nilsson, (2009) found that there was significantly higher member disloyalty when members were dissatisfied with their cooperatives management. A case study by Milliken, (2000) noted a low dairy farmers participation in the monitoring and evaluation process which contributed positively to low milk production in smallholder dairy farming in Bolivia. Farmers, who were the primary beneficiaries, were not involved in the planning for monitoring the dairy farming programmes and therefore they were not aware of the program's success indicators; majority of the respondents could not differentiate success from failure factors. Inadequate stakeholder involvement in the planning process for project monitoring and evaluation has been documented as one of the most common reasons why both social and development interventions fail to achieve their set targets.

Inadequacy in M & E capacity, poor stakeholders' orientation and participation result to lack of system ownership, non-utilization of results, ineffective decision making leading to low projects' productivity. Results of a survey conducted by Scott-Young and Samson, (2008) on the south Asian dairy industry concur with this observation. The study found that operationalization and use of M & E findings were poor due to lack of institutional paucity of competent staff, misunderstanding on the role and utility of M & E and undefined roles and responsibilities of those charged with M & E function leading to projects' underperformance. Despite some evidence from case study research, little remains known on the association between M & E strategies and performance of dairy primary cooperatives in Kenya, and in particular Murang'a County. After all, just because the normative literature frequently lists M & E as a key component of management, it doesn't mean dairy primary cooperative societies are actually engaged in such practices, a gap the present study sought to address through a mixed method approach for source triangulation.

From the reviewed literature, M & E planning strategy focusing on staff capacity, M & E budgeting, results utilization and involvement of stakeholders is recognized in improving the performance of interventions involving people, activities, and processes. A study by Wachaiyu, (2016) M & E factors influencing performance of development projects in Starehe sub-county in Nairobi count focused on; M & E Plan, M & E budgetary, M & E tools and M & E team strength. A positive significant

association was found to exist between the studied variables. The Pearson correlation coefficients of the predictor variables' relationships were: r = 0.562, r = 0.358, r = 0.223 and r = 0.392 respectively. The study revealed that the amount of budgetary allocation for monitoring and evaluation was a significant determinant of M & E system implementation in development projects.

It is crucial for monitoring and evaluation professionals to assess the monitoring and evaluation budget needs when designing the project in order to allocate funds to the implementation of key monitoring and evaluation tasks. Although these studies indicate a correlation between M & E related variables and performance, none had an attempt to moderate this relationship with whichever variable to enhance the existing relationship between the studied variables. To bridge this gap, the present study introduced management support as a moderator variable between the study independent and dependent variables to widen the study scope for more information rich data and establish possible variables that can strengthen the M & E performance relationship.

2.3.2 Monitoring and Evaluation Team Strengthening Strategy on Dairy Primary Cooperatives in Murang'a County

Development interventions with strong monitoring and evaluation components tend to remain on track. This is because problems are often detected earlier which reduces the likelihood of having major cost overruns or time delays at a later stage. Therefore, the present study proposes that providing support and strengthening the M & E team will play a key role in ensuring that the team adds value to the dairy primary cooperatives' operations. M & E team strengthening strategy is viewed by the study as the action plans taken towards empowering the M & E team in their operations for results.

A considerable amount of empirical research on M & E team and project performance has been conducted in different fields, contexts and orientations yielding correlating and conflicting results likewise. A study by Chapman, (2014) recommends project M & E teams to be equipped with monitoring and evaluation skills and knowledge to facilitate their assigned responsibilities. This researcher found that the type and level of monitoring and evaluation skills and clarity of M & E team responsibilities determine the outcome of project performance. The researcher's argument was that an monitoring and evaluation officer requires skills in understanding M & E frameworks,

performance indicators, types of evaluations, conducting of evaluations, writing an evaluation report, as well as auditing an M & E system for quality results. Informed by the literature, the current study examined the strategy of strengthening the M & E team through the following measurement indicators; clarity of the M & E role, optimized M & E team size and M & E internal capacity.

The strength of M & E teams is perceived in the literature as one of the components influencing their performance. The scholarly studies reviewed identify some common aspects which are used to assess the means for strengthening the M & E team members (Magondo, 2013; Naidoo, 2012; Pretorius; 2012). Some of the M & E team strengthening aspects as featured in the literature include; training of M & E team for skills, availing financial resources, defining of M & E roles and responsibility, maintaining a reasonable size of the M & E team and enhancing regular bonding activities among others. An analysis of a quantitative study by Yong and Mustaffa, (2012) on construction projects in Malaysia revealed that a unit increase of technical training of the M & E team led to an increase in performance of the project by a factor of 0.789. This observation corroborates with the findings of Julia and Helen, (2011) that M & E staff training and budgeting for M & E function positively and significantly influenced the performance of the projects under study. In a similar view, Yumi and Susan, (2007) on construction projects in Ghana, noted that for better projects performance, it is important that organizations plan to empower the project team responsible for conducting M & E activities both financially and technically. Guided by the literature, the present study hypothesized an association between M & E team strength and performance of dairy primary cooperative societies in Murang'a County, Kenya.

Performance of dairy cooperatives societies and growth of smallholder dairy farmers is deemed to contribute to improving rural living standards and thus reducing poverty along with the 2030 vision. The size of the monitoring and evaluation team and their competence are critical characteristics of M & E quality that cannot be separated (Cambell, 2012). This means that in the absence of one dimension the other cannot contribute to the quality and strength of the team (Al-Twaijry, Brierley, and Gwilliam, 2004). These authors based their study on a questionnaire and interview responses from internal and external evaluators, working in Saudi Arabia. The findings noted that the external evaluators supported evaluation team size is an important indicator of

its strength. For further insight, the present study examined whether the M & E contribution on the performance of various projects could inform dairy cooperatives for enhanced performance.

A large size of monitoring and evaluation team has many benefits for operations of the M & E unit. For instance, for larger sized M & E functional units, there will be more opportunity and flexibility to have a team rotation schedule that can also influence M & E effectiveness by promoting a stronger relationship and thus resulting in more objective M & E results (Raymond, 2011). Frequent field monitoring and evaluation will also be enabled. Furthermore, Zain, Subramanian, and Stewart, (2006) argue that a larger sized M & E team is likely to be better resourced, including having a broader work scope, higher organizational status and wider staff talent than a smaller team. The quality of M & E operations seems likely to be higher in teams with a larger proportion of staff with M & E experience compared to those with a lower proportion of M & E experience (Chin, 2012). Whilst findings from the above-reviewed literature could be true, the present study opinionates that use of a single method for data collection and linearity of study variables may interfere with the data validity and result's credibility. To address this limitation, this study used a mixed method approach, concurrent study design and multiple data collection techniques for methodological and data source triangulation. The current study also included a moderating variable for a wider scope of the study variables.

Monitoring and evaluation performance is affected by staffing that is top heavy, too light or distributed in a way that obstructs good team coordination. Results of a quantitative study by Foresti and Marta, (2007) showed that there was a significant and positive correlation between the level of M & E skills and knowledge, size of M & E team and resource availability on the performance of horticultural projects in India. According to Mugweni and Muponda, (2015), the M & E function for a very extensive income generating program in Benin was designed with as light overall M & E structure as possible. Only one person was responsible for synthesizing all periodical reports, checking with the field, entering basic data, and dealing with multiple requests for projects' coordinators. This led to poor and delayed field data which translated into overall program underperformance. The M & E aspects focused on by this study were; availability of monitoring and evaluation champion, M & E budget allocation and M & E skills and knowledge.

Enhancing the persons tasked with the monitoring and evaluation role will increase the quality of their work and help in improving the overall performance. A cross-sectional survey conducted by Makori and Wanyoike, (2015) to determine the influence of result based M & E on performance of donor-funded dairy projects using a sample of 67 respondents noted that most of these projects had implemented M & E systems but lacked professional capacity, training for skills and motivation which affected tracking of projects' results impacting negatively on the performance of projects' organizations. A correlation coefficient of 0.764 was obtained between M & E capacity development and performance of the donor-funded dairy projects. Further, training and capacity building on M & E systems was found to build the knowledge, skills, and capacity for the M & E teams to monitor, evaluate and track performance indicators. From this observation, the findings of these different studies converge to a common conclusion on M & E and projects' performance.

Research should focus on questions that address why observed patterns exist since some relationships observed might be due to chance rather than the related variables. In order to confirm the existence of such relationships, it is prudent for a researcher to test hypotheses, an area mostly omitted by majority of the researchers (Henn and Foard, 2009). It is in this view that the current study tested hypothesis to confirm the significant influence of M & E strategies and management support on the performance of dairy primary cooperative societies in Murang'a County.

2.3.3 Monitoring and Evaluation Communication Strategy and Performance of Dairy Primary Cooperative Societies in Murang'a County

Communication strategy is an action plan on who to transmit the M & E field findings, what exactly is to be communicated, who to be communicated to, by when and through which means and frequency. There are many options for communicating M & E findings, and often several techniques and formats are used or sequenced to promote greater dissemination of results for learning and consequently improving organizational performance (Lammert, Heinemeier and Fiore, 2017). In an empirical study on education projects in Asia, Torres et al., (2005) found that M & E findings were adequately utilized by project stakeholders for informed project decisions. Torres established that project evaluators were using diverse communication channels to validate findings and to report the final results depending on the target audience of

the M & E results. This implies that sequencing a series of communication formats in a skillful way can be influential in communicating a written report's findings and recommendations within the project staff for learning and action for improved project performance.

Some monitoring staff often invests too much time and resources in gathering data which they frequently fail to interpret and present in a form that will convey the meaning of the progress made to the end users. Effective communication of M & E findings is critical for project management process. Muzinda, (2007), conducted a study to determine the influence of M & E communication strategy on organizational performance. A sample of n = 81 participants was drawn from the target population to respond to the survey questions. Findings showed that selection of M & E communication tools and techniques was positively but weakly associated (r = 0.038) with organizational performance. In collaboration, Oladele, (2011) found a strong correlation (r = 0.88) between the choice of M & E communication styles on project performance. Based on theory, communications of results lead to reaching the destined end users by helping to bring about change and therefore, designing an information channel for a specific target audience will ensure its relevance and facilitate its accessibility and application.

Continuous communication flow of monitoring and evaluation data and feedback add value to project phases from designing stage, implementation up to the impact level. Besides the reporting arrangements, a qualitative study by Tuckermann, (2007) concludes that a well thought out M & E communication strategy should be part and parcel of M & E system design to facilitate timely passing of M & E field information to the relevant stakeholders on whether and why the intervention is succeeding or failing. Findings from a correlation analysis by Otieno, et al., (2015) revealed that performance of flower projects in Naivasha was positively related to M & E communication strategy with a correlation coefficient of r = 0.466. The study further noted that projects that had weak M & E communication strategies with irregular reporting and utilization of M & E results had their performance rated low. The study recommends organizations to develop effective M & E strategies to facilitate communication and also reporting of M & E findings to the target audience for use. Different communication tools have different capabilities to transfer information to the receivers and therefore the frequency and diversity of M & E communication

channels would facilitate reaching of various stakeholder groups. These predictor variables have seemingly been studied singly in the literature and thus the need to investigate their combined influence on performance dairy primary cooperative societies and in particular Murang'a County of Kenya.

Project management book of knowledge (PMBOK) identifies M & E communication strategy as one of the most important components of project management. This observation is supported by a quantitative survey by Anand, (2010) on horticultural common groups which revealed that poor coordination among the stakeholders correlated negatively with the groups' performance. The study recommended the use of multiple communication channels for timely communication of important groups' information and more so M & E findings and feedback. Similarly, findings of a study by Jaszczolt, Potkanski, and Stanislaw, (2010) showed that monitoring and evaluation findings were frequently communicated through diverse channels. Among the participants, 53.7 % said they acquired M & E findings during meetings, 19.4% got them through annual reports, role-plays, drama and video for the annual report, 9.0 % for role-plays and drama and 3.0 % for video and others. Although these studies concur in their findings, they seem to have relied mainly on descriptive analysis to put across the above arguments. The use of both descriptive and inferential analysis would help in establishing variables' relationship and more so the significance of the existing relationships using more valid data for conclusion and recommendation.

Understanding and learning occur when evaluation processes and findings are effectively communicated and reported to the intended stakeholder groups. Chapman, (2014) notes that, open, clear, honest, rich, frequent and timely, effective and efficient M & E communication modes enhance the common understanding of the findings relevant for the project change process. In relation to Chapman's assertion, Neves, (2012) contends that when planning a M&E communication strategy, it is important to include a variety of communicating and reporting formats-tailored to audience information needs. As there are many kinds of methods and techniques to gather M & E data, different organizations are expected to adopt some of them depending on the contexts and purpose.

The monitoring and evaluation findings for dairy cooperatives work progress should frequently be communicated to the local management boards and management team

for timely corrective action when the need arises. A longitudinal study of n = 121 capital projects was conducted Sange and Muya, (2014) to investigate the predictability of M & E drivers on performance. One of the study observations was that the richer communication channels had higher performance predictability which correlated closely with the study findings of Oke & Idiagbon-Oke, (2010). The study also adapted various data collection tools and techniques to enable data collection from different sources for triangulation. Whilst some M & E communication variables have reported positive influence on project performance, much have not been documented about their influence on performance of dairy cooperative societies, and more so in Murang'a county.

2.4 Management Support on Performance of Dairy Primary Cooperatives Societies in Murang'a County

The management body plays an important role in influencing the performance of dairy cooperatives. As realized by Beckmann, (2006) the management team is meant to initiate and promote an enabling working environment for staff to deliver performance. The study advised that the people in the management should aim at motivating the cooperatives working teams towards achieving a common goal. Management support is therefore crucial in the implementation of M & E strategies which will continually enhance the operations of the dairy cooperatives.

Management support is stressed in the literature as having a significant influence on the achievement of any interventions. Albeit many studies have investigated on the importance of monitoring and evaluation and its influence to organizational performance, the more significant issues that have attracted attention from researchers are management support and its influence to enhance performance. Studies have stressed on incentives as a form of support provided by management towards improving the performance of organizational staff. A study by Horne and Zuri, (2004) noted a significant effect of incentives and improved performance of staff by motivating them towards the production of best outcomes. Consistent with these findings, Horald et al, (2004) in a study of four hundred US organizations observed that incentive systems greatly improved performance. Generally, rewards and incentives are found to have a positive significant relationship with production efficiency.

On the professional development of the M & E team members, Hepworth and noel, (2002) found that staffing professional employees increases effectiveness in the monitoring and evaluation process. The M & E team members should receive continual professional development by seeking up-to-date knowledge which will indeed improve the entire evaluation process.

Monitoring and evaluation function without trained personnel is a pitfall that should be avoided on the path of project success. As noted by Westerveld, (2006), an effective M & E function can only commence when competent key M & E staff are put in place, suitable offices are requisitioned and the necessary equipment is procured. To support this statement, McCoy, (2005) accentuates that the management office should provide a conducive working environment for M & E staff to successively discharge their responsibilities across all sections of the project. The study further explained the need for a close working relationship between M & E team and capacity building activities to enable them to work with competence for enhanced performance. This observation correlates with a study by Pretorius, (2012) whose findings confirm a positive significant relationship between M & E team competency and project performance. From this survey study, half of the questionnaire respondents concurred with the statement that M & E team is more competent to conduct M & E practices if it has been empowered through training. From the findings of these empirical studies, a well-motivated M & E team with an ability and opportunity to perform is likely to influence the performance of projects which could also be the case with the dairy primary cooperatives in Murang'a County.

Organizations should pay attention to technological information aspects as enablers of improved performance; a field perceived to have an influence on performance. A study by Dahmash and Abu Za, (2009) concluded that availability of technological capabilities and requirements correlated positively and significantly with organizational success. However, Admour, (2003) found a positive but weak association between using information technology and work environment. Similarly, Van der Waldt, (2009) contends that the use of modern communication technology provides an increasingly cost-effective option to improve the accessibility of M & E findings, which would help promote transparency and accountability. This is in agreement with results of a correlation analysis by Otieno, Waiganyo, and Njeru, (2015) who found a statistically significant influence (p=0.466) at a level of

significance of (0.000) of M & E information technology on performance. The study concluded that the use of modern technology in M & E process is a major determinant of organization performance in the horticultural sector in Kenya.

Support from the management team was one of the most important factors in successful implementation of fabric projects in Hong Kong. Chan and Lee, (2007) used binary logistic analysis in the study of n= 96 construction firms. Among other study variables, management support was found to have a significant positive correlation with project performance. Similarly, Anand, (2010) analyzed sampled horticultural projects in five companies using hierarchical regression. The findings revealed that inclusion of management in the entire project phases improves employees working spirit which translates to high project outcome. Despite these studies being conducted in various industries and in different contexts, the findings seem to have some similarities. In a Kenyan perspective and focusing on the dairy industry, the current investigated on the moderating influence of management support on the relationship between M & E strategies and performance of dairy primary cooperatives to add in the existing body of knowledge.

2.5 Management Support influence on the relationship between monitoring and evaluation strategies and project performance

It is important to recognize that managerial support is essential for monitoring and evaluation. Monitoring and evaluation is not likely to have a spontaneous uptake by individuals or institutions simply because it has a rational and persuasive appeal. The need for management support for M & E in projects is an organizational issue, and has been documented by White (2012) and also Kusek and Rist (2004), all of whom demonstrate the necessity for management support for monitoring and evaluation. The impact of such pronouncements and influences is that monitoring and evaluation gets reinforced at different levels and becomes accepted by the project M & E team as an incentive towards performance. Jones and George, (2008) ascertain that motivating monitoring and evaluation staff directs their behavior towards a goal. In the same vein, Hwang, and Lim, (2013) add that motivation of M & E players increase the level of effort, persistence, and ability towards achieving the organizational goal.

Management support in the execution of monitoring and evaluation system is essential for organizational learning and project improvement. Bester, (2013) argues

that active participation by senior management in the execution of project monitoring and evaluation work demonstrates a commitment on the strategy and thus impact on both the level of buy-in and acceptance of the concept and consequently the implementation process. Using a multiple regression analysis, Long and Fei, (2015) examined the moderating influence of management support on the relationship between transformational leadership and project performance based on data from the 125 selected project managers in the education sector of Pakistan. The study findings were that project performance can be enhanced through unfolding the relationships between transformational leadership and top management support. On the other hand, Mayne, (2007) suggests that heads of organizations can effectively demonstrate commitments through deliberate motivational actions such like persistence, setting reasonable yet challenging targets for staff, communication of the M & E results internally and externally as well as the provision of or lobbying for the related financial resources, skills, and equipment.

Increase in management support levels may enhance relationships amongst the monitoring and evaluation team members. Some of the studies reviewed indicate that an empowered monitoring and evaluation team has a statistically significant influence on project performance. A qualitative study by Abdul-Rahman, Wang, and Muhammad, (2011) identified management factors related to M & E team performance. Among them were; enhanced vertical communication, incentives, team building, conducive and enabling working environment. Similar factors were found significant for dairy project performance in Ghanaian dairy industry (Martey, Al-Hassan and Kuwonu, 2012). Further to this, the study confirmed the hypothesis that enhanced structural capacity for M & E from the management team significantly correlates with project performance. These findings are in agreement with study findings by Georgiera and Allan, (2008) based on education projects' management support and performance. From the literature reviewed, there is an indication that supporting the monitoring and evaluation work enhances its influence on projects performance. Most research on these variables is not done from the perspective of dairy primary cooperative societies. Thus, it seems that the correlation between management support and performance of dairy primary cooperative societies has not been sufficiently explored and more so in Murang'a County of Kenya.

Most of the empirical researchers argue that management support through involvement and participation of the executive or top-level management in monitoring and evaluation function plays a large role in the performance of interventions. Study findings by Hassan, (2013) in Bangladesh Shrimp-Culture projects, noted that considerable resources were spent in developing an M & E system for useful information. However, this information was not used by management for decision making due to the absence of linkages between M & E processes and the management of the project. It is observed from the literature that strong commitment of top management to the M & E function, especially of a particular 'M & E champion', leads to improved project performance (Weber and Norton, 2014). From the above-reviewed literature, management support has been studied as a single predictor variable of project performance in various disciplines. From a Kenyan perspective, the present study examined the moderating influence of management support in the relationship between M & E strategies and performance with reference to dairy primary cooperative societies in Murang'a County.

Management support has been one of the most widely discussed project related factors in several project performances. In addition to verbal support, top management can demonstrate their confidence in M & E function by personally utilizing the M & E findings. Top management frequent personal involvement in evaluation practices may result in sufficient delegation of resources and an increased pressure for system success and thus sustainability. Using a survey instrument, Ling, Low, Wang, & Lim, (2009), examined 47 public projects in Singapore on M & E performance. Among the factors explored, the researchers found top management support for M & E applications as the highest predictor of M & E performance. The study by Ling, Low, Wang, and Lim was purely descriptive and did not test the statistical significance of management support on M & E performance.

There is more insight to be gained from the combination of both deductive and inductive study approaches than either one by itself. Testing the significance of the findings gives a better understanding of the study variables and therefore the current study combined the two methods concurrently to answer the research questions and also tested hypotheses to establish the significance of the study findings. Similarly, treating management support in double lenses; a predictor of project performance and

at the same time a moderator of the relationship between M & E strategies and performance of dairy primary cooperatives widened the study scope for more insight.

Different studies on similar and related variables have yielded different results. A quantitative study by Wanjala, Omondi, and Njehia, (2014) on predictors of milk production on dairy projects in western Kenya varied in results. An inferential analysis of the study quantitative data from survey questionnaire found no significant influence of management support on milk production compared to other internal variables such as milk production technologies, resource availability and dairy feeding methods. Contrary to this, in a longitudinal survey by Kariungi, (2014.p 115). On IFAD supported dairy cooperatives in Western Kenya, an M & E team member described his dissatisfaction in an in-depth interview. "We get no recognition by management, only with little support and resources". Majority of the study respondents reported a low salary with no salary rise for incentives; a situation that de-motivated the team working spirit impacting negatively on the M & E performance,

Elsewhere in Morocco, Peterson and Fischer, (2001) studied government supported dairy projects and reported good salaries and other benefits. The projects in which M & E teams were motivated by having the right equipment and support such as funds to hire enumerators, fuel for vehicles and essential equipment and suppliers such like computers and papers for survey reported high dairy projects' performance. The study associated the high performance of those dairy projects with the continuous support of the M & E team from the management. Similarities are noted in Yemen in public projects where the M & E units receive good support and recognition from the project director (Pinto, 2000). The study further noted that the M & E teams were given incentives like the pooled use of vehicles, external training on M & E and performance related salaries which contributed positively to their work quality. These differences in studies' findings on similar study variables propelled the current study to a further investigation for conclusive information.

Evidence from the empirical studies reviewed, researches on the relationship between management support and project performance have been adequately done in various disciplines and contexts with mixed findings. Likewise, studies on management support and M & E performance have equally been conducted. Moreover, literature

has acknowledged the existence of management support as a valuable template for project performance (McComb., 2008; Naranjo-Gil, 2009). However, inadequate studies have discussed management support as a supporting variable to M & E strategies on project performance, particularly in the dairy primary cooperatives of a developing country. This, therefore, suggests for more investigation on the moderating influence of management support on the relationship between M & E strategies and dairy primary cooperatives' performance to add on the existing knowledge base in the literature.

2.6 Theoretical Framework

This section puts up a theoretical framework based on the key arguments and findings from the literature reviewed. The theoretical framework is a description of the theory that a study is based on. It directs the researcher in resolving the main variables and the types of statistical relationships between the variables. It also outlines a basis for the hypothesis and alternative appropriate research methods to deal with the research questions. The use of the theoretical framework in this study was to advance knowledge on Monitoring and & Evaluation strategies which are fundamental to the performance of the dairy primary cooperative societies.

Even though there are many theories that can be used to analyze M & E strategies and project performance, these theories only capture bits and pieces without providing the whole picture of the study variables. Various scholars have grounded their M & E based studies on different theories: Tassie, Murray, and Cutt, (2008) used institutional theory to explain how some nonprofit organizations conduct M & E for symbolic purposes and rarely for decision making. Ellis, Parkinson, and Wadia, (2011) describe how M & E practices can add value to organizations using multiple theoretical lenses; agency theory, equity theory, resource-based theory among others. Muchelule (2018) on the study of M & E practices on project performance anchored the study on complexity theory, the theory of change, utilitarian theory, constraints theory and social change theory.

From an M & E perspective and focusing on the dairy primary cooperative societies' performance, this current study was grounded on the theory of change. The theory of change as originally put forward by Weiss, (1995) is the dominant theoretical approach used to guide research efforts focused on organizational performance.

According to Anderson, (2012), the theory of change explains how an intervention is expected to lead to the intended impacts for adjustment. Theories that adequately describe the actions, desired changes and underlying assumptions or strategies are essential for monitoring and evaluating programs and projects likewise. Dairy cooperatives are designed to bring change in the community and they are increasingly being used as vehicles of community development.

In reality, the dairy sector is experiencing a substantive growth and as such a lot of change is inevitable especially in quality and quantity as a result of the increased competition (Kihanya, Anne Muthoni, (2009-2010). Guided by Jean, Diana & Avan, (2011) assertion, the present study utilized the theory of change in monitoring and evaluating the progress and results of the dairy primary cooperative societies with support from the management. This theory also helped to identify the benefits of the dairy cooperative societies' beneficiaries from the activities and processes of the interventions being implemented.

The theory of change should be used in aid of the development of M & E plans which in turn helps the stakeholders to assess and adapt progress towards the achievement of the desired long-term outcomes Indrakumaran, (2011). Anchored on this theory of change, the involvement of stakeholders in the planning for M & E of the dairy primary cooperatives' operations and in decision-making process would increase ownership of the findings leading to improved performance. This observation is supported by Richard, Cynthia, and Holly, (2009) who found that integrating project planning, management support, and M & E systematically into the project operations would yield results towards change.

The theory of change requires management and the rest of the stakeholders to work in collaboration and clearly define the organization as a sequence of inputs, activities and outputs that lead to the desired outcomes (Clark and Anderson, 2004). Grounded on this theory, the influence of management support on the relationship of M & E strategies and performance was examined. The process of communicating results helps clarify the logic of an intervention articulating the intended change from each of the activities and how they link together. Articulating the theory of change associated with the activities within the dairy primary cooperatives' procedures will enable the stakeholders to identify the intended change of each activity, communicate the

findings to relevant stakeholders which would constitute success of the entire intervention. Based on this theory, the communication logics of the M & E findings were examined and their influence to the performance of the dairy cooperative societies of Murang'a County.

A major central tenet of the theory of change is the notion of the relationship between performance, inputs, activities, and outputs of interventions enhanced by multiple dimensional communications and collaboration among the interventions' actors. From the theory of change, the success of the change process depends on the strength of the change actors and therefore grounded on this theory, this study examined the strength of the M & E team and its influence on the performance of the dairy primary cooperative societies of the study focus. The strength of this theory is that it offers fresh and valuable insights from many theories about organizational performance from various study dimensions. In particular theory of change allows a clear picture of 'how change happens' and the forces at play that help or hinder change towards achieving the intended goals and objectives.

Even though theory of change is a useful and well-established perspective for studying monitoring and evaluation and projects' performance, it is not without limitations. For example, Reeler, (2009) conducted a meta-analysis of nonprofits' performance literature and reported a mixed and inconclusive support for the central contentions of the theory of change. The author argues that the theory of change is limited to only what is measurable which can limit an organization to only doing what is measurable rather than what is important and can easily encourage an overly linear approach. Similarly, when Rogers, (2010) tested a number of hypotheses of organizational development projects using a large sample of the main project officials, their findings were more supportive of the hypothesis derived from other theories other than the theory of change. The limitation being that the theory of change does not take into account external context and does not integrate the anticipated actions of the work of peer organizations, expected change in economic climate and other factors.

Despite these limitations, the theory of change is deemed appropriate for this study since it is only delimited to the dairy primary cooperative societies' internal factors which can simply be aligned with the theory of change components. The task of M &

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E is to determine whether and in what ways the actual outcomes of the work reflect the outcomes forecast in the Theory of Change, and whether the assumptions underlying the theory about what will work will be correct. If the dairy primary cooperatives' operations succeed, having a Theory of Change behind it will lend support to attribution. Success also will confer predictive power on the theory making it useful to any effort to replicate or scale up.

2.7 Conceptual Framework

A conceptual framework has been defined by Mugenda & Mugenda, (2003) as a hypothesized model identifying the concepts under the study and their relationships. It's a diagrammatic presentation showing the relationship between independent and dependent variable. A dependent variable is what one measures in the experiment and what is affected by the experiment. An independent variable is a variable presumed to affect or determine a dependent variable (Dodge, 2003). Figure 1 shows a conceptual framework describing the relationship of the study variables.

Moderating Valuable

Management Support
- Provision of incentives for work motivation
- Professional development for skills
- Provision of modern technology

H1$_4$ H1$_6$ H1$_5$

Independent Valuable

Monitoring and Evaluation Strategies

M & E Planning strategy
- M & E budgetary allocation
- Stakeholders' involvement
- Utilization of M & E findings

H1$_1$

M & E team Strengthening strategy
- Clarified M & E roles and responsibilities
- Optimized size of the M & E team
- M & E internal capacity

H1$_2$

M & E Communication Strategy
- M & E communication frequency
- M & E communication channels' diversity
- M & E target audience

H1$_3$

Dependent Valuable

Performance of dairy primary cooperatives
- Consistence in milk delivery to the dairy cooperative societies.
- dairy farmers' income from dairy milk production.
- Membership enrolment in the dairy primary cooperative societies
- Dairy farmers' ssatisfaction with the dairy primary cooperative societies

Figure 1: Conceptual Framework of the study variables

The dependent variable in this study is performance of dairy primary cooperative Societies which was measured through the following indicators; Consistency in milk delivery to the dairy cooling plants, income of dairy farmers from milk sales, membership enrolment in the dairy primary cooperative societies, and satisfaction with the dairy primary cooperatives operations. The dairy primary cooperative societies' performance indicators are in accordance with the literature reviewed.

The study predictor variables are Monitoring and Evaluation Strategies explained by M & E planning strategy, M & E team strengthening strategy and M & E communication strategy. Management support is the study moderating variable. The influence of M & E strategies was singly tested. Further, the influence of the three M & E strategies as the unit variable was then tested. The influence of management support on performance was measured through the provision of incentives for work motivation, professional development for skills and provision of modern technology.

The moderating influence of management support variable was then tested to determine whether it would strengthen the relationship between M & E strategies and performance of dairy primary cooperative societies.

2.8 Summary of gaps from the Literature Review

A review of literature related to the study variables revealed that monitoring and evaluation variables had not been investigated adequately; furthermore, moderating influence of management support on the relationship between M & E and performance of dairy primary cooperative societies had not been given keen attention. From the literature reviewed, there are various studies previously done on performance, majority of which seem to agree with M & E influencing performance (Prabhaka, 2008; Papke Shield, 2010; Hwang and Lim, 2013, Chin, 2012). However, most of the authors of these studies focused on critical factors among them M & E variable with none of them dealing with M & E in isolation and in greater details. There were also some methodological gaps identified and especially use of a single study approach thus limiting study designs and data collection sources for valid data.

Few studies have advanced knowledge of dairy primary cooperative societies' performance through empirical analysis with various predictor variables. There was, therefore need for further studies using monitoring and evaluation strategies, their direct and indirect relationship with dairy primary cooperative societies' performance.

Some of the identified knowledge gaps from the literature reviewed are summarized in a matrix form as indicated in Table 2.1

Table 2.1: Knowledge gap Matrix

Author	Study Focus	Methodology	Findings	Knowledge Gap	Current study's focus
Jabbar, (2009)	Management effectiveness on performance of dairy cooperatives in Bangladesh	Cross-sectional survey on n-111 dairy cooperative societies	M & E mechanisms correlated positively and significantly to the Performance of the sampled dairy cooperatives	-Use of a single research approach, which may have yielded data with scarcity of information.	Focused on M & E strategies; M & E as an aspect of project management.
		Stratified and Simple random sampling for dairy farmers' respondents,	Support of the dairy farmers through training correlated positively with milk productivity.	-study of a homogenous group which is likely to be biased and therefore data not well validated.	Used a mixed method approach for data methodological and source triangulation in order to construct a more detailed presentation of the dairy primary cooperatives' performance in a Kenyan context.
		Descriptive analysis Use of open and closed ended questionnaire and interview schedules	Cooperative officials training on management practices	-Linearity of study variables which may have delimited the study to just a few study variables.	The study moderated M & E strategies-performance relationship with management support variable to check on the linearity of the study variables and to widen the scope of the study for enriched information.

Kedir, (2010)	Effects of Members participation on performance of dairy cooperatives in Ethiopia	Survey and multiple case study methods proportionate stratified random sampling, FGDs and interview schedules Pearson correlation and ordinal logistic model	Lack of member involvement correlated positively and significantly to DCs performance. Distance to the nearest milk collection centre's correlated negatively with DCs performance. Training of the dairy cooperative stakeholders had a positive but not significant relationship with DCs performance	The study did not consider moderating the relationship of the independent and dependant variables with whichever variable. Use of minimal data collection tools	The current study focused on M & E strategies on the dairy primary cooperatives using a variety of both qualitative and quantitative data collection tools for triangulation. This present study moderated the M & E strategies-performance relationship with management support to find out whether it would strengthen this relationship.

Makori and Wanyoike, (2015)	Influence of M & E on performance of donor funded dairy projects in Kenya. M & E variables focused on were, Training for M & E, stakeholder's involvement and -baseline study.	Cross-sectional survey, use of questionnaire on 167 respondents/ dairy farmers using stratified random sampling from the 32 dairy projects Descriptive statistics and correlation analysis	A positive correlation of Training for M & E capacity (0.764), Stakeholder involvement correlated positively (r=0.408) with performance. Baseline study had a positive association with performance of the dairy projects	-Use of a single research approach, which is constrained to limited data collection tools and therefore less valid and low reliable data. Use of descriptive statistics only and therefore no hypothesis was tested to determine the significance of the relationship between variables.	Focused on M & E strategies explained by multiple M & E indicators, inclusive of M & E training and stakeholders' involvement. Use of multiple data sources and collection tools for more valid and reliable information. Use of both descriptive and inferential statistics for testing study hypothesis to find out the variables' relationships and their significance. Moderating the M & E– performance relationship to determine the influence
Long and Fei, (2015)	Moderating effect of top management support on the relationship between Transformational Leadership and project performance -Focused on higher education sector in Pakistan	Mixed method approach Systematic sampling design PLS-SEM data analysis technique	There was a relationship between project managers' transformational leadership and top management support which can be enhanced by top management	Use of one source of information which may likely have yielded subjective biased data	Paid attention to management support as a moderating variable between M & E strategies-performance relationship. The study was in a Kenyan context and in the dairy industry

Oke and Idiagbon-Oke (2010)	-M & E communication channels, Innovation Task and projects performance in Nigeria -Focused on project managers of sampled projects	-Quantitative study approach -Simple random sampling design -Correlation analysis -Structured questionnaire	Choice of M & E communication channels and communication frequency had a correlation with projects' performance. -innovation task had a positive moderation influence on the relationship between M&E communication strategies and projects' performance	-Data obtained were limited to a single source which could be subjective and bias-laden -The study used only one type of data collection instruments hence no data source and instruments triangulation for cross validation	Use of both qualitative and quantitative data collecting methods for more validated result findings. Unlike this reviewed study, the current study considered M & E communication channels as an indicator of M & E communication strategy for a wider study scope for more comprehensive information.

Sanginga, and Tumwine, (2001)	Evaluation and Monitoring practices on dairy productivity of urban areas of Kampala and Gulu, Uganda	Comparative study, on 64 dairy farms in Kampala and 188 farms in Gulu, Uganda. The study was approached quantitatively. Use of descriptive survey design -non-probability-sampling, Anova and Kruskal Wallis, for analysis and hypothesis testing	Study showed significant differences between Kampala and Gulu in dairy performance. Different evaluation practices, use of modern technology, training of the M & E team, and frequent reporting of M & E findings were used in the two study areas. A positive correlation was found to exist between variables in the two cases.	Use of a single study approach-thus restricting the study to only quantitative designs and data collection instruments	Focused of one study area which was more comprehensive and detailed than a comparative study to inform other studies. The findings were from a different context which could not compare with a rural setting. Use of a mixed method approach helped the researcher expand on the results of one approach using the evidence of the other. This study focused on performance of dairy primary cooperatives societies to inform other studies with similar interests.
Chibande, Ortmann and Lyne, (2009)	Institutional and governance factors affecting performance of selected small-holder dairy cooperatives in KwaZulu, Nigeria	Qualitative approach survey design probability simple random sampling Closed and Open-ended questionnaire **Study respondents**	Governance factors-board composition, funding strategies, planning and evaluation all had positive and significance on performance of the dairy cooperatives. Resource mobilization and member incentives	Use of a single research approach and one data collection tool. influence of each independent variable on the dependent variable could have been due to one or more of the other	Use of a mixed method approach to gather information from the study respondents Study of heterogeneous respondents for data source triangulation Knowledge addition on M & E strategies as a business value driver as per the

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| | | Two dairy cooperatives, six dairy cooperatives' officials, and ninety one smallholder dairy farmers | had a positive but not significance correlation with performance

Recommendation.

Need to include management support activities in the value chain

Need to take into account monitoring and control which are important business value drivers. | independent variables-

the study did not attempt to test for multicolinearity | recommendations.

Moderating of M&E-performance relationship with management support to find out whether it can be used to strengthen the relationship.

The study used standard measurements of Tolerance and Variance inflation Factor (VIF) to diagnose co linearity |

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

The methodology which was used to examine the research questions and test hypotheses is outlined in this chapter. The chapter begins by briefly exploring the context of the study followed by a description of the site selection, sample size and sampling procedures, data collection methods, data analysis techniques and the pilot study. The chapter concludes with an overview of how the research results will be presented.

3.2. Research Paradigm

A paradigm, sometimes known as a worldview is a philosophical position of interrelated assumptions shared among researchers that provide a framework that guides the researcher in the selection of tools, instruments, participants, and methods used in a study (Biesta, 2007). The most common paradigms as per the literature are positivism, social constructivism, and pragmatism. For the purpose of this study, the researcher adopted a pragmatism paradigm which is not only the most interpretable and comprehensive, but incorporates a theoretical lens and is widely accepted among the established mixed methods researchers (Creswell and Plano Clark, 2011; Chen, 2012).

This study approach helped the researcher to reach a large audience; dairy farmers, dairy primary cooperative board of management members and M & E team members. At the same time, this approach allowed a presentation of more divergent views and a simultaneous answering of both exploratory and confirmatory questions in accordance with Schulenberg, (2007). The use of a mixed method approach opened the door to multiple methods, different worldviews, and different assumptions, as well as to different forms of data collection and analysis which enabled the researcher to see the same phenomenon from different perspectives in order to understand the problem and study gaps more completely.

3.2.1 Research Design

A research design is a plan that outlines how the research study will be conducted. It serves as a guide to data collection and analysis. The current study adopted a mixed method approach in which multiple viewpoints, perspectives positions, and standpoints were considered using both qualitative case study and quantitative survey study designs and perspectives (Onwuegbuzie and Tuner, 2007). Rasairo, (2010) adopted a similar approach in a study of institutional factors on the performance of farmers' company in Sri Lanka.

Qualitative studies are recommended for exploring and describing phenomena and underlying concepts. Tehereni, (2015) recommends a qualitative approach to gather in-depth opinion from the respondents. An in-depth analysis of the dairy primary cooperative societies would expose the causes of their performance or underperformance. Case studies as claimed by Robert, (2016) have high levels of conceptual validity in identification and measurement of indicators that best represent the theoretical concepts intended by the researcher. For these reasons, a case study design treating each dairy primary cooperative society as a unit of analysis was deemed appropriate for this research study. Each dairy primary cooperative society has its own stakeholders and its own sources of data and for this reasons, each dairy primary cooperative society was treated as a holistic unit of analysis. The components of the dairy primary cooperative societies' management triangle were treated as sub-units within each holistic case to provide data at different levels.

A survey is a quantitative design that aims at collecting data from a larger population to describe their characteristics and also test the significance of the observations made (Gakuu, Kidombo and Keihuro, 2018). A cross-sectional survey design, mainly post factor descriptive survey, observational survey and descriptive correlation were used along with the case study design to investigate the influence and the relationship between monitoring and evaluation strategies, management support, and performance of the dairy primary cooperative societies in Murang'a County.

A mixed method study approach has its own strength as analyzed by Anthony and Julie, (2011). Use of this approach helped the researcher compare quantitative and qualitative forms of evidence to confirm, cross-validated, and corroborate findings

within the study. It also helped in the identification of discrepancies between the different data sources which enabled the researcher to expand on the results of one form of the data source using the evidence of the other. The study used both qualitative and quantitative methods for well validated and substantiated findings as a result of offsetting the weaknesses inherent within one method with the strengths of the other.

The researcher addressed some key challenges regarding research skills, resources, and justification of mixed methods research. Gathering data from different sources of complementary evidence improved internal validity and also selecting the case studies from a sampling frame helped reduce selection bias thus improving the representativeness. To address the lack of skills in qualitative research, the researcher deliberately got familiarized with qualitative research techniques through extensive reading of qualitative articles and books.

3.3 Target Population

A population is a group of individuals who have the same characteristics that the researcher can identify and study (Creswell, 2012). It is that aggregation of elements from which the sample is actually selected. This study targeted the dairy primary cooperative societies operating in Murang'a County and registered with Murang'a County Creameries (MCC). Initially as per the records, there were 35 registered dairy primary cooperative societies operating in Murang'a County. A consultation with the MCC officials at the time of study revealed that out of the 35 established DPCS, 28 were in operation but only 23 were active and loyal to the MCC. The 23 dairy primary cooperative societies along with their members were identified from their geographical distribution using information from the Murang'a County Creameries offices. The dairy farmers registered with the dairy primary cooperatives within the Murang'a county constituents were 39,439 as indicated in Table 3.1.

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Table 3.1 Distribution of dairy farmers in the dairy primary cooperatives in Muranga County constituents

Murang'a Sub counties	Number of DPCs	Number of dairy farmers
Gatanga	4	3321
Kandara	4	4781
Kiharu	1	1142
Mathioya	1	1108
Kigumo	5	9809
Maragwa	4	8261
Kangema	1	1883
Kahuro	3	9133
Total	**23**	**39439**

Other stakeholders of the dairy primary cooperative societies comprised of the management officials and the monitoring and evaluation team who together with the dairy farmers made the study target population. The categories of the study target population distribution are shown in Table 3.2.

Table 3.2:   Distribution of study population

Dairy cooperatives' Stakeholders	Target Population
Dairy farmers	39439
Management officials	3
M & E Team members	6
Total	**39448**

3.4 Sample Size and Sampling Procedures

This section presents the method that was used to determine the study sample size. The sampling techniques that were used to select the study sample are also described in this section. The sampling in mixed methods research needs sampling that is a combination of characteristics typical of qualitative and quantitative sampling (Wambugu, Kyalo, Mbii and Nyonje 2015). In accordance to this observation, the

present study used both probability and non-probability sampling techniques to come up with a representative study sample.

3.4.1 Sample Size

A sample size of 276 dairy farmers was selected based on the formula adapted from Nassiuma (2000). Suitable informants were selected from each stakeholder category. Guided by Barbour, (2008) suggestion, the study key informants, three management officials and six M & E team members were purposively selected to reflect the diversity and to obtain valuable data through an in-depth interview and focus group discussion respectively. After the analysis of quantitative data obtained from the dairy farmers, the researcher realized the presence of neutral response cases and therefore sought to collect more data from a different group of the dairy farmers and with similar characteristics to cross-validity the earlier obtained quantitative data. For the purpose of validating the quantitative data obtained from the sampled dairy farmers, some other eight dairy farmers each one from the eight Muranga sub-counties were conveniently selected for a follow-up of the in-depth interview results using a telephone interview.

The following formula adapted from Nassiuma was used to calculate the sample of the this study

$$n = \frac{Ncv^2}{cv^2 + (N-1)\ e^2}$$

Where,   **n = sample size, N= population size**

Cv= coefficient of variation

e = standard margin error

$$= \frac{39439 \times 0.25^2}{0.25^2 + (39439 - 1)\ 1.5^2}$$

$$= \frac{2464.9375}{8.93605}$$

$$= 275.8419 \quad = \quad 276$$

Nassiuma recommends a margin error ranging between 1.5% and 5% and coefficient of variation ranging between 20% -30%. For this study N = 39,439 dairy farmers registered with the DPCS in Murang'a County. The study sample was calculated at 25% coefficient of variation and 1.5% margin of error. The choice of coefficient variation was informed by the fact that coefficient of variation indicates how scattered about the mean a given set of data is.

The study sample size from each of the study target population category is shown in Table 3.3.

Table 3.3: Sample Grid

DPCs stakeholders categories	Target Population	Sample size
Dairy farmers	39439	276
Management officials	3	3
M & E Team	6	6
Total	**39441**	**285**

3.4.2 Sampling Procedures

The dairy milk producers were not uniformly distributed in the eight Murang'a county constituencies. For the purpose of representativeness, the researcher used proportionate simple random sampling designs to select the 276 dairy farmers from the eight Muranga sub-counties. This is shown in Table 3.4

Table 3.4: Sample Size Distribution

Sub Counties	No. of registered Dairy Farmers	Sampled Dairy Farmers	
Kangema	1883	(1883/39439) ×261=	13
Kandara	4781	(4781/39439) ×261=	32
Gatanga	3532	(3321/39439) ×261=	23
Kiharu	1140	(1142/39439) ×261 =	8
Kahuro	7907	(9133/39439) ×261=	52
Maragwa	8261	(8261/39439) ×261=	55
Mathioya	1108	(3173/39439) ×261=	21
Kigumo	10827	(985/39439) × 261=	72
Total	**39,439**		**276**

The DPCS monitoring and evaluation team is directly linked to the monitoring and evaluation strategies which is the study predictor variable. For data source triangulation, all the six M & E team members were censured in to participate in the focus group discussion. For the management officials, a non-probability sampling design was used to specifically sample the individuals rich with management information necessary for the current study. Guided by Barbour, (2008) suggestion, the operational manager, human resource manager, and the quality assurance manager were purposively selected as the key informants to reflect diversity and to obtain valuable data through an in-depth interview. A follow up telephone interview was conducted with a sample of dairy farmers conveniently selected. Rahi, (2017) commends convenience sampling to enable data collection from closely and easily accessible respondents.

3.5 Research Instrument

This section describes the instruments that were used for this study, how the pilot study was conducted and how validity and reliability tests of the instrument were carried out. Creswell, (2012) indicates that research instruments are the tools used in the collection of data on the phenomenon of the study. The researcher collected data using a questionnaire, interview guide, focus group discussion guide, document analysis, and observation guide as indicated in the Appendices II, III, IV, V, and VI.

This study used both open and closed-ended questions to gather primary data from the dairy farmers. A questionnaire according to Orodho, (2009) is a list of standard questions prepared to fit a certain inquiry. Open-ended items provided the respondents with an opportunity to articulate perspectives on the topics in their own words. Items of some constructs in the questionnaire applied a five-point Likert type scale with the responses ranging from strongly disagree, disagree, neutral, agree and strongly agree on a 1,2,3,4 and 5 rating scale.

The Likert scale helped to test the attitude of the respondents towards the study variables. In order to provide logical ordering to be understood by the respondents, the questions were purposively grouped together by the five themes highlighted in the literature review. The questionnaire was used for this study to allow respondents

respond to the questions at their pace and availability. Furthermore, a greater sense of anonymity and a lower chance of biases were provided.

The questionnaire contained six sections inclusive of some open structured items. The five main sections according to the research objectives had five scale Likert-types of items. Likert type scale is a summative method to measure attitudes introduced by Likert in 1932 (Prasad, 2016). This method has the capacity to measure the attitude of the respondents easily and also to make statements to capture the essence of a specific study construct. A similar scale has been successfully used by previous scholars. Ng'ang'a, (2014) used this type of scale in the study of organizational performance in government ministries in Kenya. With the assumptions that the Likert-type data was equidistant, continuous, and from a normally distributed sample, this study applied the parametric methods of data analysis in line with Lantaz, (2013). However, non-parametric methods were used for the categorical data outside the Likert scale.

The focus group discussion guide was used to triangulate responses from both qualitative and quantitative instruments. This instrument was used on the M & E team members to establish the relationship of monitoring and evaluation strategies, management support and performance of the dairy primary cooperative societies. The possible probing questions touched on all the five study variables.

An observation guide contained a standardized measuring tool for rating performance of the dairy cooperative societies which helped the researcher to rate performance depending on the study performance indicators. Olsen, (2004) raised their concern on the subjective nature of this data collection tool which may make it difficult to analyze the field data. To mitigate for this, the researcher ensured the performance indicators' measuring tool was standard and well-validated to minimize chances of bias results.

Document analysis guide was used to collect recorded information about the dairy primary cooperative societies and of importance to the study. Documentary records provide an important source of secondary data. The researcher used management records availed from the concerned offices, for example Ministry of Agriculture offices, Murang'a County Creameries' management offices and milk production records from the dairy primary cooperative societies' sub-county offices. The

secondary data both supplemented and triangulated the primary data obtained from the study respondents.

Primary data was collected from in-depth interviews on the dairy primary cooperative societies' management officials. The interview was informed by an interview guide (Appendix 111). Interview guides are recommended to keep the interview focused and to ensure the key topics are not overlooked (Burns, 2009). Unstructured and open-ended questions were applied in the interviews to create an avenue through which participants voiced their subjective viewpoints. The interviews were recorded and transcribed with the subjects' consent. The qualitative responses provided a preliminary picture of the performance of the primary dairy cooperatives.

3.5.1 Pilot Testing of the Study Instruments

For the current study, before administration of the data collection instruments, the researchers pilot-tested the instruments by using a representative sample from Githunguri dairy cooperative society. In pilot testing, there is some variation of opinion on the sample size of the group selected for this task. Neuman, (2017) simply suggest a "small set of respondents" while others are more specific: For surveys, Monette, Sullivan, DeJong, (2013, p.98) suggest that "a small part of the sample, of about 20 people, should be contacted and interviewed".

For the purpose of this study, twenty dairy farmers registered with Githunguri dairy cooperative society were simple randomly selected to help determine the degree of clarity of the questionnaire items and also to refine the instruments. The process of refinement was necessary so as to determine the difficulty level of the items in the instruments, check the difficulty of the language used, estimating the time allocation for items and to enhance the validity and reliability of the items with accordance to (Heukelon, 2009). Data collected from the pilot study was analyzed using preliminary statistical methods with the help of SPSS software.

3.5.2 Validity of the Research Instruments

Quantitative researchers should ensure that scores received from the respondents are significant indicators of the constructs. This can be ensured by validating the research instruments which involves assessment of construct and content validities. In this study, for construct validity, the researcher used multiple sources of evidence and any

recorded data was reviewed to ascertain its authenticity. This is in line with recommendations by, Sekaran, (2003 p. 48), that 'construct validity is established by using multiple sources of evidence, maintaining a chain of evidence, and having a key informant review the draft report or through member checking. Technical terms were explained and the researcher translated the study's interview questions where needed to avoid misrepresentation of facts. Triangulation was also devised to achieve construct validity.

To ensure content validity, the quantitative instruments were subjected to scrutiny by the researchers' peers as recommended by Creswel, (2012). One group assisted in assessing the variables to be measured by the instruments, while the other one helped in determining whether the set of items were accurately representing the variables under study. Results of pilot testing were also used to validate the instruments especially in the adjustment of language and modification of the questions.

For the accuracy of qualitative findings, various strategies in line with Creswell and Miller, (2000) were applied; triangulating different data sources of complementary evidence to improve internal validity, spending prolonged time in the field and also using a peer debriefer to review the qualitative questions so that the account would resonate with people rather than the researcher. The prescribed interviews were presented to the respondents to verify and confirm the contents therein.

3.5.3 Reliability of Instruments

A quantitative instrument is reliable to the extent that it measures whatever it is measuring consistently with minimal measurement errors. Reliability of the research instruments was assessed in terms of reliability coefficient. According to Frankel and Wallen, (2008), reliability coefficient value of above 0.65 is sufficient for a social science research. The reliability of the Likert scale items in the questionnaire was determined using Cronbach Alpha (α). It was used to measure the internal consistency based on the average correlation among the items on the scale. Cronbach Alpha is expressed as a correlation coefficient ranging in value from 0 to +1. The closer alpha is to 1.0 the greater the internal consistency of the items in the scale. For this study, the sizes of α were determined by both the number of items in the scale and the mean inter-item correlations based upon the following formula:

α = kr /1+ (k-1) r

Where; k = Items in the scale

r = Average correlation between the pairs of items.

The accepted minimum level of Cronbach Alpha coefficient is 0.7. George & Mallery (2003) provide the following commonly accepted rules of thumb: α ≥ 0.9 – Excellent; 0.9 > α ≥ 0.8 – Good; 0.8 > α ≥ 0.7 – Acceptable; 0.7 > α ≥ 0.6 – Questionable; 0.6 > α ≥ 0.5 – Poor and 0.5 > α – Unacceptable. Therefore, ideally, the Cronbach Alpha coefficient of a scale should be at least acceptable, that is, above 0.7.

Reliability of the observation guide was estimated using an inter-rater method. Inter-rater method assesses the degree to which different raters/observers give consistent estimates of the same phenomenon. The researcher and the research assistant made observations at the same time and then correlated the ratings. An inter-coder agreement was used to ensure the reliability of the interview guide and the document analysis guide. This was done by having two researcher's colleagues in a PhD class code the responses and then compared their work to determine whether they had arrived at the same themes or different ones. Creswell, (2009) referred this method as inter-coder agreement method.

3.6 Data Collection Procedures

In the data collection procedure, the researcher prepared a research project proposal with constant consultation with the two assigned university supervisors. The research project proposal was presented to a panel appointed by the University of Nairobi at the department and school levels for approval and permission to collect the data on the phenomenon of the study. Once this was granted, the researcher applied for a permit from the National Council for Science and Technology. The permit was then presented to Murang'a County Creameries where an introduction letter was issued upon which the researcher proceeded to the field for data collection but after validating the research instruments.

To collect the primary data from the sampled dairy farmers and the M & E team members, the researcher with a trained research assistant distributed the questionnaire for response and collected them back after two weeks. For the key informants, the

researcher had to book an appointment with the sampled key informants to respond to the interview questions. The focus group discussion with the M & E team was conducted on an arrangement with the concerned respondents.

Obtained data from the field was summarized and analyzed after which a report on the same was prepared subject to the supervisor's corrections ready for the final defense. A complete report of the field work on the study variables was then presented to the university panelists. The panelists' credit on the report presentation was to acknowledge for the Doctorate award.

3.7 Data Analysis Techniques

The purpose of conducting a study is to produce findings. In order to do so, data should be analyzed to transform it into findings. In this study, data were analyzed using both qualitative and quantitative methods depending on the data type. Qualitative data were analyzed thematically whereby the qualitative raw data from the field notes, observation and interview were transcribed and organized into easily retrievable sections. The obtained data was thoroughly revised to obtain an overall and comprehensive impression of the content and context. The resulting information was then indexed using keywords and phrases to develop themes and categories.

Quantitative survey data were analyzed by use of descriptive and inferential statistics. The quantitative data were described numerically using mean and standard deviation. The questionnaire likert type data were first converted from continuous to categorical data to enable computation of correlation and regression coefficients. The main objective of the descriptive analysis was to understand the profile of the respondents and the proportion of the respondents' responses on the questionnaire statements. Further, the Pearson coefficient Correlation analysis was done to describe the degree and direction to which one variable was linearly related to one another. The strength of the correlation coefficients was interpreted using Cohen and Clereland, (2013) decision rules where 0.1- 0.3 signaled a weak correlation, 0.3 - 0.5 indicated moderate correlation strength with a strong correlation between variables 0.5 and above correlation coefficient. A similar application was done by Muchelule, (2017) in a study on monitoring and evaluation and performance of social development projects in Bunyala, Kenya.

3.7.1 Regression analysis

This is a measure of the ability of the independent variables to predict an outcome of the dependent variable in presence of a linear relationship between them. For the case of this study, regression analysis was applied to establish whether monitoring and evaluation strategies of the study focus and management support predicted the performance of the dairy primary cooperative societies in Murang'a County. These tests were then used to explain the variations in the dependent variable.

To determine the collective influence of the independent variables on the performance of the dairy primary cooperative societies, a multiple regression analysis was used in which all the independent variables were entered in the model. Consequently, the moderating influence of management support variable on the relationship between M & E strategies and the dairy primary cooperatives' performance was analyzed by use of a hierarchical regression analysis where the influence of M & E strategies was examined after being interacted with the management variable. This helped check whether management support would significantly improve the ability of the model to predict the outcome.

To ensure that influence of each independent variable on the dependent variable was not as a result of one or more of the other independent variables, collinearity diagnostics were carried out using standard measurements of Tolerance and Variance Inflation Factor (VIF) as specified by Stevens, (2006) and Tabalachnick and Fidel, (2001). This helped to find out whether two or more study variables were very closely related. According to Hutcheson and Sofronie, (1999) the values of VIF should be less than 10 with a tolerance value of less than 0.1. Garson, (2008) states that inter collinearity, among variables of more than 0.8 indicates a possible problem of multicollinearity.

Similarly, despite the assumption of the population distribution normality, this current study conducted a normality test using Shapiro-Wilk test statistics to determine the sample size distribution. Based on the assumption of the classical linear regression model, the researcher held that there would be no issues of heteroscedasticity since the data had been assumed to be linear.

3.7.2 Statistical Regression Models and Hypotheses Testing

For this study, the hypothesis test was done through the t-test using the p-value approach at 95% confidence level based on linear regression analysis output produced by SPSS. This study considered the decision rule that the null hypothesis should be rejected if calculated p-value was less than the significance level (0.05). In case the calculated p-value was greater than the significance level, the null hypothesis was to be retained.

For the study hypotheses $H1_1$, $H1_2$, $H1_3$, and $H1_4$, simple linear regression models were used to determine whether individual predictor variables would predict the study outcome variable. Similarly, a multiple regression model was used to determine the influence of the combined M & E strategies on the DPCS performance. The statistical regression model was used to help determine the change in the outcome variable resulting from a unit change in the predictor. In the statistical model, the actual values represent the dependent variable (Y) while the predictor values represent the independent variable as shown in the following section.

Simple Regression Model 1 → $Y= b_0 + b_1 X_1 + \varepsilon$ where:

> **Y** is the dependent variable (Dairy Primary Cooperative Societies' Performance)
> b_0 and b_1 are constant/ regression parameters
> X_1 is the predictor variable (M & E Planning Strategy)
> ε is the error term

Hypothesis $H1_1$: There is a significant influence of M & E Planning Strategy on Performance of Dairy Primary Cooperative Societies in Murang'a County, Kenya.

Simple linear Regression Model 2 ⟶ $Y= b_0 + b_2 X_2 + \varepsilon$

X_2 is the predictor variable (M & E Team Strengthening Strategy)

Hypothesis $H1_2$: M & E Team Strengthening Strategy has a significant influence on Performance of Dairy Primary Cooperative Societies in Murang'a County, Kenya.

Simple linear Regression Model 3 ⟶ $Y= b_0 + b_3 X_3 + \varepsilon$

Hypothesis H1$_3$: M & E Communication Strategy has a significant influence on performance of Dairy Primary Cooperative Societies in Murang'a County, Kenya.

Simple linear regression Model 4 $\longrightarrow$ **Y= b$_0$+b$_4$ X_4 +ε**

Hypothesis H1$_4$: There is a significant influence of Management Support on the performance of Dairy Primary Cooperative Societies in Murang'a County, Kenya.

Multiple linear regression model 5 $\longrightarrow$ **Y= (b$_0$+b$_1$x$_1$+b$_2$x$_2$+b$_3$x$_3$) + ε**

Where:

Y =dependent variable (Dairy Primary Cooperatives Performance)

b$_1$ $_=$ coefficient of the 1st predictor X$_1$ (M & E Planning Strategy)

b$_2$ $_=$ coefficient of the 2nd predictor X$_2$ (M & E team strengthening strategy)

b$_3$ $_=$ coefficient of the 3rd predictor X$_3$ (M & E communication strategy)

Hypothesis H$_5$: There is a significant influence of M & E strategies on the performance of dairy primary cooperative Societies in Murang'a Count, Kenya.

Hierarchical regression model 6

Hypothesis H1$_6$: Management support has a significant moderating influence on the relationship between monitoring and evaluation strategies and performance of dairy primary cooperatives in Murang'a County, Kenya.

For the moderating influence on independent-dependent variable relationship, a hierarchical regression analysis was used in which three steps were involved. In the first step, a multiple regression model involving a combination of the study predictors (M & E strategies) was used to predict the outcome variable (dairy primary cooperatives performance).

y= (b$_0$+b$_1$x$_1$+b$_2$x$_2$+b$_3$x$_3$) + ε

In order to find out whether the management support (moderating variable) would contribute to the ability of the model to predict the outcome, as a second independent variable it was included in the above multiple regression model to examine whether it would make a statistical significant contribution in the predictive power of the model.

$$Y= (b_0+b_1X_1+b_2X_2+b_3X_3+ b_4 X_4) + \varepsilon$$

Where:

b_4= coefficient of the moderating variable X_4 (Management Support)

Step three involved interactions between the management variable and the predictors of the study together with the interaction term to test on whether management support has any positive interaction on the M & E strategies towards influencing performance of the DPCS.

$$Y= (b_0+b_1X_1+b_2X_2+b_3X_3+ b_4M_4 +IVMV+\varepsilon)$$

(IV×MV) is the interaction term

Interaction term is a product of the independent variables and the moderator which should be integrated in the analysis so that the moderator effect can be interpreted concerning its slope and significance (Cohen et al., 2003). Any change in the R^2 would indicate a statistical influence of the independent and dependent variable by the moderator variable.

The qualitative data was managed in a manner which ensured that the data was broken into discernable units to show patterns and trends. Inductive data analysis was used to analyze qualitative data from the interview guide, focus group discussion guide, document analysis guide and observation guide. Data generated from these instruments were in words which were first pre-analyzed through transcription then edited to ensure precise explanations without distorting the meaning. The researcher finally created categories and themes in relation to the independent variables of this study in order to assign them to the established themes. Finally, the resulted data was then presented thematically and in verbatim manner as explicated by the respondents.

3.8 Data Presentation

Both qualitative and quantitative data were presented in separate sections but the analysis and interpretation combined the two forms of data to seek convergence among the results. The results of the two approaches were integrated during the interpretation phase. The interpretation would either note the convergence of the

findings as a way to strengthen the knowledge claims of the study or explains any lack of convergence that would result.

3.9 Ethical Considerations

The major ethical considerations during the research process comprise of addressing the unethical research practices in order to shun harming research respondents or invading their privacy, seeking informed consent, as well as avoiding using deception (Bryman, 2008). The key concern of ethics in qualitative research is the respect and protection accorded to the respondents taking place in the study (Christians, 2009). Some uncertain practices like intruding into people's privacy, or manipulating by extending inducements, were matters of apprehension that the study required to address.

In this study, the researcher ensured that there was utmost caution in the administration of data collection instruments to the respondents towards ensuring respect to their rights and privacy. Similarly, data gathering was carried out in a way that they guaranteed upholding complete anonymity and confidentiality of the participants. In this respect, there was complete close scrutiny of the interview transcriptions and editing to ensure the responses given by participants did not in any way suggest or reveal their identities.

Before the instruments were administered, the researcher and the research assistant explained the study's aim and purpose to the participants in a well-understood language. Requests for accessibility as well as permission of conducting interviews were sought according to the existing procedures and protocols as outlined by the DPCS as well as aligning them the right human subject review guidelines and policies. Actual names of respondents and cooperatives directly linked to them were not revealed at any stage in this study. The questionnaires were coded using numerical codes to ensure confidentiality, instead of using names and there was no forcing of the respondents into taking part in the exercise. The presentation of the study findings was done without any data manipulation form intended to favor the researcher's expectations.

Table: 3.5: Operational Definition of the Study Variables

Objectives	Variables	Indicators	Measuring levels/data type	Tools of data collections	Type of data analysis
To investigate the influence of M & E strategies on performance of Dairy primary cooperatives societies in Murang'a County	Dependent variable Performance of Dairy primary cooperatives societies	-consistence in milk delivery to the processor - dairy farmers' income -Membership enrollment -dairy farmers satisfaction with the dairy primary cooperatives	Interval data Parametric statistics Categorical data Non parametric	-Questionnaire	Descriptive analysis, Inferential analysis Correlation and regression
To establish the influence of M & E planning strategy on performance of Dairy primary cooperatives in Murang'a County.	Independent variable Planning for M & E strategy	M & E resource acquisition. Dairy primary cooperatives M & E budget allocation Involvement of the stakeholders	Interval (Parametric)	-Questionnaire -Observation guide -Focus group discussion guide -interview guide	Pearson correlation, Regression thematic analysis
To examine the influence of M & E team strengthening strategy on performance of Dairy primary cooperatives in Murang'a County.	Independent variable Strengthening of M & E team strategy	-Definition of M & E roles and responsibilities- -Size of the M & E team -Training of M & E team for skills	Ratio interval (parametric)	-Questionnaire -Interview guide -Focus group discussion guide	Descriptive Inferential- Paired sample t -test Thematic analysis

To determine the influence of M & E communication Strategy on performance of dairy primary cooperatives in Murang'a County.	Independent variable M & E communication strategy	-Communication mode of the M & E findings -Frequency of data reporting -Communication channels diversity	Interval, Ratio (parametric statistics)	-Questionnaire -Interview guide -focus group discussions -Questionnaire -In-depth interview -Questionnaire	descriptive analysis inferential analysis Thematic analysis
To establish the moderating influence of Management Support on the relationship between M & E strategies and performance of the dairy primary cooperatives	Moderating variable Management support	-Motivation of the M & E team -Availability of opportunity to perform -Availability of ability to perform	Interval (parametric) Interval (parametric)	-Questionnaire -Interview guide -FGDs guide -Questionnaire -FGDs guide Questionnaire FDGSs guide	Descriptive Inferential- Paired sample t-test Thematic analysis

CHAPTER FOUR

DATA ANALYSIS, PRESENTATION, INTERPRETATION AND DISCUSSION

4.1 Introduction

This chapter covers the data analysis, presentation, interpretation, and discussion of the relationship of the study variables under investigation. For the preliminary analyses, normality tests, reliability, multicollinearity, and Heteroscedasticity tests were performed. Descriptive analysis was done to describe the respondents' demographic profile whereby frequencies, percentages, means and standard deviation were used. To establish the strength, direction and significance of the relationship between the study variables, Pearson Product Moment Correlation coefficient, and coefficient of determinations were computed. To add meaning to the descriptive data, an inferential analysis was done whereby a paired-sample t-test was used to compare the means between the study variables from the respondents. The null hypotheses were tested in order to derive a conclusion from the study.

4.2 Questionnaire return rate

Out of the 270 received questionnaires from the 276 issued to the respondents, nine of them had more than 10 % missing answers and therefore they were dropped in accordance to Doug and Pend, (2013) advice. As a result, 261 responses were considered to be usable for this analysis translating to 94.6 % average return rate. The findings are presented in Table 4.1

Table 4.1: Response Rate of the study respondents

Respondents	Questionnaires distributed	Returned-usable questionnaires	Response-rate (%)
Dairy farmers	276	261	94.6

4.3 Demographic Information of the Respondents

Percentage analysis was one of the statistical measures used to describe the sample in terms of their demographic characteristics such as age, gender, educational qualifications and number of years of membership experience in the dairy cooperative societies. Although this was not central to the study purpose, it helped the study contextualize the findings and formulate appropriate recommendations to enable more dairy cooperative societies to utilize monitoring and evaluation findings for improved performance.

4.3.1 Distribution of the Respondents by Gender

The study was interested in establishing the distribution of the respondents by gender. The findings are presented in Table 4.2.

Table 4.2: Distribution of Dairy Farmers by Gender

Gender	Male	Female
Male	166	63.6
Female	95	36.4
Total	261	100.0

Of the total dairy farmers studied, 63.6% (166) were males while 36.4% (95) were females. The participation of women as members of dairy cooperatives in the study area was minimal. The sample was drawn from Murang'a County, where animal raring was more associated with the male gender. More so, dairy farming is labor intensive and therefore more male are likely to engage more than the female gender that are culturally tied to the childbearing and other associated domestic roles. The findings concur with those of Aganga and Nsoso, (2011) where dairy ownership in Botswana was skewed towards male ownership as a source of income. Similarly, Seresinhe and Marapana, (2011) noted that women and children were primarily responsible for dairy management while men were responsible for the marketing of their products. However, the gender representation was adequate for the objectivity of this study.

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4.3.2 Distribution of Dairy Farmers by Age

The age of the dairy participants is of essence when it comes to dairy performance. The study findings are indicated in Table 4.3.

Table 4.3: Distribution of the Dairy Farmers by Age Bracket

Age bracket	Frequency	Percentage
29 and below	15	5.8
30-49	34	13.0
49-50	64	24.5
50 and above	148	56.7
Total	**261**	**100.0**

Table 4.3 indicates that 56.7% (148) of the studied dairy farmers were above 50 years of age, 24.5 % (64) between 40 and 49 years of age and 13.0 % (34) ranging between 30 and 39 years. It is also to be noted that the percentage of the dairy farmers below the age of 29 years was only 5.8% (15). This observation showed that dairy farming was embraced by mature adults mainly to generate income for future survival. As observed from chapter one, the dairy industry is considered as a major employer of the adult farmers in and even outside Kenya (DFID, 2010). Similarly, order farmers are deemed more experienced than young farmers (Chege and Bula, 2015). In contrast, a study by Hasnah, (2014) in India found out that dairy farming was done by young energetic farmers and of reasonably higher education with an understanding of adoption and use of advanced dairy technology. The study noted that young participants of creative age are energetic, risk-takers, and work long hours and are also armed with the most updated skills. However, the study by Baltenweck and Staal, (2000) found a non-significant relationship between age of the dairy farmers and performance.

The differences in contexts and cultural orientations could attribute to these contradicting observations. A possible explanation for this pattern could be that older farmers are more likely to prefer lesser risk contractual arrangement with dairy cooperatives whereas younger and energetic people may prefer to engage in other alternatives which are non-agricultural related.

4.3.3 Distribution of Dairy Farmers by Level of Education

The education level attained by the sampled dairy farmers is important in that it plays a vital role in the adoption of new dairy farming technologies inclusive of monitoring and evaluation practices which may have a positive influence on the dairy farming performance. The results are indicated in Table 4.4.

Table 4.4: Distribution of Respondents by Education Level

Education Level	Frequency	Percent
No formal education	16	6.2
Primary level	110	42.1
Secondary level	99	37.9
College level	36	13.8
Total	**261**	**100.0**

Results indicate that majority of the sampled dairy farmers had a basic education; 42.1 % (110) had attained up to primary education level, 37.9 % (99) up and including secondary school level, 13.8 % (36) had various skills from their college level education. Only 6.2 % (16) of the dairy farmers were identified to have had no formal education and therefore could not read or write. However, the research findings show that majority of the sampled farmers were knowledgeable and with support could understand and adopt M & E strategies involved in the dairy industry to enhance dairy performance.

Education level determines the ability of the respondents to comprehend the survey questions and consequently use of the findings for performance improvements (Murphy & Myors 2004). It would also contribute towards the dairy farmers understanding the different facets of the DPCS performance in the case of this study. In the central Kenya, both formal and non-formal education has been identified as a major contributor to the performance of community development projects (Gibbs, 2005). The author claimed that education enhances skills which lead to income and spurs invention and innovation resulting in rapid growth and development.

4.3.4 Distribution of Dairy farmers' by length of membership in the DPCS

The study sought to determine the length of membership of the sampled farmers in the dairy cooperatives. This would help to ascertain the extent their responses would be relied upon for valid conclusions based on experience. Results are shown in Table 4.5

Table 4.5: Dairy Farmers Length of Membership/Experience

Length-of membership	Frequency	percentage
Less than 1 year	17	6.5
1-2 years	59	22.6
3-4 years	72	27.6
Above 4 years	113	43.3
Total	**261**	**100.0**

From the findings, 43.3 % (113) of the respondents were in the dairy primary cooperative societies for more than four years, 27.6 % (72) between 3-4 years and 22.6 % (59) between 1 and 2 years. The dairy farmers who were less than 1 year old were only 6.5% (17) an indication that dairy farmers were still joining the dairy primary cooperative societies despite the low enrolment rate. From the frequency distribution results, most of the sampled dairy farmers had an extensive experience in dairy farming and therefore well versed with performance of the dairy cooperative societies' measurement indicators, a construct of interest to the present study. The experience in the DPCS membership was enough for the dairy farmers to offer valid responses based on a wider knowledge base of the dairy cooperative societies operations.

4.3.5 Dairy Farmers Employment Status

The study sought to understand the employment status of the dairy farmers. The findings are presented in Table 4.6.

Table 4.6: Distribution of Dairy Farmers Employment Status

Employment status	Frequency	Percent
No formal employment	147	56.3
Formally employed	114	43.7
Total	**261**	**100.0**

Table 4.5 indicates that 56.3% (147) of the dairy farmers were not formally employed while 43.7% (114) had formal jobs. There was the likelihood that if the dairy farmers were motivated and especially through the dairy cooperative societies, they would direct all their energy, time and resources in dairy farming thus expanding the DPSC operations for enhanced performance, translating to a positive economic change in the entire County.

The dairy farmers employed in various other fields were 43.7 % which was of benefit to the management of dairy farming and for maximized profits. The dairy farmers' income from other external sources can be used to expand the dairy activities towards improving the dairy societies' performance. Inconsistent to this observation are the results of a qualitative study by Dipros, (2012) which showed that most of the studied dairy farmers were formally employed full time and most had utilized their monthly income to start and expand the existing dairy farming. From this observation, the dairy farmers should be advised to diversify their income generating activities and sources to supplement the dairy farming activities for the performance and sustainability of the dairy primary cooperative societies.

The study sought to establish the average daily milk sold in liters to the cooperative societies by the sampled dairy farmers. The results are shown in Table 4.7.

Table 4.7: Distribution of dairy farmers' milk sold per day to the DPCS

Volume of milk	frequency	Percentage
below 20 litres	43	16.5
11-30	140	53.6
above 51	78	29.9
Total	**261**	**100.0**

Table 4.7 indicates that of the total volume of milk received by the DPCS in a daily basis, 53.6 % (140) was from the dairy farmers with a production of between 21 to 50 litres of milk per day. From the total dairy farmers studied, 29.9 % (78) had a milk production of above 51 liters per day. Never the less, the findings suggest that the DPCS had in-cooperated smallholder dairy farmers into the dairy primary cooperative societies irrespective of the milk production volumes per day as a way of empowering

and protecting them from milk vendors' exploitation. One of the main objectives of the DPCS was to provide collective common markets of milk for all the dairy farmers within the county for a high income and improved living standards. The response of the dairy farmers on their income trend from the milk sales is indicated in Table 4.8.

Table 4.8: Distribution of dairy farmers' responses on income from milk sales

Response	frequency	Percentage
Yes	224	85.8
No	37	14.2
Total	**261**	**100.0**

Results from Table 4.8 indicate that 85.8 % (224) of the sampled dairy farmers had their income increased from milk sales through the dairy primary cooperative societies, while 14.2 % (37) confirmed no realized income increase from milk sales. This however indicates that, dairy farming in Murang'a County is regarded as an income generating activity and through common collective milk market; the dairy farmers' income is assured.

4.4 Tests for Statistical Assumptions

The following statistical and diagnostic tests were conducted to increase the validity of the findings of this study.

4.4.1 Normality Tests

It is important to ensure that the study dependent variable has a normal distribution prior to conducting both descriptive and inferential analyses of the study variables, notably correlations and regressions. The sample of this study being less than 2000 respondents, Shapiro-Wilk (SW) normality test was used to assess the actual degree of departure from normality. Table 4.9 presents normality test results.

Table 4.9: Tests for Statistical Assumptions

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	statistic	df	Sig.
DPCS Performance	.311	261	.200*	.973	261	.200*
M & E Planning	.294	261	.0078	.987	261	.200*
M & E team Strength	.329	261	.093	.681	261	.084
M& E Communication	.165	261	.200*	.928	261	.200*
Management Support	.093	261	.125	.985	261	.088

a. Lilliefors Significance Correction

In Table 4.9, all the SW-test statistics were approaching 1 which is greater than 0.05 and hence the null hypothesis that the population was not normal was rejected. Shapiro and Wilk, (1965) note that the null hypothesis is rejected if the value of W (SW statistic) is too small. Similarly, from the same scholars, the p-values can also be used in SW test to check the data normality. If the p-value is greater than 0.05, the null hypothesis that the study population was not normally distributed is rejected. For this study, the Shapiro-wilk test showed an alpha level greater than 0.05 in all the study variables ($p>0.05$) and therefore the conclusion was that the research population was normally distributed. Generally, the results indicate that all the variables were not significant which is in accordance to the normality assumption.

The normality of the sample was also construed from the values of the Skewness and Kurtosis tests. The results are shown in Table 4.10.

Table 4.10: Skewness and Kurtosis Tests for Normality

constructs	dairy-c'op performance	M&E planning	M&E team strengthening	M&E communication	Management support
Mean	3.6087	3.4107	3.2717	3.7171	3.8301
Variance	0.163	0.129	0.154	0.104	0.184
S.D	0.40323	0.35872	0.39273	0.32322	0.42953
Skeweness	0.269	0.088	0.620	-1.120	-0.204
Kurtosis	0.825	0.222	0.382	2.864	0.119

Table 4.10 shows the overall results of the normality test. Sekaran, (2003) contends that values that fall within the range of -2 to +2 for the Skewness test, and -3 to +3 for the Kurtosis test fall within the normal range. The results indicate that the distribution of the sample is normal and therefore, the study sample was acceptable as a normal distribution from the target population.

4.4.2 Multicollinearity

The linear assumption of multicollineality was also checked before the actual correlation and regression analyses. Bickel, (2007) observes that multicollineality exists in statistics where two or more predictor variables in a regression are highly correlated. In presence of a perfect multicollineality, the model is able to estimate all the coefficients in the best linear unbiased estimates. This present study used variance inflation factor (VIF) to measure problem of multicollineality in the regression model. Baguley, (2012) explains VIF statistic of a predictor in a model as the reciprocal of tolerance indicating the extent of the error-variance for the unique effect of a predictor.

Variance inflation factor according to Cohen and Clereland, (2013) is an index of the increase of the amount of variance in each regression coefficient relative to a situation where variables are uncorrelated. The authors suggest that a VIF of greater than 10 to be the rule of thumb for concluding VIF so large and therefore model not suitable for analysis. In the same line, Runkel et al., (2013) argued that a VIF of greater than 5 between two or more predicator variables signal multicolinearity and therefore one of the predictors must be dropped from the regression model. In a study of monitoring and evaluation practices and projects' performance, Muchelule, (2017) used a VIF index of

less than 4 to set the regression model free from multicolinearity. Results of the collinearity test are indicated in Table 4.11.

Table 4.11: Collinearity Test Results

Model	Collinearity-statistics	
	Tolerance	VIF
M & E Planning Strategy	.888	1.126
M & E Team Strengthening strategy	.818	1.222
M & E Communication Strategy	.767	1.303
Management Support	.996	1.004

a. Dependent Variable: Dairy Coops-Performance

The VIF values from Table 4.11 reflect a VIF index of less than 5 and therefore no the study concludes no existence of multicolinearity between the study independent variables.

4.4.3 Heteroscedansticity,

Heteroscedascity according to Beisland, (2007) is a situation whereby the level of variability of dependent variable with each value of the independent variables is not equal. On the other hand, homoscidansticity suggests that dependent variable has an equal level of variability for each of the values of the independent variables. A heteroscedansticity tests checks the variance in residuals in the regression model. To test for homoscidansticity assumption, Levenne statistics for equality of variances were used. In this approach if the p-value is greater than 0.05, then the null hypothesis (data is not heterogeneous in variance) is not rejected. In case the *p*- value is less than 0.05, then the null hypothesis is rejected.

The present study applied the Levenne statistical test to test for data variance equality. Results are presented in Table 4.12.

Table 4.12: Results for Heteroscidanticity Diagnostic

	Homoscedasticity Levenne Statistic	df1	df2	Sig.
M & E planning strategy	0.400	1	261	0.512
M & E team strengthening	2.216	1	261	0.131
M & E communication	1.163	1	261	0.265
Management support	7.1	1	261	0.057
DPCS performance	1.454	1	261	0.219

Table 4.12 shows the Lavenne Statistics which are greater than the p-value, 0.05. This indicates that the variables are not heterogeneous in variance in that the dependent variable has an equal level of variability for each of the values of the independent variables of this present study**.**

4.4.4 Test for reliability

The study used Cronbach's alpha to test for internal consistency of the questionnaire items. Cronbach's alpha is a function of the average inter-correlations of items and the number of items in the scale. The greater the number of items in a summated scale, the higher Cronbach's alpha tends to be, with the major gains being in additional items up to approximately 10, when the increase in reliability for each additional item levels off (Pallant, 2007). This is one reason why the use of a single item to measure a construct is not optimal. A Cronbach Alpha test was used whereby multiple items to measure the study constructs were used in order to determine the reliability of measurement and to improve the reliability and precision of the measurement. Cronbach alpha for each construct was computed. The results of the Cronbach Alpha test on the statements of the performance of DPCS are shown in Table 4.13.

Table 4.13: Reliability analysis for performance of dairy primary cooperative societies.

Item-Total Statistics for Performance of Dairy Primary Cooperatives

Items		Scale Mean if-Item Deleted	Scale Variance- if Item Deleted	Corrected Item total correlation	squared multiple correlation	Cronbach's Alpha If Item Deleted
a)	training on dairying	100.27	13.110	.584	.738	.581
b)	milk buying price	99.87	14.373	.416	.584	.620
c)	Change in membership	100.67	11.710	.723	.753	.547
d)	milk informal markets	100.13	15.193	.439	.600	.633
e)	Job opportunities	101.81	12.917	.492	.839	.608
f)	constant milk price	99.99	13.110	.584	.738	.591
g)	consistent milk delivery	100.61	13.893	.673	.745	.592
h)	Adequate milk coolers	99.89	14.917	.607	.514	.617
i)	Coolers accessibility	100.17	6.250	.103	.415	.688
j)	timely milk payments	99.83	16.093	.234	.623	.761
k)	Improved milk quality	100.84	21.973	.334	.640	.574
l)	performance expectation	97.56	22.257	.265	.690	.586
	Chronbach alpha					.702

Table 4.13 indicates that the Cronbach's alpha of performance of DPCS items was 0.702, which implies that this study construct was reliable in ensuring collection of credible data. The data items as listed were adequate to ensure reliable data is obtained from the respondents. Reliability of a variable construct goes a long way in ensuring the reliability of the data instrument. The results of the Cronbach's alpha test on M & E planning strategy construct are shown in Table 4.14

Table 4.14: Reliability analysis for M & E planning strategy

M & E planning strategy Statements	Scale Mean if Item Deleted	Scale Variance- if Item Deleted	Corre cted Item- Total Corre lation	squar ed multi ple correl ation	Cronbach's Alpha if item deleted
a) representation in M&E planning	99.99	55.871	.241	.372	.536
b) Involvement in M&E process	100.61	56.814	.127	.362	.549
c) Choosing performance indicators	99.89	56.494	.209	.367	.540
d) M&E as main DPCS activity	100.17	56.246	.187	.238	.542
e) Multiple sources of resources	99.83	57.584	.109	.225	.551
f) Farmers support for M&E	100.75	60.967	.139	.168	.590
g) Initial M&E costing	99.36	58.768	.055	.134	.555
h) representation in decision making	100.41	56.578	.152	.263	.546
i) Timely M&E feedback	99.69	59.197	.027	.234	.557
j) Utilization of M&E reports	100.29	57.304	.115	.508	.551
k) Stakeholders reception to M & E findings	101.1	56.46	.204	.258	.541
l) Findings-utilization	99.68	58.62	.086	.387	.537
Chronbach Alpha					0.57 2

From Table 4.14, the value of Cronbach alpha for M & E Planning construct is 0.572 indicating a good internal consistency of the items. Internal consistency is concerned with the homogeneity of the items comprising a scale and therefore, it can be concluded that the items of this scale have some consistency adequate to ensure reliable data. The

reliability coefficient of Chronbach's alpha for M & E team strengthening strategy is displayed in Table 4.15

Table 4.15: Reliability analyses for M & E Team Strengthening strategy

	Scale Mean-if-Item Deleted	Scale variance if Item deleted	Corrected Item-Total Correlation	squared multiple correlation	Cronbach's Alpha if Item Deleted
a. Appropriate M & E tools	99.99	55.871	.241	.372	.636
b. Adequate M & E persons	100.6	56.814	.127	.362	.549
c. M&E results for performance	99.89	56.494	.209	.367	.740
d. Inadequate internal capacity	100.1	56.246	.187	.238	.542
e. Clear roles and responsibilities	99.83	57.584	.109	.225	.651
f. Frequent capacity building	99.36	58.768	.055	.134	.755
g. Shortcomings in M & E process	100.4	56.578	.152	.263	.646
h. Address of diverse challenges	99.69	59.197	.027	.234	.557
i. Various M & E skills	100.2	57.304	.115	.508	.751
j. Unskilled M & E persons	101.8	56.444	.204	.258	.541
k. Un-upgraded M & E tools	101.1	56.522	.107	.314	.654
l. Use of customized M & E techniques	56.444	56.522	.204	.258	.541
Chronbach Alpha coefficient					.741

Table 4.15 indicates that the reliability coefficient of Chronbach's alpha of the M & E team strengthening strategy was 0.741 which implies that the M & E team strengthening strategy construct was reliable in ensuring collection of credible data. The Cronbach's coefficient of reliability of M & E communication strategy was computed and the results are displayed in Table 4.16.

Table 4.16: Reliability Analysis of M & E team communication strategy construct

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
a. Continuous information flow	87.75	40.508	.281	.327	.668
b. Timely M&E report delivery	88.04	41.464	.149	.237	.586
c. Presence of diverse channels	87.63	42.406	.140	.192	.589
d. Customized for target audience	87.68	41.924	.132	.240	.489
e. Urgency of M&E report	88.61	44.858	-.132	.159	.642
f. Customized M & E formats	87.22	42.767	.109	.131	.592
g. Frequent results communication	88.27	42.221	.078	.185	.598
h. Inability of ICT causes delays	87.54	43.668	.022	.206	.501
i. Open meetings for M&E sharing	88.15	42.459	.071	.452	.699
j. Unavailable electronics	89.69	41.441	.185	.193	.581
k. M&E comncatn resources	88.97	41.119	.107	.282	.495
l. Monthly sharing of findings	9.5	40.07	.221	.350	.373
Chronbach Alpha coefficient					.699

The data items as listed are adequate to ensure reliable data is obtained from the respondents. Reliability of a variable construct goes a long way in ensuring the reliability of entire data instrument. Conclusively, the study constructs are reliable to yield consistent data valid for analysis.

4.5 Performance of Dairy Primary Cooperative Societies (DPCS) in Murang'a County

Performance of the Dairy Primary Cooperative Societies in Murang'a County was based on four performance measurement dimensions. These are; consistency in milk delivery to the dairy cooperative societies, increase of dairy farmers' income from milk sales, increased number of members registered with DPCS, and satisfaction of the dairy farmers with the operations of the DPCS. The data on the perception of the respondent on the DPCS performance were collected from the twelve items under the performance theme based on the 5-point Likert scale. The sampled dairy farmers responded to the questionnaire items by agreeing, disagreeing or being neutral to the provided statements. Table 4.17 summaries the frequencies of the respondents' responses.

Table 4.17: Frequency Distributions of Dairy Farmers' Responses on the Performance of the DPCS

Likert-Scale	Frequency	Percentage
Strongly disagree	0	0.0
Disagree	5	1.9
Neutral	52	19.9
Agree	191	73.2
Strongly agree	13	5.0
Total	**261**	**100.0**

Table 4.17 shows that a total of 78.2 % of the sampled dairy farmers were in agreement with the DPCS performance statements. 19.9 % of the sampled dairy farmers remained neutral to the DPCS performance statements, while only 1.9 % was in disagreement with the DPCS performance. Being in agreement with the DPCS performance statements support the fact that the dairy primary cooperative societies were performing as per their set targets based on the selected performance indicators. This observation suggests that the dairy farmers were satisfied with the operations of the dairy cooperatives, and their income from the milk sales had increased to their expectation. Never the less, the neutrality of the dairy farmers to the DPCS performance was not by chance or random and therefore could not be ignored. As suggested by Cowley, (2000) neutral perception may be an indication that the respondents are less inclined to express their opinion or are without experience of the topic in discussion. A small proportion of

the sampled dairy farmers were in disagreement with the statements of the dairy cooperative societies' performance which was associated with their dissatisfaction with the operations of the dairy cooperative societies.

The performance variable was further analyzed descriptively whereby the performance mean score and the standard deviations were computed. The study focus was on the DPCS performance in Murang'a County. To ensure a true representativeness in data collection, the dairy farmers were sampled along the eight Murang'a sub counties. The results are shown in Table 4.18.

Table 4.18: Descriptive Statistics of performance of dairy primary cooperatives

	N	Minimum	Maximum	Mean	Std	Std. Deviation
	Statistic	Statistic	Statistic	Statistic	error	Statistic
Performance	261	30.00	60.00	44.27	.244	3.938

Referring to the results in Table 4.18, the average performance score of the dairy primary cooperative societies in Murang'a County was 44.27. The descriptive statistics indicate that the average performance score of the dairy primary cooperative societies was within the mean range of 30.0 to 60.0. Furthermore, the obtained standard deviations (SD= 3.938) indicate that the data values of the respondents on the DPCS' performance were closely clustered within the performance mean.

The quantitative data obtained reflected mixed opinions from the sampled dairy farmers, and therefore it was cross-validated with the thematically analyzed qualitative data from the in-depth interview and focus group discussion for management officials and M&E team respectively. More so, the consistent neutral responses from the dairy farmers' survey provoked a further telephone in-depth interview with eight conveniently selected dairy farmers similar to those who had earlier participated in the quantitative survey.

The perception of the performance of the DPCS from the three management officials; Operation Manager, Human Resource Manager, and the Quality Assurance Manager was captured. On the question of the DPCS' performance trend, one of the officials stated that-

'We have been able to meet most of the set objectives to a great extent. For example, some of the major milk buyers (names withheld) who used to buy milk directly from the dairy farmers are now buying from our dairy cooperative societies at a reasonably high and constant price and on agreed upon contracts, the volume of milk received from farmers has also increased with time'

A major concern observed by the management team was in the event when registered dairy farmers become disloyal to the cooperative societies and start selling some portions of their produced milk directly to the milk vendors. Noted from one of the management officials-

'We still face challenges and especially when some of the societies are not loyal to the MCC- Some dairy societies (name withheld) have been secretly selling their milk collections directly to the KCC middlemen especially when their price per liter of milk is slightly higher than the one we consistently offer. We are currently looking for ways and means of owning their loyalty back to selling their milk through the dairy cooperatives which to some extents has been successful…we at times receive insufficient milk in relation to the coolers' holding capacities due to low milk procurement, less members enrolment limited by distance, remoteness, and difficulties in collection of milk from such areas…

To add on the achievements of the DPCS by the time of the study, one of the key informants stressed that-

We have achieved a lot so far, the main objectives of forming the dairy cooperative societies were to buy the milk from dairy farmers at a constant price across all seasons of the year, and this we have kept to date amidst many financial challenges, timely payments, payment in full of which we have not

been able to fulfill…we have been able to offer competitive prices and to maintain the bargaining power with our main milk buyers, mainly Brookside, KCC and Daima creameries. We have also been able to revive some dairy cooperative societies that had earlier terminated their operations due to low membership enrollments and management challenges…'

On further probing on the causes of delayed payments of milk to the dairy farmers, the key informant said that they suffered serious delays on the payments from their main buyers and also subsidies from the county government, especially when the selling price per liter of milk was below their buying price from the farmers. However, the buying price had been kept constant at 35/= per liter of milk from the farmers despite the delayed payments.

The qualitative information from the Focus Group Discussion supported the performance of the DPCS. One of the monitoring and evaluation members indicated that the performance of the dairy cooperative societies had improved with time; this is illustrated by the following comment:

'..the dairy farmers even those producing few litres of milk per day choose to sell it through cooperative societies to enjoy the benefits of the available markets without exploitations from the milk vendors. During the field trips, the dairy farmers confess their contentment with the monthly milk payments rather than being paid in bits on daily basis….'

Interjection from another FGD member-

…We usually make assessments on weekly basis to monitor the quality of milk received from farmers and dispersed to the processors. Occasionally during these visits, we offer basic training to the cooler attendants on milk handling hygiene practices to help improve on their performance……some of the performance challenges we notice are associated with delays in collecting the milk from the coolers to central collection centres to provide cooling space for more collections from the dairy farmers…

These assertions were confirmed by the physical observations made by the researcher and research assistant during the data collection period. Based on the secondary data

available in the form of annual reports on the dairy cooperative societies' development and physical parameters like dairy primary cooperative societies' structures, there was an evidence of an increased growth over the years. Before then, the membership had greatly decreased prompting to closure of about eight DPCS due to low membership and management related issues. It was also observed that, of the twenty-eight operating DPCS, only twenty-three were loyal to the MCC at the time of data collection.

However, some dairy farmers had rejoined the dairy cooperatives and new dairy cooperative societies were being initiated. In Gatanga sub-county, the researcher witnessed the initiation of Kigoro Dairy Primary Society during the time of data collection. Other DPCS had some of their records pinned on the walls of their front offices displaying their milk production on monthly basis and members' enrolment trends. Provision of dairy meals on loans was also observed as an attracting factor for membership retention and enrollment.

The satisfaction of the dairy farmers' with the services offered to them by the dairy cooperative societies would motivate them for retention and improvement in milk production. This was ascertained from the qualitative data received from a telephone in-depth interview conducted with some conveniently selected dairy farmers. It was also noted that most of the dairy farmers were less informed of the management process of the dairy primary cooperative societies by the fact that there were not shareholders but just members selling their milk through the cooperatives. It is evidence that the dairy farmers who were members and not shareholders of the societies were not directly involved in the management process and more so in the monitoring and evaluation of the dairy primary societies. This directly attributed to the observed cases of neutral responses on the Likert-type questions.

As part of the study objective, the researcher further probed on the level of the dairy farmers' satisfaction with the performance of the DPCS. The following sentiment was obtained:

> *... we rarely get paid on time, sometimes payment is delayed for more than two weeks after the end month…even now (the 12th day of the month), we have not yet been paid for the milk already delivered to the societies…yes, this affects te*

consistency in milk delivery to the dairy societies, because one may consider alternative buyers who offer payments on the spot of milk delivery.

A related discontentment was confirmed from another dairy farmer who complained over some deductions from their milk payments to cater for the milk transport from the collection centres to the cooling points which was meant to be catered for by the MCC. Another demotivating factor as noted from the dairy farmers was lack of extension services. Initially, there were some extension services like education on breeding, feeding, animal health and others which had been faced out with time. The respondent termed such occurrences as threats to dairy members' retention in the dairy societies which may hinder the DPCS' competitiveness and may equally impose some limitations to their expansion in the future.

The findings from the various respondents unveiled some uncertainty in the dairy primary cooperative societies' performance based on the studied performance indicators. The implication was that from the respondents' perspective, the performance of the DPCS needs to be enhanced with the interests of the dairy farmers.

Studies from previous scholars on the performance of dairy cooperative societies have yielded results supportive to this study. Harmon, Scotti, Behson, (2007) assessed the performance of dairy cooperatives by measuring the client's or intended user's satisfaction. The authors advised that the success of the dairy cooperatives was directly associated with the beneficiaries' satisfaction. When the income of the dairy farmers from the milk sales is increased, the dairy farmers will be able to diversify their income generating activities for improved living standard which aligns the objectives of the dairy primary cooperative societies. More so, ensuring dairy farmers satisfaction with the operations of the DPCS would enhance their enrollment and retention in the dairy cooperatives' membership. Similar results have been reported for dairy cooperative societies by Abate Francesconi, and Getnet, (2014) showing evidence that overall dairy cooperatives' performance is significantly related to members' working efficiency. However, Fischer and Qaim, (2012) provide evidence about the positive influence of membership enrolment on the performance of dairy cooperatives in Tanzania.

Similarly, Bhuyan, (2007) stressed that dairy farmers are likely to abandon dairy societies they are members of in the event their input was not valued by the

management and their voices were not considered in decision making. Furthermore, Webster et al., (2012) associated performance of cooperatives with their abilities to create jobs and to train members on modern skills. Similarly, the results of a study by Subedi, (2009) in eastern Bhutan on dairy cooperatives revealed that the poor performance of the existing dairy cooperatives was due to inadequate management support, inept monitoring and evaluation, poor awareness creation and deficient in market analysis of the potential commodities. It is, therefore, evidence enough that the dairy cooperative societies' ability to satisfy the stakeholders should be enhanced. Likewise, DPCS should look for means and incentives to attract more dairy farmers to enroll and be retained in the membership. The findings on the performance of the dairy primary cooperative societies add to the existing body of knowledge on similar variables.

4. 6 Monitoring and Evaluation Planning Strategy on DPCS' performance

Planning for monitoring and evaluation entails definition of planning activities, estimating project monitoring and evaluation cost and required resources, and deciding on M & E stakeholders' representatives. The monitoring and evaluation strategies addressed by this study were: monitoring and evaluation planning strategy, monitoring and evaluation team strengthening strategy and monitoring and evaluation communication strategy.

As part of the study objectives, the study intended to establish the relationship of M & E Planning Strategy and performance of the DPCS in Murang'a County. The indicators to measure this variable were M & E budgetary allocation, stakeholders' involvement and utilization of M & E findings along with a total of twelve items in the Likert scale describing this variable. The frequencies of the respondents' responses are presented in Table 4.19.

Table 4.19: Descriptive Statistics and Frequencies of Dairy Farmers on M & E Planning Strategy

Likert scale	Frequency	percentage
Strongly disagree	0	0.0
Disagree	13	5.0
Neutral	92	35.3
Agree	107	40.9
Strongly agree	49	18.8
Total	**261**	**100.0**

Table 4.19 shows that the dairy farmers had a mixed opinion on the M & E planning strategy with reference to the performance of the DPCS in Murang'a County. Among the sampled dairy farmers, 40.9 % (107) were in agreement with the statements describing the M & E Planning construct. With reference to the results obtained, 35.3 % (92) of the dairy farmers were neutral to the M & E planning variable with only 5.0 % (13) disagreeing with the statements under this variable. The measurable indicators of this variable were: stakeholders involvement, budget allocation and utilization of M & E findings and therefore, there is a likelihood that the 40.9 % (107) dairy farmers in support of this construct were not just ordinary members but shareholders of the DPCS with direct involvement in the planning of the activities of the dairy cooperative societies.

A neutral opinion on the statements of the M & E Planning variable could be attributed to lack of understanding of the M & E undertaken procedure due to lack of involvement, lack of interest or else deliberate withholding of information. The validity of this information was confirmed through the qualitative information obtained from a sample of dairy farmers with similar characteristics. Similarly, the detailed meaning of agreeing and disagreeing with the variable statements was established using further data analysis.

The study further determined the influence of M & E planning by use of mean, standard deviation and standard error. The descriptive statistics; mean and standard deviation of the respondents on the M & E Planning Strategy are presented in Table 4.20.

Table 4.20: Descriptive Statistics of M & E Planning Strategy by Dairy Farmers

	N Statistic	Minimum Statistic	Maximum Statistic	Mean Statistic	Std error	Std. Deviation Statistic
M & E Planning	261	32.00	54.00	42.9808	.23310	3.75860

Table 4.20 illustrates the distribution of average scores on the study respondents on the scales measuring influence of M & E planning strategy on the performance of the DPCS. The mean score of M & E planning strategy by the dairy farmers is M= 42, SD = 3.76 and SE = 0.233. The standard deviation obtained was relatively small indicating that the data values were clustered around the mean. Based on the normal curve on the scores of 68 % of 1 standard deviation above and below the mean, 68% of the dairy farmers had the M & E planning scores between the mean of M = 46.74 and M= 39.22.

4.6.1 Pearson Product Moment analysis of M & E planning strategy on DPCS Performance

The magnitude and direction of the relationship between M & E planning strategy and the performance of the Dairy Primary Cooperative Societies were established using Pearson Product-Moment correlation coefficient. The variables' relationship was determined at 95% confidence level indicating that if the sample proportion (*p*) was equal or less than 0.05 (p value ≤ 0.05), then the relationship was statistically significant. Interpretation of the correlation strength is as indicated in Table 4.21.

Table 4.21: Correlation Strengths Guidelines

r value	Strength of Correlation
0.10 to 0.29 or -0.10 to -0.29	Small
0.30 to 0.49 or - 0.30 to -0.49	Medium
0.5 to 1.00 or -0.5 to -1	Large

Muchelule, (2017) adopted a similar rule in the interpretation of correlation coefficients' strengths between M & E and performance of projects in Bunyolo sub-

county, Kenya. The correlation results of M & E Planning strategy and performance of DPCS are indicated in Table 4.22.

Table 4.22: Correlation Coefficient between M & E Planning Strategy and Performance of Dairy Primary Cooperative Societies

Constructs	Correlations	DPCS performance	M & E Planning
DPCS performance	Pearson Correlation	1	.309[**]
	Sig. (2-tailed)		.000
	N	261	261
M & E Planning	Pearson Correlation	.309[**]	1
	Sig. (2-tailed)	.000	
	N	261	261

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

Referring to Table 4.22, the correlation coefficient between the M & E planning strategy and the performance of dairy primary cooperative societies constructs was r = 0.309. This indicates that a significant positive relationship of a medium strength exists between M & E planning strategy and performance of the dairy primary cooperative societies in Murang'a County.

4.6.2 Linear Regression analysis on M & E planning strategy on performance of DPCS

The prediction power of M & E planning strategy on performance of dairy primary cooperative societies was investigated by computing a regression coefficient of determination. The coefficient of determination is a better indicator of the strength of a relationship than the correlation coefficient. This is because it identifies the percentage of variation of the dependent variable that is directly attributable to the variation of the independent variable (Bryman & Bell, 2007).

The stated statistical regression model was used to determine the change in the M & E planning strategy and the percentage variation in the DPCS performance variable that is explained by the predictor variable. The fitness of the regression equation was also established.

Regression Model 1: $Y = b_0 + b_1 X_1 + \varepsilon,$

Where:

Y is the dependent variable (dairy primary cooperative societies' performance)

b_0 and b_1 are constant/ regression parameters

X_1 is the predictor variable (M & E Planning strategy)

ε is the error term

The regression outputs are shown in Tables 4.23, 4.24 and 4.25

Table 4.23: Model Summary of M & E Planning strategy and Performance of DPCS

Model	R	R^2	Adjusted R^2	R^2 change	Significance
1	.309[a]	0.095	0.092	3.760	.000[b]

a. Predictors: (Constant), M & E Planning Strategy DPCS performance,

From Table 4.23, the correlation coefficient statistic R is 0.309 presenting a medium deal of variance shared between M & E planning strategy and performance of the DPCS confirming the Pearson product moment results obtained earlier. The coefficient of determination R^2 explains the goodness of fit of the model indicating that only 9.5 % of the total variation of DPCS performance is explained by M & E planning strategy in the model with the rest being explained by other factors not in this specific analysis.

The outputs of the ANOVA Table describing the variance accounted in the regression model 1 are displayed in Table 4.24.

Table 4.24: ANOVA Table

Model	Sum of Squares	Df	Mean Square	F	Sig.
Regression	383.716	1	383.716	21.142	0.000[b]
Residual	3647.438	260	14.137		
Total	4031.154	261			

a. Dependent Variable: DPCS' Performance

b. Predictors: (Constant), M & E Planning Strategy

The results in Table 4.24 ascertain a significant influence of M & E planning strategy on DPCS performance. The F value (1/260) =21.142; $p < 0.05$ indicates that a significance of M & E planning strategy model occurs over the dependent variable. The F-ratio is 21.246, which is very unlikely to have happened by chance. This shows that the coefficient of M & E planning strategy is not equal to zero, a proof of an existence of a significant relationship between the two variables. The alpha value of 0.000 which is less than 0.05 level of confidence confirms the significant relationship between M & E Planning strategy and DPCS' performance in Murang'a County. The change on performance for each unit of increase in M & E planning strategy was obtained from the regression un-standardized coefficients. The regression coefficient outputs are presented in Table 4.25.

Table 4.25: Regression Coefficients

Model	Un-standardized Coefficients		Standardized Coefficient	t	Sig.
	B	**Std Error**	**Beta**		
Constant	31.555	2.452		12.871	.000
M&E Planning	.330	.063	.309	5.210	.000

a. Dependent Variable: DPCS Performance

As indicated in the Table 4.25, (t (260) = 12.871, $p < 0.05$); the t- statistic is associated with a significance of 0.000 which is lower than the chosen level of significance of 0.05. This indicates that the null hypothesis (H$_0$: $\beta = 0$) that M & E planning strategy regression coefficient was zero when all other predictor coefficients are fixed to zero was rejected. This concludes that M & E planning strategy is a significant predictor of performance of the dairy primary cooperative societies operating in Murang'a County.

By substituting the beta value to the initial regression model one, the following model was obtained.

$Y = 31.555 + 0.330\ X_1 + \varepsilon$

Where X$_1$ is the M & E Planning strategy

The resulting regression model explains that a unit increase in planning for M & E would result to 33.0% increase in DPCS' performance (y); withholding other factor not of this study focus.

4.6.3 Hypothesis Testing

To confirm the significance of the relationship between M & E planning strategy and DPCS' performance, an inferential analysis was conducted using a paired-sample t test where the means of the M & E Planning strategy and performance of the DPCS from the dairy farmers' opinions were compared. Testing for the null hypothesis helped to answer the research question stated on chapter one of this study.

H0: There is no significant influence of Monitoring and Evaluation planning strategy on performance of dairy primary cooperative societies in Murang'a County, Kenya.

The research hypothesis stated that there is a significant influence between M & E planning and DPCS in Murang'a County Kenya. The output of the paired-sample t test is displayed in Table 4.26.

Table 4.26: Paired Sample t-test results for Hypothesis 1

	Paired difference						
	Mean	S.E	95% confidence		T	df	Sig-2tailed
			lower	upper			
DPCS performance M&E-Planning	1.2885	4.638	.2876	.7223	1.854	4.479	260	.000

The output of Table 4.26 shows that there is a significant relationship between monitoring and evaluation planning strategy and DPCS' performance in Murang'a County. The t statistics, $t(260) = 4.479$ and its associated significance level ($p < 0.05$) indicate that there exists a significant correlation between M & E Planning Strategy and DPCS' performance. From these results then, the null hypothesis that there was no significant relationship between M & E Planning Strategy and performance of the Dairy Primary Cooperative Societies was rejected and accepted the alternative

hypothesis that M & E Planning Strategy had a significant influence on the performance of Dairy Primary Cooperative Societies in Murang'a County, Kenya.

To add meaning to the quantitative data and for triangulation purposes, the qualitative information from the in-depth interview with the DPCS management officials, dairy farmers' representatives and the M & E team focus group discussions were thematically analyzed.

An in-depth interview with one of the key informants revealed the contribution of the M & E strategies towards performance of the dairy primary cooperative societies in Murang'a County. A member in the management team stated that;

> *'M & E is a management activity of equal importance like any other activities in the dairy operations… funds are usually allocated (when availability) to facilitate monitoring and supervision of the Dairy Primary Cooperatives Societies' activities within the county…the chair persons of all the dairy primary cooperative societies are also involved in our frequent decision making meetings for consultations…all the dairy societies have a management board comprising of the chairman, secretary and two supervisory persons from which we receive important information on performance of the dairy societies at the ground level from which we make informed decisions to improve on their performance'.*

On the issue of DPCS' stakeholders' involvement in monitoring and evaluation, a member in the management team had earlier echoed that-

> *'…..the daily report obtained from the field visits is discussed in regular meetings involving stakeholders' representatives from various dairy cooperative societies and especially those with performance challenges.. .such reports help us to improve in the management of the dairy societies and also in the milk production at the farmers' level…we also present the obtained reports to the county cooperatives' board for further discussions and decision making...*

As noted in this analysis, the information obtained from the key informants was not directly in line with the comments from the focus group discussion. An M & E member in the focus group commented differently on the issue of planning for M & E.

> *'I have worked for Murang'a County Creameries for two years now and from my observation and interaction as an M & E expert, M & E has not been practiced with seriousness it deserves.. it has been more of traditional supervision of work process with no adoption of standardized M & E tools and techniques.., there is need for the management to facilitate improvement in data collection, data management, storage and even reporting procedures which has not been a hundred percent...'*

On the issue of involvement during planning for DPCS' management purposes, and in the utilization of the findings, two M & E team members respectively remarked:

> *'Yes, we are usually involved though occasionally through the QAM (Quality Assurance Manager)... we present the field information to the management team through the quality assurance manager and sometimes through the operations' manager and much of the report is utilized in making decisions for improving dairy societies' performance both in quality and quantity'... the chair persons of the DPCS are involved in the general meetings where decisions are made and solutions for related problems are discussed..*

Generally, the studied respondents posted a similar acknowledgement on the importance of planning and more so on monitoring and evaluation strategies which seem to have significance in performance of the dairy primary cooperatives societies in Murang'a County.

According to the M & E team members, M & E planning strategy contributes to the performance of the DPCS in Murang'a County. In particular, planning for M & E activities would improve work performance which indeed would increase performance of the Dairy Primary Cooperative Societies in Muranga County. In support of this finding, Crawford and Bryce, (2003) observed that M & E planning and coordination

enhance knowledge on the measurements of projects' attainments thus improving the work performance.

Similarly, Horton, MacKay, Anderson and Dupleich, (2000) study findings on dairying projects in Netherlands, indicated that planning for M & E financial resource and skilled personnel enhance dairy projects' performance. M & E planning as one of the predictor variables in a study by Tuckermann, (2015) correlated positively and significantly to development projects' performance at r= 0.562, p < 0.05 at a significant level of 95%, a close collaboration with the findings of the present study. Likewise, in a study by Jabaar, (2003) M & E mechanism was found to have a positive and significant correlation on the performance of the sampled dairy cooperatives in Bangladesh.

Similar to what has been reported by Ling and Chan, (2002), this study reveals that M & E planning is a key management tool that should be used by the stakeholders to enhance success in their initiatives. None the less, the findings of this study confirm the results of Jha et al., (2010) who reported that a well prepared and executed M & E plan will contribute to both project outcome and performance. With support from previous empirical studies results, DPCS should regard M & E planning strategy as one among other established performance contributors.

From the literature reviewed, the M & E planning measurement indicators had been empirically studied as individual independent variables on performance. The results obtained are in consistence with the results of the current study findings (McCoy, et.al., (2005); Hwang and Lim, (2013); Gyorkos, (2003), Marangu, (2012); These scholars among others found a positive significant relation of M & E budget allocation with performance of various interventions. In addition, Khake and Worku, (2013) conclude that involving staff tasked with M & E function in project planning and budgeting increases their outcome towards organizational performance. On utilization of M & E results, Karim, (2011) confirmed a positive and significant relationship with organizational performance which support the findings of the present study.

As opposed to the present study findings and other previous studies, the results of a study analysis by Muchelule, Mbawi and Achayo (2017) revealed that M & E planning had a negative significant effect on the performance of projects in Kenya State Corporations. The context of these studies, the methodology used and the tools of

analysis used may have contributed to the difference in the findings. However, monitoring and evaluation on the progress of interventions has widely been found in literature to support performance and therefore the need for the DPCS in Murang'a County to plan for M & E activities through involving their stakeholders in the planning processes, budgeting for M & E activities and utilizing the findings for performance; an empirical finding to add in the existing literature.

4.7 M & E Team Strengthening Strategy on DPCS performance

Strength of M & E teams is perceived as one of the component influencing their performance. As part of the objectives of this study, the study sought to establish its relationship with the performance of the DPCS in Murang'a County. To measure the influence of M & E team strengthening on performance of DPCS, the study adopted the following indicators; Clarity of M & E team roles, Optimized size of the M & E team and availability of M & E internal capacity. The frequencies of the dairy farmers' responses on the Likert scale are presented in Table 4.27.

Table 4.27: Frequencies of Dairy Farmers' responses on M & E team strengthening Strategy

Likert scale	frequency	percentage
Strongly disagree	00	0.0
Disagree	16	6.1
Neutral	98	37.5
Agree	129	49.5
Strongly agree	18	6.9
Total	**261**	**100.0**

With reference to Table 4.27, 56.4 % of the studied dairy farmers were to the opinion that M & E team strengthening strategy influenced the dairy primary cooperative societies' performance. It was noted that 6.1 % were in disagreement with the statements of this construct while 37.5 % remained neutral to the statements. The neutrality in the dairy farmers' responses on the M & E team strengthening strategy may be attributed to indirect involvement in the management process, especially in the

monitoring and evaluation process as noted from the qualitative responses . Once the dairy farmers are disengaged from the operations of the dairy cooperatives, they become passive members, less informed on the monitoring and evaluations done on the assessment of the dairy primary cooperative societies' activities leading to low contribution towards performance of the DPCS.

In general, the findings from the respondents' frequencies suggest an existence of an association between clarified M & E roles, optimum M & E team size and presence of M & E internal capacity with performance of DPCS. The implication is that once a dairy primary cooperative society strengthens the M & E team members, there will be effective monitoring for quality data and the findings will enhance improvement of the performance of dairy primary cooperative societies in Murang'a County. Frequencies only indicate the distribution of the responses of the respondents and therefore the arithmetic means and standard deviations of the respondents' responses were computed for further descriptive conclusions. The descriptive statistics of the dairy farmers' responses are displayed in Table 4.28.

Table 4.28: Mean Score and Standard Deviation of the M & E Team Strengthening Strategy

	N	Minimum	Maximum	Mean	Std.	Std. Deviation
	Statistic	Statistic	Statistic	Statistic	Error	Statistic
M & E-team strengthening strategy	261	29.00	46.00	37.446	.2318	3.743

With reference to Table 4.28, the descriptive statistics resulted were: M= 37.45, SD = 3.743, SE=.2318 of the M & E team strengthening construct were obtained from the dairy farmers responses. The standard deviation is relatively low indicating that the data values of the respondents were closely clustered around the mean. This observation also suggests that 68% of the respondents scored between M =37.0 and M= 41.2 in the M & E team strengthening strategy variable. The obtained standard error is relatively small indicating that the sample mean is close to the population mean on the M & E team strengthening variable. Generally, the dairy farmers support the importance of

strengthening the M & E team to enhance performance of the dairy primary cooperative societies in Murang'a County.

4.7.1 Pearson Correlation analysis of M & E team strengthening strategy and performance of DPCS

To determine the relationship between M & E team strengthening strategy and performance of DPCS, Pearson correlation analysis was further conducted. In order to answer the second Research Question stated in Chapter one of this study, The standard deviation is relatively low indicating that the data values of the respondents were closely clustered around the mean. This observation also suggests that 68% of the respondents scored between M =37.0 and M= 41.2 in the M & E team strengthening strategy variable. The obtained standard error is relatively small indicating that the sample mean is close to the population mean on the M & E team strengthening variable. The Pearson correlation results of the M & E team strengthening strategy and DPCS' performance are displayed in Table 4.29.

Table 4.29: **Correlation Coefficients between M & E team Strengthening Strategy and performance of DPCS**

Constructs	Correlations	DPCS Performance	M & E team Strengthening Strategy
DPCS Performance	Pearson Correlation	1	.401[**]
	Sig. (2-tailed)		
	N	261	.000
M & E team Strengthening Strategy	Pearson Correlation	.401[**]	261
	Sig. (2-tailed)	.000	1
	N	261	261

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

Referring to Table 4.29, a Pearson correlation coefficient of 0.401 was obtained with an associated *p* value of 0.000. The results indicate an existence of a positive relationship of a medium strength between monitoring and evaluation team strengthening strategy and performance of the dairy primary cooperative societies of the study focus. The alpha value p < 0.05 implied that the association between M & E team strengthening

strategy and performance was statistically important. From the correlation results, M & E team strengthening strategy appear to influence the performance of DPCS along with other variables.

4.7.2 Linear regression analysis of M & E team strengthening strategy and DPCS performance

To investigate on the prediction power of M & E team strengthening strategy on performance of the dairy primary cooperative societies, a linear regression analysis was conducted. The purpose was to determine the percentage variation in the performance of DPCS explained by the M & E team strengthening strategy. The following regression model was used.

Regression Model 2

$$Y=b_0+b_2X_2 +\varepsilon$$

Where;

      Y is the dependent variable (Dairy Primary Cooperative Societies' performance)

      b_0 and b_2 are constant/ regression parameters

      X_2 is the predictor variable (M & E team strengthening strategy)

      ε is the error term

The regression results are presented in Table 4.30.

Table 4.30: Regression Model Summary

Model	R	R^2	Adjusted R^2	R^2 change	Std. Error of the Estimate
2	.401[a]	.161	.157	0.3726	3.62101

    a. **Predictor: (constant), M & E team strengthening strategy**

Table 4.31 reveals a coefficient of determination R^2 of 0.161 indicating that only 16.1 % of the total variation of DPCS performance is explained by M & E team strengthening strategy with the rest being explained by other factors not in this specific analysis. The model was therefore taken fit to explain the relationship between the two variables. The implication is that a strengthened M & E team contributes to the

performance of dairy cooperative societies. The results in the Table 4.30 explained the validity of the regression model.

The outputs of the ANOVA Table describing the variance accounted for in model 2 are displayed in Table 4.31.

Table 4.31: ANOVA Table

Model	Sum of squares	df	Mean square	F	Sig.
Regression	646.792	1	646.792	49.329	.000[b]
Residual	3382.820	260	13.112		
Total	**4029.612**	**261**			

    a. **Dependent Variable: DPCS Performance**

    b. **Predictors: (Constant), M & E team strengthening Strategy**

The results in Table 4.31 ascertain significant influence of M & E team strengthening strategy on performance of the DPCS; $F_{(1/260)} = 49.329$; $p < 0.05$. This is an indication that a significance of M & E team strengthening strategy model occurs over the performance of the DPCS. The F value shows that the coefficient of M & E team strengthening strategy is not equal to zero and therefore existence of a significant relationship between the two variables. That M & E team strengthening strategy had a coefficient of estimate which was significant based on (p-value=0.000) which is below 0.05 level of significance. The alternative hypothesis is therefore accepted and concluded that there is a significant relationship between M & E team strengthening strategy and performance dairy primary cooperative societies.

The un-standardized coefficients were used to determine whether there was any change on DPCS' performance for each unit of increase in M & E team strengthening strategy. The regression coefficient outputs are presented in Table 4.32.

Table 4.32: Coefficients

Model	Un-standardized coefficients		Standardized coefficient	t	Sign
	B	**Std Error**	**Beta**		
Constant	28.467	2.262		12.587	.000
M&E team strengthening	.422	.060	.401	7.023	.000

a. Dependent Variable: DPCS Performance

Table 4.32 shows the value of t = 12.587 at 1/ 260 degrees of freedom at the significance level of 0.05 in the case of a two-tailed test. The alpha value is 0.000 which is lower than the chosen level of significance of 0.05. Therefore the null hypothesis (H0: $\beta_2 = 0$) is rejected and it is accepted that regression coefficient (β_2) is different from zero. Therefore, this concludes that M & E team strengthening strategy is a significant predictor of the performance of the dairy primary cooperatives societies. By substituting the beta value, the following regression model was obtained.

Y = 28.467+ .422 X$_2$ + ε

Where X$_2$ is the M & E team strengthening strategy

The resulting regression model explains that a unit increase in strengthening the M & E team would result to 42.2 % increase in DPCS' performance (y) disregarding other M & E strategies of the study interest and also other factors not of this study interest. It can be deduced from this observation that, the stronger the M & E team, the higher is the team's performance translating to an improved performance of the dairy primary cooperative societies. This was further confirmed by conducting a statistical test on the second hypothesis stated in Chapter one of this study.

4.7.3 Statistical test for null hypothesis for M & E team strengthening strategy and DPCS performance

To answer the second research question, a paired-sample t-test was conducted where the average means of M & E team strengthening strategy and DPCS' performance from the respondents were compared. The study null hypothesis is shown below as stated in chapter one of this study.

H0:   There is no significant influence of M & E team strengthening strategy on performance of Dairy Primary Cooperatives Societies in Murang'a County, Kenya.

The study alternative hypothesis stated that there is a significant influence between M & E team strengthening strategy and DPCS in Murang'a County Kenya. The output of the paired-sample t-test is displayed in Table 4.33.

Table 4.33: Paired Sample t-test results

	Paired difference							
	Mean	**SD**	**S.E**	**95% confidence**		**t**	**Df**	**Sig.(2-tailed)**
				lower	**upper**			
DPCS performance M & E team strengthening	6.82692	4.21214	.26123	6.31	7.3413	26.13	260	.000

The output of Table 4.33 shows that there is a significant relationship between M & E team strengthening strategy and performance of the dairy primary cooperative societies. The t statistics, t= 26.13 and its associated significance level of $p = 0.000$ indicate that there exists a significant correlation between M & E team strengthening strategy and DPCS' performance. From these results then, the null hypothesis that there is no significant relationship between M & E team strengthening strategy and performance of the dairy primary cooperative societies was rejected and the alternative hypothesis was accepted.

The quantitative information was triangulated with qualitative data from the key informants' in-depth interview, dairy farmers' telephone interview and focus group discussion for an informative conclusion. Among the key informant interviewed, two of them supported the issue of strengthening the M & E team as noted from the following remarks respectively:

'…*as long as the M & E persons are well equipped with technical requirements   and   skills,   then   their   output   is   worthy*

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performance....currently we are facing some challenges concerning the team size after losing one of the team members who is yet to be replaced...our staff are usually trained and oriented through the MCC before they are released for field work......they are also occasionally exposed for workshops to enhance their M & E skills..'

'Last year (2016) we purchased five motorbikes and the team members were trained on how to effectively use them in their field trips... most of the cooperative societies have improved in quality and quantity from the increased frequencies of assessments. 'We (management team) do a lot of monitoring on the ground in support of the M & E team and especially to the dairy societies with challenges in meeting their targets....the results obtained during monitoring are later used during the annual performance evaluations'

These sentiments were confirmed from the discussion with the M & E team. One of the member's expression was,

'Conducting daily assessments on different societies located differently in the county is quite demanding and especially when we are dealing with delicate and health-sensitive products, but as a team, we have managed to gather valid data to help management team in their decision making. For now we have been allocated motorbikes to enable us conduct frequent assessments across the DPCS within the entire county...what needs to be improved now are the data collection tools and especially in the monitoring of milk quality and quantity..'

On the specification of M & E roles and responsibilities, two M & E team members respectively explained that:

Most of the assessments we do are limited to the operations of the milk coolers; receiving of milk from the common collection centers, cooling and dispensing to the buyers. We are then supposed to liaise with the supervisory committees at the milk production level to ensure hygiene

handling of milk at the production level. The report is then communicated to the stakeholders through the management team.'

...we actually work as a team with an objective of employing effective M & E strategies enough to achieve results for improved performance...we feel encouraged when the findings of operations' assessments are put in to use and especially in the improvement of the dairy cooperatives' performance...we are able to conduct assessments on daily basis specifically on the quality and quantity of milk received from the farmers and dispensed to our main buyers.. we rarely interact directly with the farmers not unless in annual meetings from their respective dairy societies...

There was further validation of the quantitative information gathered from the dairy farmers using the survey tools. This was done using an in-depth telephone interview from a sample of conveniently selected dairy farmers from the eight Murang'a sub-counties. Some of the information received based on the study objectives was that the M & E team members commissioned from Murang'a County Creameries were limited to the cooling plants and especially on quality and quantity of milk received from farmers and dispensed to the main buyers on daily basis and also the working conditions of the milk coolers. One of the dairy farmers interviewed stressed that:

'....there are some individuals who were appointed in the supervisory committees as supervisors and even got trained on supervisory skills to monitor milk handling at the production level but rarely we receive any report from them... I doubt whether they still exist or maybe they are not sure of their M & E roles....actually, the nature of the M & E done at the farm level is not adequate or else it does not exist at all ...'

On consolidating the study findings from the different sources, it is evidence that the M & E done had some disconnections from the milk production level to the management level. It was also noted that the M & E report communicated to the management team was not complete and therefore not very appropriate to inform decision making. The team assigned supervisory duty at the milk production level requires more empowerment inform of skills and necessary capacities to enable them

yield timely and complete data for management purposes. Likewise the data management necessitates upgrading for validity and for future reference.

The findings of this study based on the M & E team strengthening variable found support from the literature reviewed. Naidoo, (2011) asserts that supporting and strengthening an M & E team enhances performance and value addition to the organizations. Closely related are the results of an empirical study done by Pretorius, Steyn, and Jordan, (2012). The study noted a significant association between the M & E team strength and the performance of the studied projects. Consequently, the general implication is that strengthening of an M & E team through optimizing the team size, clarifying their roles and reinforcing their internal capacity would enhance the performance of the dairy primary cooperative societies in Murang'a County.

Despite the difference in study context, the results of an empirical study by Yong and Mustaffa, (2012) on construction projects in Malaysia support the findings of this present study. The study revealed that a unit increase of technical training of the M & E team led to an increase in performance of the project by a factor of 0.789. Similarly, the results corroborate with the findings of Julia and Helen, (2011) who observed that M & E staff training and budgeting for M & E function positively and significantly influenced the performance of the projects under study. In addition, Tuckerman, (2007) examined M & E roles and responsibilities which correlated positively with the performance of the projects under study. In a similar view, Yumi and Susan, (2007) on construction projects in Ghana, noted that for a better projects' performance, it is important that organizations plan to empower the project team responsible for conducting M & E activities both financially and technically.

From the literature reviewed, there are various ways of strengthening an M & E team. Among them as summarized by Ling et al., (2009) include, optimizing the number of persons monitoring project schedule to increase results validity. The results of this present study and the reviewed literature seem to consent on the need of a strengthened M & E team for results. This implies that the more a team is strengthened, the more improved would be the performance of the organizations; an assertion enhanced by the findings of this present study.

4.8 Monitoring and evaluation Communication Strategy and Performance of Dairy Primary Cooperative Societies in Muranga County.

Monitoring and Evaluation Communication strategy is an action plan on who to transmit the M & E field findings, what exactly is to be communicated, by when and through which means and frequency. To measure the influence of this variable on the performance of DPCS in Murang'a County, the following measures were adopted; M & E communication frequency, diversity of M & E communication channels and M & E target audience. Table 4.34 displays the frequencies of the sampled dairy farmers' responses on the Likert scale items on M & E communication strategy.

Table 4.34: Frequencies Distribution of Dairy Farmers' Responses on M & E Communication Strategy

	Frequency	Percentage
Strongly disagree	0	0.0
Disagree	29	11.1
Neutral	52	19.9
Agree	178	68.2
Strongly agree	2	0.8
Total	**261**	**100.0**

Table 4.34 indicates that the sampled dairy farmers perceived M & E communication strategy as an influencing aspect of the performance of DPCS in Murang'a County. Among the studied respondents, 70.0 % were in agreement with the statements used to measure this construct with 11.1 % disagreeing with the same. However, 19.9 % of the dairy farmers did not commit themselves in the M & E communication strategy and the performance of DPCS. It is hypothesized that the dairy farmers are not adequately involved in the monitoring and evaluation process of the DPCS operations.

The mean scores and standard deviations of the respondents' responses to the statements of M & E communication strategy were computed for further information. The descriptive statistics results are presented in Table 4.35.

Table 4.35: Mean and Standard Deviation of Respondents' Responses on M & E Communication Strategy

Descriptive statistics	n	Minimum	Maximum	Mean	std error	Std. Deviation
M & E communication strategy	261	25.00	53.00	38.4769	.25500	4.11179

With reference to Table 4.35, the descriptive statistics M= 38.48, SD = 4.11179 and a standard error of .255 of the M & E communication construct were obtained from the dairy farmers responses. The standard deviation is relatively low and therefore the data values of the respondents were closely clustered around the mean. The obtained standard error is small (.255), indicating that the sample mean is close to the population mean on the M & E communication predictor variable. Generally, the dairy farmers seem to support the need to diversify M & E communication channels and frequently communicate the M & E findings to the relevant stakeholders for decision making.

4.8.1 Correlation of M & E communication strategy and performance of DPCS

A detailed understanding of the relationship between M & E Communication and performance of the Dairy Primary Cooperatives Societies in Murang'a County was enhance by computing a correlation coefficient using Pearson Product-Moment correlation analysis at a 95% level of confidence. The correlation results of M & E communication strategy are as shown in Table 4.36.

Table 4.36: Correlations of M & E Communication strategy and DPCS' performance

Constructs	correlations	DPCS performance	M & E communication strategy
DPCS performance	Pearson Correlation	1	.277[**]
	Sig. (2-tailed)		.000
	N	261	260
M & E communication strategy	Pearson Correlation	.277[**]	1
	Sig. (2-tailed)	.000	
	N	260	260

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

Table 4.36 shows an existence of a correlation between the M & E communication strategy and the performance of DPCS. The correlation coefficient of r = .227 is obtained indicating a positive and weak relationship between the two study variables. These findings give a reason to support the study hypothesis that the M & E communication strategy is related to the performance of the dairy primary cooperative societies in Muranga County.

4.8.2 Linear Regression analysis of M & E communication strategy on performance of DPCS

Additional regression analyses were conducted to confirm the results of the earlier conducted analyses and also to test for the goodness of fit of the model. A linear regression analysis was conducted to determine the strength and significance of the perceived relationship between M & E communication strategy and performance of the dairy primary cooperative societies focused by the study. The percentage variation in the performance of DPCS explained by the M & E communication strategy was determined using the following statistical regression model.

Simple linear Regression Model 3

$Y = b_0 + b_3 X_3 + \varepsilon,$ where:

Y is the dependent variable (dairy primary cooperative societies' performance)

b_0 **and** b_3 are constant/ regression parameters

X_3 is the predictor variable (M & E Communication Strategy)

ε is the error term

The regression results are presented in Table 4.37.

Table 4.37: Regression Model Summary

Model	R	R^2	Adjusted R^2	Std error
1	.277	.077	.073	7.79642

A. Predictors: (Constant), M&E Communication Strategy

Table 4.37 reveals a coefficient of determination R^2 of 0.077 indicating that only 7.7 % of the total variation of DPCS performance is explained by M & E Communication

strategy with the rest being explained by other factors, not in this specific analysis. There is a positive linear relationship and therefore, the model is considered fit to explain the relationship between M & E communication variables and DPCS' performance. The implication is that M & E communication strategy contributes to the performance of dairy primary cooperative societies in Murang'a County.

The outputs of the ANOVA table describing the variance accounted in regression model 3 are displayed in Table 4.38.

Table 4.38: Analysis of Variance-ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	309.720	1	309.720	21.489	.000[b]
	Residual	3718.495	260	14.413		
	Total	4028.215	261			

a. Dependent Variable: performance

b. Predictors: (Constant), M & E communication strategy

The results in Table 4.38 ascertain significance influence of M & E communication strategy on DPCS performance with F value $(1/260) = 21.489$; $p < 0.05$. This is an indication that a significance of M & E communication strategy model occurs over the performance of DPCS and that the coefficient of M & E communication (β_3) is not equal to zero and that the explained variance is not due to a random. Therefore, there is an existence of a significant relationship between the two variables. The M & E communication strategy had a coefficient of the estimate which was significantly based on ($p=0.000$) which is less than 0.05 the chosen level of confidence. The un-standardized coefficients were used to determine whether there was any change in DPCS' performance for each unit of increase of M & E communication strategy. The regression coefficient outputs are presented in Table 4.39.

Table 4.39: Correlation Coefficients

Model		Un-standardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	34.029	2.220		15.328	.000
	M & E communication Strategy	.266	.057	.277	4.636	.000

a. Dependent Variable: performance

Table 4.39 represents the value of t = 15.328 at 1/ 260 degrees of freedom at the significance level of 0.05 in the case of a two-tailed test. The alpha value is 0.000 which is lower than the chosen level of significance of 0.05. Therefore the null hypothesis (H0: $\beta 3 = 0$) is rejected and it is accepted that regression coefficient is different from zero. Similarly, this concludes that M & E communication strategy is a significant predictor of performance of Dairy Primary Cooperatives Societies. By substituting the beta value, the following regression model was obtained.

$Y = 34.029 + .266 X_3 + \varepsilon$

Where: X_3 is the M & E Communication Strategy

The resulting regression model explains that a unit increase in M & E communication would result to 26.6 % increase in DPCS' performance (y) disregarding other M & E strategies of the study interest and any other factor not of this study focus.

4.8.3 Statistical test of the null hypothesis for the M & E communication strategy on performance of DPCS

The third study hypothesis was tested though an inferential analysis in order to confirm the significance of the relationship between M & E communication strategy and DPCS' performance. A paired-sample t-test was conducted where the means of M & E communication strategy and DPCS' performance within the respondents were compared. Indicated below is the null hypothesis derived from the alternative hypothesis stated in Chapter one of this study.

H0: There is no significant influence of monitoring and evaluation communication Strategy on performance of the Dairy Primary Cooperative societies in Murang'a County, Kenya.

The study hypothesized existence of a significant influence between M & E communication strategy and performance of DPCS in Murang'a County. The output of the paired-sample t-test is displayed in Table 4.40.

Table 4.40: Paired Sample t-test results for Hypothesis 3

	Paired Difference						
	Mean	**S.E**	**95% confidence**		**t**	**df**	**Sig.(2-tailed)**
			lower	**upper**			
DPCS performance M & E Communication	5.7846	4.844	.300	5.19	6.376 19.25	260	.000

The output Table 4.40 shows that there is a significant relationship between M & E communication and performance of the dairy primary cooperative societies of Murang'a County. The t statistics of t= 19.25 and its associated significance level of $p < 0.000$ indicate that there exists a significant correlation between M & E communication strategy and DPCS' performance. Therefore, the alternative hypothesis that there is a significant influence of M & E Communication Strategy on performance of Dairy Primary Cooperative Societies in Murang'a County was accepted.

The qualitative data from the key informants' interviews and the focus group discussions were thematically analyzed to cross-validate the quantitative information obtained from the dairy farmers. The following sentiment was captured from interviewing one of the management team members:

'…..we frequently get informed by the M & E persons assessing the progress of the dairy cooperatives….in case of emergencies, we find immediate alternatives and especially in the cases of milk collection delays from the coolers leading to milk spoilage if not promptly attended to', information on

milk quality and quantity is also communicated to the MCC offices on regular basis for records and actions where need be…..

Responding to the same concern, another member of the management team had earlier stated that-

'…the M & E persons are facilitated with various communication tools like enabled phone cells for immediate responses and reporting, especially during emergencies…record books for field notes are also available for lesson learning and for future reference……these reports help us to remain on the track towards attaining the cooperative societies' goals and also to ensure that funds are directed towards the planned activities…'

For more information on M & E communication strategy, the researcher probed one of the interviewed management official on his perception towards the M & E communication measures; stated below was his response:

'…there has been some improvement in terms of timely submission and completeness of reports …also visible improvement on the way data were collected, interpreted and reports made- initially data were being recorded manually and retrieving them was a challenge, currently we have some software storage systems for more improved data management which is assisting in decision making for improved performance…'

From the qualitative information, M & E communication strategy if enhanced may lead to improved performance of the Dairy Primary Cooperative Societies. The responses of the M & E team from the focus group discussion were considered by the study for source triangulation. One of the members remarked:

'…there are various means of communicating the field observations to the relevant stakeholders….we directly report to the management teams who in turn discuss the findings with other stakeholder including dairy farmers' representatives, usually the chairmen of the dairy primary cooperative societies…'

Another focus group discussion member agreed by stating that:

...I agree with this statement, M & E communication strategy is well facilitated, though data storage requires some updates for future reference and sustainability.'...the tools available for capturing and managing field data need further upgrading to enable timely collection and communication of valid and complete data.... mostly we present written reports, verbal communication through the phones and also through open forums during general meetings, vernacular radio program (Mugambo wa Murimi) is also used though occasionally..'

The various analyses on the relationship between monitoring and evaluation communication and performance revealed existence of a positive and significant association. The general information from the above descriptive analyses of individual M & E strategies focused on by the present study is that, the three individual M & E strategies studied had a positive contribution to the DPCS performance though at varying levels.

The findings of this study agree with most of the previously done researches related to the variables of this study. The study by Torres, Pina, and Royo, (2005) established that project evaluators were using diverse communication channels to validate findings and to report the final results. The author advised the use of a series of communication formats in a skillful way to communicate a written M & E report's findings and recommendations within the project staff for learning and action to improve project performance. A well thought out M & E communication strategy should be part and parcel of M & E system design to facilitate timely delivery of M & E information to the project stakeholders on whether and why the intervention is succeeding or failing. Consequently, the present study contributes to the existing knowledge on the communication of the M & E findings and performance of interventions.

The study respondents expressed their concern about the tools used to capture M & E data, data storage for future retrieval and the general data management. This concern was not directly focused on by this study and therefore need for an immediate empirical study in a similar context to establish the above-mentioned variables on the influence on DPCS performance. From other different contexts, Muzinda, (2007), conducted a study to determine the influence of M & E communication strategy on organizational

performance. Findings showed that selection of M & E communication tools and techniques was positively but weakly associated (r=0.038) with the performance of the organizations on study. In addition, Oladele, (2011) found a strong correlation (r=0.88) between the choice of M & E communication styles on project performance. Closely related are findings from a correlation analysis by Otieno, et al., (2015) which indicated that performance of flower projects in Naivasha was positively related to monitoring and evaluation communication strategy with a coefficient of r= 0.266. The study further noted that projects that had weak M & E communication strategies with irregular reporting and utilization of M & E results had their performance rated low.

Communication for results is a monitoring and evaluation strategy which should be used as a management tool to facilitate internal learning and engagement of stakeholders. Mackay, (2007) proposed that, beside the collection of the M & E data, the M & E team members should design a well thought out communication strategy as part and parcel of the M & E process. Moreover, communications help in reaching the intervention's destination by helping to bring about change. From these observations then, failure to communicate M & E results regularly with stakeholders within the dairy primary cooperatives can cause disengagement, disinterest and ultimately the non-use of M & E findings. The results of this study add weight to the existing empirical findings on M & E communication and performance of interventions.

4.9 Monitoring and evaluation strategies and Performance of Dairy Primary Cooperative Societies in Murang'a County.

The study sought to determine the relationship between the combined M & E strategies and performance of Dairy Primary Cooperative Societies in Muranga County. Several analyses were conducted on the data gathered from the multiple study respondents. A Pearson correlation coefficient was calculated to measure the linear relationship between the combined M & E strategies and the DPCS' performance. The variables' relationship was determined at 95% confidence level indicating that if the sample proportion (p) was equal or less than 0.05 (p-value ≤ 0.05), then the relationship was statistically significant. The correlation results of M & E strategies and performance are displayed in Table 4.41.

Table 4. 41 : Correlation Coefficient between M & E strategies and performance of dairy primary cooperative societies in Murang'a County

Correlations		DPCS Performance	M&E Strategies
DPCS Performance	Pearson Correlation	1	.463[**]
	Sig. (2-tailed)		.000
	N	261	261
M & E strategies	Pearson Correlation	.463[**]	1
	Sig. (2-tailed)	.000	
	N	261	261

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

With reference to Table 4.41 a medium positive correlation of r = .463 exists between M & E strategies and the performance of the studied dairy primary cooperative societies. The correlation coefficient of the combined M & E strategies is higher than for each individual M & E strategy and therefore the M & E strategies of the study focus should preferably be used together to strengthen their individual influence on performance of the Dairy Primary Cooperative Societies.

4.9.1: Multiple regression analysis of monitoring and evaluation strategies on the performance of dairy primary cooperative societies in Murang'a County.

To examine the prediction power of the combined monitoring and evaluation strategies on the performance of dairy primary cooperative societies in Murang'a County, a multiple regression analysis was used to increase the accuracy of predictions for the dependent variable over one independent variable alone. The following are the multiple regression models used to predict the performance of the studied dairy primary cooperative societies.

$$Y = b_0 + b_1 X_1 + b_2 X_2 + b_3 X_3 + e$$

Y = dependent variable (DPCS performance)

b_1 = coefficient of the 1st predictor variable; X_1 (M & E planning strategy)

b_2 = coefficient of the 2nd predictor variable; X_2 (M & E team strengthening strategy)

b_3 = coefficient of the 3rd predictor variable X_3; (M & E communication strategy)

The present study predicted a relationship between the combined M & E strategies and the performance of dairy primary cooperative societies in Murang'a County. The outputs of the multiple regression analysis are presented in Table 4.42.

Table 4.42: Regression Model Summary

Model	R	R^2	Adjusted R^2	Std error	R^2 change	F change	df1	df2	sig.
1	.463[a]	.214	.205	.3560	.214	23.065	3	258	0.000

a. **Predictors: (Constant), M & E Communication, M & E Planning, M & E strengthening**

The coefficient of determination R^2 indicates the percentage of how much of the total variance is explained by the independent variable. This shows that the independent variables (M & E planning, M & E team strengthening and M & E communication strategies) together account for 21.4% of the variations in performance of dairy primary cooperative societies, the rest being explained by other factors not featured in this study. This therefore calls for other future studies to investigate on other factors influencing performance of the dairy primary cooperative societies in Murang'a County.

To ascertain the validity of the regression model on whether the M & E strategies have regression coefficients equal to zero, and that the explained variance is not due to a random, the multiple regression results in Table 4.44 were consulted.

Table 4.43: ANOVA Table Results

Model		Sum-of Squares	df	Mean Square	F	Sig.
1	Regression	462.075	3	287.358	23.065	.000[b]
	Residual	3164.472	258	12.459		
	Total	4026.547	261			

a) **Dependent Variable: DPCS Performance**

b) **Predictors:(Constant), M&E Planning, M & E team Strengthening, M & E Communication Strategies**

From the ANOVA Table 4.43 outputs, the model was fit to predict the performance of the dairy primary cooperative societies using the M & E planning, M & E team strengthening and M & E communication strategies. The resulted p-value of 0.000 was below 0.05; the chosen level of significance. This implies that a significance of M & E strategies model occurs over the performance of the DPCS.

The value of F obtained was 23.065, (3 / 258 degree of freedom) at the significance level of 0.05. This justifies the accepting of the alternative hypothesis that the regression coefficient of the combined independent variables was not equal to zero and that the explained variance was not due a random. This then ascertains the existence of a significant influence of the multiple regression models over the performance of the studied dairy primary cooperative societies operating in Murang'a County.

The un-standardized coefficients were used to find out whether there was any change in performance for each unit of increase of the M & E combined strategies. The regression coefficient outputs are presented in Table 4.44.

Table 4.44: Regression Coefficient

Model	Un-standardized Coefficients		Standardized coefficient	t	Sig.
	B	Std. Error	Beta		
1 (Constant)	20.119	2. 988		6.734	.000
M&E Planning	.170	.066	.158	2.577	.011
M&E Strengthening	.323	.064	.307	4.071	.000
M&E communication	.143	.057	.148	2.494	.013

a. Dependent Variable: Dairy primary cooperative societies' Performance

Table 4.44 shows the t values for the three M & E strategies with their associated p - values which are all less than the chosen level of significance of 0.05. The null hypothesis that the regression coefficient of each M & E strategies was equal to zero was rejected, the fact that the relationship between the independent variables was significant. By substituting the beta values to the initial regression model 5, the following regression model was obtained.

Y = 20.12 + .170 X_1 +.323 X_2 + .143 X_3 + e

Where;

X_1 = (M & E planning strategy),

$X_{2=}$ (M & E team strengthening strategy) and

X_3 = (M & E communication strategy)

The resulting regression model explains that a unit increase in the combined M & E strategies would result to 63.6 % increase in the DPCS' performance (y), withholding constant other factors not of this study interest.

The present study has brought additional knowledge on the M & E strategies and dairy primary cooperative societies in the existing body of knowledge. The findings are also supported by the existing literature on the related variables. The relationship between M & E strategies and performance of various interventions has been adequately supported in the literature (White, 2012; Masuku, 2014; Kamau, Mireri, and Usman, 2013; McCoy, 2005; Gyorkos, 2003; Mugo 2014). Among these scholars, Jabbar, (2009) conducted a simple regression analysis on the M & E-performance relationship in donor-funded community dairy projects. A significant positive correlation between the study variables was obtained which is consistent with the findings of the present study. Similarly, results of a quantitative study by White, (2012) in Botswana on the influence of project monitoring and evaluation and performance correlate with the findings of this study. The study revealed a significant and positive relationship between M & E practices and performance of the dairy projects. Effective and timely decision-making requires information from regular and planned monitoring and evaluation activities. As maintained by the literature reviewed, the present study plays a role in the contribution to the existing body of knowledge on monitoring and evaluation and performance of interventions.

4.9.2 Analysis of Influence of Management Support on Dairy Primary Cooperative Societies in Muranga County

The present study views management support as an initiative from the dairy primary cooperative management team to provide a conducive working environment to the

staff, including the M & E team. This may be done through motivating the project team through incentives and availing the working staff with opportunities and abilities to perform.

The current study examined the influence of management support on dairy primary cooperative societies in Murang'a County and its moderating influence on the relationship between M & E strategies and performance of the studied dairy primary cooperative societies. The indicators used to measure this construct were; provision of incentives for motivation, professional development for skills and provision of modern technology. On analyzing the frequencies of the responses of the studied dairy farmers, the results in Table 4.45 were obtained.

Table 4.45: Frequencies of Dairy Farmers' Responses on Management Support Construct

Likert scale	Frequency	Percentage
Strongly disagree	0	0.0
Disagree	107	41.0
Neutral	35	13.4
Agree	103	39.5
Strongly agree	16	6.1
Total	**261**	**100.0**

With reference to Table 4.45, the dairy farmers perceived the statements of the management support construct differently. Among the studied dairy farmers, 45.6 % were in agreement with the general statements describing the management support variable while 41.0 % disagreed with the statements describing the management support variable. Some of the respondents about 13.4 % had a neutral response to the construct's statements. From the distribution of the frequencies of the dairy farmers' responses, there were as many dairy farmers agreeing with the management support statements as those with a disagreeing opinion. From this observation, there is an evidence that the study respondents perceived differently the indicators used by this study to measure management support and its influence on the performance of the dairy primary cooperative societies operating in Murang'a County. The validity of this observation was ascertained through additional analyses.

For further descriptive analysis, the study computed the average mean score and the standard deviation of the management support with reference to the responses of the study respondents. The descriptive analysis results are shown in Table 4.46.

Table 4.46: Descriptive statistics on Management Support variable

	n	Minimum	Maximum	Mean	Std.	Std. Deviation
	Statistic	Statistic	Statistic	Statistic	Error	Statistic
Management Support	261	38.00	58.00	47.8238	.20715	3.34658

Table 4.46 indicates the average scores of Management Support from the dairy farmers' responses. A mean score of 47.8 with a standard deviation of SD = 3.347 and a standard error of 0.20715 were obtained. The standard deviation was relatively small indicating that the data values of the respondents responses were clustered around the mean of the data set. .

To investigate the linear relationship between the management support and the performance of dairy primary cooperative societies, a Pearson Product-Moment correlation coefficient was computed. The magnitude and direction of the relationship between the two study variables were determined at 95% confidence level. The outputs of the correlation strength are shown in Table 4.47.

Table 4.47: Correlation Coefficient of Management Support on DPCS Performance

		DPCS performance	Management support
DPCS performance	Pearson Correlation	1	-.025
	Sig. (2-tailed)		.688
	N	261	261
Management support	Pearson Correlation	-.025	1
	Sig. (2-tailed)	.688	
	N	261	261

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

Referring to Table 4.47, the correlation results between Management Support and the performance of DPCS construct is not significant. A negative relationship of a weak strength ($r = -.025$, $p \geq 0.05$) at 95% significance level in a two-tailed test was realized. The p-value $=0.688$ was greater than 0.05, the chosen level of confidence. This implies that management support does not significantly contribute to the performance of the dairy primary cooperative societies in Murang'a County.

Management Support which was treated as a moderator variable by the study portrayed a negative, weak and non-significant relationship with the study outcome variable implying that Management Support weakly influences the performance of dairy cooperative societies and to a negative direction. From the study findings, it seems possible that it is not the presence of management support that positively influences the performance of dairy primary cooperative societies, but the M & E strategies used, withholding influence of any other factors external to this study. This could be attributed to the attitude of the management officials towards monitoring and evaluation strategy. The officials in the management could perceive M & E as a fault finding aspect or else lack of in-depth knowledge on the use of management tools, one of them being monitoring and evaluation, a gap being addressed by this present study.

4.9.3 Linear regression analysis of Management Support variable on the performance of the dairy primary cooperative societies in Murang'a County.

For further information, the study investigated on the prediction of management support on the performance of Dairy Primary Cooperative Societies of Murang'a County. A linear regression analysis was used to examine the strength of the relationship between Management Support and performance of DPCS of the study focus. The statistical regression model five stated below was used to determine the change in the Management Support or the percentage variation in the DPCS performance variable that is explained by the predictor variable.

Regression Model 5: $Y = b_0 + b_4 X_4 + \varepsilon$

Where,

   Y is the dependent variable (dairy primary cooperative societies' performance)

   b_0 and b_4 are constant/ regression parameters

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X_4 is the predictor variable (management support)

ε is the error term

The regression outputs are shown in Tables 4.48, 4.49 and 4.50.

Table 4.48: Model Summary of Management Support and Performance of DPCS

Model	R	R^2	Adjusted R^2	R^2 change	df1	df2	Significance
1	-.025[a]	0.001	-0.003	0.001	1	260	0.688

b.   **Predictors: (Constant), management support**

c.   **b. DPCS performance,**

From Table 4.48, the correlation coefficient statistic R^2 is 0.001 presenting a very small deal of variance shared between management support and performance of the DPCS variables. The coefficient of determination R^2 indicates that only 0.1 % of the total variation of DPCS performance is explained by management support in the model with the rest being explained by other factors external to this specific analysis. The outputs of the ANOVA table describing the variance accounted in model five are displayed in Table 4.49.

Table 4.49: ANOVA Table

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	2.520	1	2.520	.162	0.688[b]
Residual	4028.706	260	15.555		
Total	4030.226	261			

c.   **Dependent Variable: DPCS' Performance**

d.   **b. Predictors: (Constant), Management Support**

The results in Table 4.49 ascertain the non-significance influence of management support variable on the performance of the dairy primary cooperative societies. The F value, (1/259) = 0.162 with a *p*-value greater than 0.05 indicate absence of a significant relationship between management support over the study dependent variable. The F statistic tested whether the R square proportion of variance in the performance of DPCS accounted for by the management support was zero. The alpha value of 0.688 which is

greater than the chosen level of confidence (0.05) further confirmed the existence of a relationship between management support and DPCS performance in Murang'a County though with no statistical significance. The un-standardized coefficients were used to find out whether there was any change in performance for each unit of increase of management support variable. The regression coefficient outputs are presented in Table 4.50.

Table 4.50: Regression coefficients of management support on DPCS performance

Model	Un-standardized Coefficients		Standardized coefficient	t	Sig.
	B	**Std Error**	**Beta**		
Constant	45.675	3.504		13.036	.000
Management support	-.029	.073	-.025	-.403	.688

a. Dependent Variable: DPCS Performance

As indicated in Table 4.50, the t statistic is associated with a significance of 0.688 which is higher than the chosen level of significance, 0.05. From this observation therefore, management support does not significantly predict performance of dairy primary cooperatives societies in Murang'a County.

By substituting the beta value to the initial regression model five, the following regression model was obtained.

$Y = 45.675 - 0.029 X_{4} + \varepsilon$

Where,

X_4 is Management Support

The resulting regression model explains that a unit increase in management support would result in 0.029 % decrease in DPCS' performance (y) withholding other factors constant. These findings evidence existence of a negative relationship between management support and performance of dairy primary cooperative societies with no significant contribution to the performance of the dairy primary cooperative societies in Murang'a County. Withholding other determinants of DPCS performance not connected to this study, it appears possible that it is not the presence of management

support that positively influences dairy cooperative societies' performance but the M & E strategies being used. Contrary to the study expectations, the findings show that presence of management support slightly reduces the performance of DPCS in Murang'a County.

4.9.4 Statistical test for null hypothesis on management support construct and performance of dairy primary cooperative societies

The significant relationship between management support and DPCS' performance was further tested using a paired-sample t-test. Stated below is the null hypothesis to answer the fifth research question indicated in chapter one of this study.

H0: There is no significant influence of Management Support on Performance of Dairy Primary Cooperative Societies in Murang'a County, Kenya.

The study hypothesized a significant relationship between Management Support variable and performance of the DPCS in Murang'a County Kenya. The output of the paired-sample t test is displayed in Table 4.51.

Table 4.51: Paired-Sample t test Results for Hypothesis 4

	Paired difference							
	Mean	SD	S.E	95% confidence lower	upper	t	df	Sig.(2-tailed)
DPCS performance Management Support	3.556	5.231	.324	-4.193	-2.918	-10.9	260	.000

As stated in Table 4.51, there is a negative relationship between management support and performance of the dairy primary cooperative societies of Murang'a County. The t statistics, -10.9 and its associated significance level of $p < 0.000$ indicate that there exists a significant negative correlation between management support and DPCS' performance. From these results then, the null hypothesis that there is no significant relationship between management support and performance of the dairy primary cooperative societies is accepted and reject the alternative hypothesis.

For a comprehensive understanding of the relationship between management support and performance of DPCS in Murang'a County, qualitative data from the respondents were analyzed to validate and triangulate the survey quantitative data. When asked to shed light on the kind of support offered to the M & E team and the rest of the DPCS stakeholders to enhance performance, one of the management officials gave the following sentiments:

> '….there are actually no incentives given to the dairy cooperatives' staff except their monthly salaries which is not always paid in time ,......for the M & E team, they are occasionally given airtime to enable them communicate on emergencies….other motivations are work related like provision of motorbikes, field note books and occasional refresher courses..'

On the same variable, one of the management officials had earlier explained that;

> '.....the money we get from our milk buyers is not even enough for our monthly transactions….when the milk price per litre is lower than our buying price from the farmers, we are forced to ask for subsidies from the county government which is not always guaranteed.....,availability of funds for maintenance purposes is a major challenge…'

From an in-depth telephone interview, a dairy farmer responding to a question on the management support lamented;

> '……..we, (dairy farmers) get no incentives from the MCC (management team), we get very little information if any about the inner details of these 'milk societies'.., some of us don't even know who owns the MCC or even these 'societies'.. we 'hear' some DPCS registered with the MCC for shareholding with 10,000/= each….it seems as if we (dairy farmers) are retained to provide milk to the MCC once its fully and physically operational in milk processing and related products…

Another dairy farmers interviewed through the telephone expressed the dairy farmers' desire as captured below,

> *'..our expectations are that MCC directly provides dairy meals to the
> farmers at subsidized prices and on loans to cater for the inconveniencies
> caused by delayed payments for the milk sold, extend services like artificial
> insemination and animal health services and training…there used to be the
> 'shillingi kwa shillingi' loan facilities and also common breeding points at
> Mariira location which are no longer in existence. The MCC should also
> consider employing community members on training rather than engaging
> people from outside the County to manage our resources…. '*

To support this sentiment, an M & E team member in the focus group discussion had the following remark:

> *'..We are paid our monthly salaries but rarely do we get any incentives from
> MCC...though occasionally we are taken for workshops on M & E trainings
> and specifically on dairy cooperatives requirements…sometimes the
> individual dairy primary societies go extra to motivate their immediate staff
> with incentives but not from the MCC…'*

The presentation of the results on management support from the different sources and respondents showed that there exists no significant relationship between management support and the performance of the DPCS in Murang'a County. These results give a reason to believe that management support does not have a real effect on the performance of the studied DPCS. Consequently, the results of this study confirm earlier findings of some empirical studies on similar variables. Stubner, wulf, and Harard, (2002) found no effect of the quality management support on more objectively measurable indicators (growth in personnel and revenue and earnings figures) of the performance of entrepreneurial start-up firms in Germany.

Although management support is perceived an important and strategic resource in many organizations, it appears different in the case of DPCS as per the findings of this study. This situation is reflected by McAdam and Reid, (2000) study findings that there is no link between top management support and performance measurements. In support of this observation, Wanjala, Omondi, and Njehia, (2014) on predictors of milk production on dairy projects in western Kenya found no significance influence of management support on milk production compared to other internal variables such like milk

production technologies, resource availability and dairy feeding methods. Never the less, literature has acknowledged the existence of management support as a valuable template for project performance (McComb., 2008; Naranjo-Gil, 2009; Chan and Lee, 2007; Anand, 2010; Horne and Zuri, 2004). Similarly, individual measurement indicators of management support adopted by this study have individually been found in the literature to influence performance (Horald et al, (2004); Westerveld, (2006); McCoy, (2005); Dahmash and Abu Za, (2009); Admour, (2003); Otieno, Waiganyo and Njeru, 2015). The existence of the conflicting results on the relationship of management support and performance in the literature may be attributed to the varying contexts, methodology and data sources used by different scholars.

However, the observation made on this study variable could be credited to the fact that management officials are short of a clear understanding of the beneficiaries' constraints and challenges in reference to the performance of the dairy cooperative societies, and especially if they are not among the primary beneficiaries of the DPCS. Most likely, the managers are in deficient of management skills and more so monitoring and evaluation to add value to the DPCS in their portfolio. The negative non-significant relationship between management support and DPCS performance could also be attributed to the resistance to change by the persons in the management and failure to acknowledge the contribution of M & E in the performance of the dairy cooperative societies for primary stakeholders' benefits.

Monitoring and evaluation practices have been documented and utilized in most industries, but have not had a wide application in the local dairy industries until the recent expansion and commercialization of dairy among the smallholder dairy farmers (Thomas, 2012). In many other industries in the business field, managers are praised for adapting changing circumstances (Maclay, 2015). The observation made from this present study findings, may not apply to the DPCS in Murang'a County based on various other factors not of this study interest.

Integrating M & E in the planning of the dairying activities would enable the management team to acknowledge the need for change to improve the performance of the dairy primary cooperative societies towards the realization of Vision 2030. This call for change is supported by Richard, Cynthia, and Holly, (2009) who assert that

integrating project planning and M & E systematically into the project management would yield results.

4.10 Moderating influence of management support on the relationship between M & E strategies and performance of Dairy Primary Cooperative Societies in Murang'a County.

To achieve the last study objective, which was to determine if management support is a moderator for the model, a hierarchical multiple regression analysis was conducted. Three steps were involved. The null hypothesis to answer the sixth research question indicated in chapter one is stated below.

Hypothesis H06: Management support does not significantly moderate the relationship between monitoring and evaluation strategies and performance of dairy primary cooperatives in Murang'a County, Kenya.

Step one: Influence of combined M & E strategies on the performance of DPCS in Murang'a County

In the first step, two study variables were included in the model: M & E strategies and DPCS performance. This allowed the researcher to control for the M & E strategies in order to test for the influence of management support. The model was expressed by the following equation.

Model 1: $Y = (b_0 + b_1X_1 + b_2X_2 + b_3X_3) + \varepsilon$

(X_1, X_2 and X_3 are the M & E strategies) which are the study independent variables (IVs)

In step two, the moderator variable (management support) was added to the initial equation to form model 2 as stated below.

Model 2: $Y = (b_0 + b_1X_1 + b_2X_2 + b_3X_{3\,+} b_4M_4) + \varepsilon$

Step three involved interactions between the moderator and the predictors of the study where the interaction term was added in the model 2 to test on whether management support has any interaction on the M & E strategies.

Model 3: $Y= (b_0+b_1X_1+b_2X_2+b_3X_3+ b_4M_4 +IVMV+\varepsilon)$

(IV×MV) is the interaction term

Interaction term is a product of the independent variables and the moderator which should be integrated into the analysis so that the moderator effect can be interpreted concerning its slope and significance (Cohen, West, & Aiken, 2014). Any change in the R^2 would indicate a statistical influence of the independent and dependent variable by the moderator variable. The hierarchical regression analysis results are shown in the Tables 4.52, 4.53 and 4.54

Table 4.52 Model Summary

Model	R	R^2	adjusted R^2	Std error of estimate	R^2 change	F change	df1	df2	Sig. F Change
1	.463[a]	.214	.205	3.530	.214	23.065	3	257	.000
2	.464[b]	.215	.203	3.534	.001	.306	1	256	.580
3	.464[c]	.215	.200	3.541	.000	.013	1	255	.909

a) Predictors: (constant), M & E strategies

b) Predictors: (constant) M & E strategies, management support

c) Predictors: (constant) M & E strategies, management support, interaction term

For the regression model 1, the findings R^2 indicate that 21.4 % of the variability in the dependent variable is accounted for by all the independent variables (M & E strategies) together. An F value of F (2, 257) =23.065 with an associate p value of 0.000 which is less than 0.05, the chosen level of significance indicates that the relationship between the independent variable and the DPCS' performance was significant. Introduction of management support variable increased R^2 from 21.4% to 21.5% with a relationship between the variables that are not significance F (1,256), p > 0.05. This indicates that inclusion of management support in the M & E strategies predictors added a very small prediction power of 0.001 to the initial model which is not significant to the performance of the DPCS.

Step 3 involved the interactions between the moderator and predictors of the study. The addition of the interaction term in this step of the analysis did not improve the prediction of M & E strategies on the performance of DPCS R^2 =.215, F (1,255) = .013, p >.0.05). The p value obtained ($p = 0.909$) is greater than the chosen level of confidence. This was an indication that interacting M & E strategies with management support had no influence on the strength of prediction for the performance of DPCS. The statistics from the ANOVA Table are indicated in Table 4.53.

Table 4.53: ANOVA Table

Model	Sum of sqs	Df	Mean squares	F	Sig.
1 Regression	862.075	3	287.358	23.065	0.000[b]
Residual	3164.472	258	12.459		
Total	4026.547	261			
2 Regression	865.903	4	216.476	17.328	.0000[c]
Residual	3160.644	257	12.493		
Total	4026.547	261			
3 Regression	866.069	5	173.214	13.811	0.000[d]
Residual	3160.478	256	12.452		
Total	4026.547	261			

a) Dependent variable: DPCS performance

b) Predictor: (constant) M & E strategies

c) Predictors :(constant), M & E strategies, management support

d) Predictor: (constant) M & E strategies, management support, interaction term

Results in Table 4.53 show the F ratio of F= (3,258) =23.065 with an associated significance of $p < 0.05$ for the first model with M & E strategies as the only predictors of performance. For the second model with the moderating variable, the F ratio is F (4, 257) =17.328. On interacting the M & E strategies with management support, model 3 shows that the F ratio (5, 256) =13.811 with a p value of 0.000. Interacting the M & E strategies with management support did not improve their ability to explain the performance of the dairy primary cooperative societies in Murang'a County. The un-

standardized coefficients were used to show whether there was any change on performance for each unit of increase of the predictors present in the three models. The regression coefficient outputs of the three different models are presented in Table 4.54

Table 4.54: Regression Coefficients

	Model	Unstandardized coefficients		Standardized Coefficinents	t	Sig
		B	std error			
Model 1	Constant	20.119	2.988		6.734	.000
	M & E Planning	.170	.066	.158	2.577	.011
	M & E team strengthening	.323	.064	.307	5.071	.000
	M&E communication	.143	.057	.148	2.494	.013
Model 2	Constant	21.901	4.395		4.983	.000
	M&E planning	.169	.066	.156	2.551	.011
	M&E team strengthening	.327	.064	.310	5.094	.000
	M&E Communication	.140	.058	.146	2.437	.016
	Management-support	-.037	.066	-.031	-.554	.580
Model 3	Constant	17.233	40.826		.422	.673
	M&E planning	.209	.355	.193	.588	.557
	M&E team strengthening	.368	.366	.349	1.005	.316
	M&E communication	.181	.358	.188	.056	.614
	Management support	.062	.862	.052	.072	.943
	Interaction term	-.001	.007	-.120	-.115	.909

By substituting the beta values to the respective regression models, the following details were observed. The resulting equation of model 1 was:

$$Y = 20.119 + .170 X_1 + .323 X_2 + .143 X_3 + \varepsilon$$

The resulting regression model explains that a unit increase in M & E strategies would result to 63.6 % increase in DPCS' performance in absence of the management support variable.

In addition of the management support variable, the prediction power of the DPCS performance was negative and the relationship was not significant. Model 2 regression equation shows relationship of the tested predictor variables on DPCS performance.

$$Y = 20.119 + .170 X_1 + .323 X_2 + .143 X_3 - .037 X_4 + \varepsilon$$

Interacting the M & E variables with the management support variable did not yield any significant influence and therefore the null hypothesis that management support does not significantly influence the relationship between M & E strategies and the performance of the DPCS was supported. Model 3 regression equation summarizes the relationship of the interacted variables with management support.

$$Y = 20.119 + .170 X_1 + .323 X_2 + .143 X_3 - .037 X_4 - .001 IVMV + \varepsilon$$

Contrary to the study hypothesis, management support was found to have no significant influence on the relationship between M & E strategies and the performance of DPCS leading to supporting the null hypothesis that; moderation influence of management support does not exist between M & E strategies and the performance of the dairy primary cooperative societies in Murang'a County.

From the literature reviewed, there seem to be conflicting results as most of the empirical studies support the moderating influence of management support between various predictor variables and performance (Long, and Fei, (2015); Mayne, (2007) ;Georgiera and Allan, (2008) McComb., 2008; Naranjo-Gil, 2009). Similarly, a longitudinal study by Mugwagwa, (2007) on Marirangwe dairy projects noted that presence of management support on M & E practice correlated positively and significantly with dairy performance. In the same vein, Hwang, and Lim, (2013) contend that supporting of the M & E players increase the level of effort, persistence and ability towards achieving the organizational goal. In addition, Yang et al., (2011) stresses that management support is a mediator variable in the relationship between monitoring and evaluation and the project success. Never the less, results of Manigart,

(2001) found that companies with management support had a lower survival rate than those with such support in concurrence with findings by Stubner, Wulf and Hungenbrg, (2014) on management support and performance of startup companies in Germany.

All in all, the results of the present study confirmed that the management support offered by the management officials has no potential to moderate the relationship between M & E strategies and performance of dairy primary cooperative societies operating in Muranga County. As far as the performance of dairy primary cooperative societies is concerned based on the used monitoring and evaluation strategies, it seems reasonable to assume that the type of the management support offered to the dairy primary cooperative societies is not relevant especially if the management officials are not well informed about their portfolio cooperatives or lack relevant knowledge and competencies.

4.11 Summary of the Chapter

This chapter presented a detailed discussion of the study findings from the sampled respondents; dairy farmers, M & E team members and the management officials. Different tests on the data from the respondents were used for analysis, both descriptively and inferentially for valid results worthy conclusion of this present study. Among the statistics computed were, frequencies for the Likert type responses, average means, standard deviations and standard error, correlation coefficients and coefficients of determination. For inferential analysis, a paired sample t test was used to test for the study hypotheses in order to answer the research questions stated in chapter one and to help make inferences about the whole target population from the studied sample.

The association of the three M & E strategies focused by the study was found positive and significant but at varying levels. However, the correlation of management support on performance of the DPCS was negative and of no significance. In conclusion the interaction of the moderator variable with the M & E strategies yielded no power of prediction of the outcome variable, an implication that management support has no potential of moderating the relationship of M & E strategies and performance of dairy primary cooperative societies in Murang'a County, Kenya.

CHAPTER FIVE

SUMMARY OF THE FINDINGS, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

The following chapter concludes this report. A summary of the research is presented and major study findings based on the objectives of the study are discussed. Further, conclusions from the findings and contributions of the study are presented with a summary of constraints and limitations highlighted. In addition, recommendations arising from the evidence of and contributions to the body of knowledge are outlined, with suggestions for further research towards filling the gaps identified in the study.

5.2 Summary of Findings

The study sought to establish the influence of monitoring and evaluation strategies, management support on the performance of dairy primary cooperative societies in Murang'a County, Kenya. The research was undertaken on the dairy primary cooperative societies (DPCS) with an intention to examine the relationship between M & E strategies, management support and performance of DPCS. The moderating influence of management support on the relationship between the study predictor and outcome variables was also investigated. The performance of the dairy primary cooperative societies was the study dependent variable with monitoring and evaluation strategies as the independent variable. Management support was treated as a second independent variable as well as a moderator variable. A brief summary of the study findings is presented in Table 5.1.

Table 5.1: Findings of the Study Research Questions

	Hypothesis	Findings	Conclusion
$H0_1$	There is no significant relationship between M & E planning strategy and DPCS' performance in Murang'a County	Null hypothesis was rejected	There was a significant positive relationship between the variables
$H0_2$	There is no significant relationship between M & E team strengthening strategy and performance of DPCS in Murang'a County	Null hypothesis was rejected	There was a significant positive relationship between variables
$H0_3$	There is no significant relationship between M & E communication strategy and performance of DPCS in Murang'a County	Null hypothesis not supported	There was a significant positive relationship between variables
$H0_4$	There is no significant relationship between M & E strategies and performance of DPCS in Murang'a County	Null hypothesis not supported	There was a significant positive relationship between variables
$H0_5$	There is no significant relationship between management support and performance of DPCS in Murang'a County	Null hypothesis supported	No significant relationship between the variables
$H0_6$	There is no significant moderating influence on the relationship between M & E strategies and performance of DPCS in Murang'a County	Null hypothesis supported	Management support had no significant moderating influence

The study focused on performance of the dairy primary cooperative societies as the outcome variable. Investigation of performance of DPCS in Murang'a County was based on four performance measurement indicators: consistence in milk delivery to the dairy cooperatives societies, dairy farmers' income from milk sales, membership enrolment and satisfaction of dairy farmers with the dairy primary cooperatives operations. The performance of the DPCS based on the four measurement indicators was confirmed by the majority of the study respondents. This implies that the initial objectives of the dairy cooperatives to empower the smallholder dairy farmers were being achieved and especially improving the living standards of the dairy cooperatives' beneficiaries. The In-depth interviews in collaboration with focus group discussion results confirmed the dairy farmers' concurrence with the DPCS performance indicators.

5.2.1 M & E Planning Strategy and Performance of Dairy Primary Cooperative Societies

Monitoring and evaluation planning strategy is among the study predictor variables investigated on the performance of dairy primary cooperative societies of Murang'a County. The indicators used to measure this construct were: stakeholders' involvement, budget allocation and utilization of the M & E findings.

Several analyses were done including descriptive, inferential and statistical tests to confirm support on the hypothesis of this variable. There was a mixed opinion registered by the study respondents with a few at variance with the proposed relationship between the variables. The non-responses among the study respondents designated lack of participation in the management process and more so in the monitoring and evaluation of the DPCS' operations. The dairy farmers in agreement with this proposition were those involved in the planning of M & E activities, budgeting and deciding on the recipients of the M & E findings. The Pearson correlation analysis confirmed existence of a positive significant association between the M & E planning and performance variables (r = .309, p< 0.05, n =261) despite the low prediction power (R^2 = .095, p = .000) towards DPCS performance. In this case, the respondents were supportive to this construct such that if the M & E activities were well planned by involving the stakeholders, timely allocation of M & E budget and utilization of the M & E findings, the overall performance of DPCS would be enhanced.

The t statistic results, (t (260) = 4.479, (p = 0.000) indicated that the null hypothesis that there was no significant relationship between M & E planning strategy and performance of the dairy primary cooperative societies was declined in support of the alternative research hypothesis that M & E planning strategy significantly influences performance of dairy primary cooperative societies in Murang'a County, Kenya. Monitoring and Evaluation planning strategy was therefore established to influence the performance of DPCS. This indicates that when the activities involved in monitoring and evaluation process are premeditated in the initial stages while other DPCS management activities are being planned, the M & E practices will then yield data valid to inform the DPCS stakeholders in decision making. This will indeed contribute to

improving the overall performance of the DPCS. Furthermore, the commitment and ownership of M & E findings by the stakeholders for learning would only be gained by involving them in the planning process of the M & E activities, remarkably budget allocation, stakeholders' involvement, how, when and who to use the M & E results.

5.2.2 M & E Team Strengthening Strategy and Performance of DPCS

The influence of M & E team strengthening strategy on performance of dairy primary cooperative societies in Murang'a County, Kenya was also examined. The indicators used to measure this anticipated relationship were; clarity of M & E roles, optimized size of the M & E team and presence of M & E internal capacity.

Consulting the study findings, this construct was perceived differently by the study respondents, dairy farmers, M & E team and management officials. Majority of the dairy farmers were in harmony with the construct's statements with a small proportion disagreeing with the projected association between the two variables. On the other hand, a number of the dairy farmers were neutral to the statements describing the M & E team strengthening variable. From the findings, most of the respondents and specifically the dairy farmers were less knowledgeable on the monitoring and evaluations done in the assessment of the dairy primary cooperative societies' progress due to lack of involvement in the management process, and more so in the monitoring and evaluation process.

The influence of this independent variable on DPCS' performance was affirmed through Pearson correlation results (r=.401, p=.000) which asserted a significant relationship between M & E team strengthening strategy and performance of the dairy primary cooperative societies. Clarifying the roles and responsibilities of the optimum persons tasked with the monitoring and evaluation work on the DPCS progress, and equipping them with the necessary internal capacity would enhance their work performance which would translate to the performance of the DPCS. From the dairy farmers' perspective, the M & E team strengthening strategy came into sight as a stronger influencing factor on the performance of the DPCS compared to the M & E planning strategy.

The t statistics, (t (260) =26.134), p< 0.000) concluded the existence of a significant correlation between M & E team strengthening strategy and DPCS' performance. The

qualitative information from the key informants summed up the positive significant contribution of M & E team strengthening strategy to the performance of the dairy primary cooperative societies operating in Murang'a County. From the various analyses on the M & E team strengthening strategy and DPCS performance, there is evidence that strengthening the persons tasked with the monitoring and evaluation function contributes positively and significantly to the performance of the dairy primary cooperative societies.

5.2.3 Monitoring and Evaluation Communication Strategy and Performance of dairy primary cooperative societies in Murang'a County.

To measure the influence of this variable on the performance of DPCS, the following measures were adopted; M & E communication frequency, diversity of M & E communication channels and M & E target audience.

To achieve this objective, several analyses were performed. The frequency distribution of the dairy farmers' responses suggested the existence of an association between M & E communication strategy and performance of the dairy primary cooperative societies. However, this type of analysis reflected cases of neutrality in dairy farmers' responses, an indication that monitoring and evaluation practices were not yet very familiar to the dairy stakeholders at the milk production level. The dairy farmers in agreement with the statements of M & E communication strategy variable were those endowed with basic education and frequently informed of the performance progress of the DPCS. Never the less, the influence of this construct on performance is proposed by the results of the dairy farmers' telephone interview, in-depth interview and focus group discussion of the management officials and M & E team members respectively. In addition, the descriptive statistics (M=38.48, SD = 4.11, SE =.255) proposed the need to diversify M & E communication channels and frequent communication of monitoring and evaluation findings to the target audience through effective formats to enhance the performance of the dairy primary cooperative societies of Murang'a County.

The direction and the magnitude of the proposed relationship between the two variables were confirmed positive and significant by the Pearson product moment correlation coefficients ($r = .277$, $p = 0.000$). From the dairy farmers view, this observation implied that application of multiple communication channels, frequent communication of the M

& E findings to the target audience facilitates complete and timely delivery of information for informed decisions. This would indeed enhance performance of the DPCS in Murang'a County. The significant relationship between M & E communication and performance was ascertained by the t statistics outputs, (t (260) =19.255, p < 0.05). As of these results then, the research hypothesis of significant correlation between M & E communication strategy and performance of dairy primary cooperative societies in Murang'a County was supported.

5.2.4 Combined M & E-Strategies and Performance of dairy primary cooperative societies

The Pearson correlation coefficient r = .463, p < 0.05 confirmed a positive significant and moderately strong correlation between the M & E strategies and performance of the DPCS. The combined M & E strategies explained 21.4 % of the variations in performance of dairy primary cooperative societies which was greater than any of the monitoring and evaluation strategies used each on its own.

Regarding the magnitude of the association, the correlation coefficient confirmed that when the M & E strategies have combined the strength of the relationship it is greater than when each M & E strategy is used individually. Despite the fact the three M & E strategies give a positive and statistically significant relationship when singly used, it is advisable to merge them to reinforce their influence on the performance of the dairy cooperative societies in Murang'a County. Qualitative information from the purposefully and conveniently selected dairy farmers, M & E team members and the management officials supported the alternative hypothesis that there exists a significant relationship between the studied M & E strategies and the performance of the DPCS in Murang'a County and therefore, the null hypothesis that there is no significant relationship between M & E strategies and DPCS' performance was rejected.

5.2.5 Management Support on Dairy Primary Cooperative Societies in Murang'a County

To measure the influence of management support variable on the performance of DPCS, the following indicators were adopted; provision of incentives for motivation, professional development for skills and provision of modern technology. From the frequency distribution of the dairy farmers' responses on this construct, there was a

mixed opinion on the statements measuring the proposed relationship between management support and the performance of the DPCS. The magnitude and the direction of the relationship between the two variables were confirmed by the correlation and regression analysis results. From the Pearson correlation analysis, a negative relationship of a weak strength (r = -.025, p > 0.05) at 95% significance level in a two-tailed test was found to exist between the two variables. Nevertheless, this relationship was found to have no significance (p = .688) and therefore support of the null hypothesis that no significant relationship existed between management support and the performance of the dairy primary cooperative societies in Murang'a County.

As far as management support is concerned, this study recorded that management support offered by the DPCS managers did not have any significant influence on the performance even though most managers from different organizations believe that management support is a predictor of performance.

5.2.6 Moderating Influence of Management Support on the relationship between M & E Strategies and Performance of Dairy Primary Cooperative Societies in Murang'a County

The hierarchical regression analysis results confirmed non-existence of any moderating influence on the relationship between M & E strategies and performance of the DPCS. On introducing the management support construct into the model containing the M & E strategies, the strength of the relationship slightly increased with an R^2 change from 21.4 % to 21.5%, although the resulted relationship was not statistically significant. Subsequently, the M & E strategies interacted with the management support; the R^2 of the resulted model remained the same, confirming the absence of any potential moderating influence on the relationship between M & E strategies and the performance of the dairy primary cooperative societies. Contrary to the study expectation, a moderating effect of management support was not observed leading to supporting the null hypothesis.

5.3 Conclusion

Dairy cooperatives societies are expected to play a major role in improving the productivity and marketing capabilities of the dairy farmers. Multiple factors determine the success or failure of these cooperatives. Analysis of these factors is imperative in

the search for possible solutions. In particular, this study attempted to assess the influence of M & E strategies on the performance of dairy primary cooperatives societies in Murang'a County and whether this relationship can be moderated by management support. According to the results of this study, the studied monitoring and evaluation strategies have been found to have a positive and statistical significant influence on the dairy primary cooperative societies, singly and collectively. The stakeholders concerned should get advised on the appropriate M & E strategies to be adopted to maximize the performance of their dairy cooperative societies. The involvement of the dairy cooperative societies' stakeholders in the M & E planning process should be encouraged and more so in the monitoring and evaluation of the DPCS' activities. From the findings, the involvement of the dairy farmers in the planning process will enhance membership enrolment and retention, increase ownership and loyalty for support and consistence in selling their milk through the dairy primary cooperative societies they are registered with.

Furthermore, allocation of financial resources for monitoring and evaluation process has been found basic to enable adequate and timely collection of quality and complete data which when appropriately utilized will translate to improved performance of the DPCS. Consequently, involving persons tasked with M & E function in the budgeting process increases ownership of findings for informed decisions which in total would increase performance. It is therefore of much essence to budget for M & E within the overall production cycle, set aside resources enough for M & E activities, collaborate representative stakeholders in the entire planning process of the DPCS operations and guarantee utilization of the M & E findings in the improvement of performance of the dairy primary cooperative societies.

Additionally, strengthening of the M & E team by improving their capacity to monitor and evaluate the DPCS' operations have been found to improve consistency in data collection and increase use of findings in the planning process towards improving the performance of the dairy primary cooperative societies. Subsequently, the study has shed light on the importance of clarifying roles for the evaluation team members and endowing the M & E staff with M & E internal capacity. A strengthened team is able to gather quality data, train and mentor the dairy cooperative societies' stakeholders to remain on track towards achieving their set objectives. In conclusion, the more the M &

E persons are strengthened, the more enhanced will be their performance and the more improved will be the performance of the dairy cooperative societies.

Conversely, communication of the evaluation findings to the relevant stakeholders is found to correlate positively with the performance of the dairy primary cooperative societies in Murang'a County. Frequent communication of M & E findings through diverse channels will enhance timely information rich data to the targeted DPCS' stakeholders. This will motivate the stakeholders into making informed changes towards improved performance. The M & E findings intended for the dairy farmers, managers, and other secondary stakeholders have to be communicated in a way that is engaging, understandable and motivating not to compromise the intended meaning and to avoid communication overload.

In summary, the performance of DPCS is partially about the way the M & E results are delivered to the stakeholders for implementation. Therefore, when planning for M & E communication, it is important to consider the appropriate communication frequency, most preferred and convenient formats and channels to avoid unnecessary impediments to performance. As supported by the literature, communicating M & E information to the stakeholders is a critical step in the management process and is necessary to increase performance on the studied dairy primary cooperative societies. Further, the theory of change of which this study is grounded on provides the basis for arguing that M & E communication will unearth whether the dairy cooperative interventions are making a difference or a change towards the wider goal, the 2030 vision.

In general, a positive influence has been found to exist between individual monitoring and evaluation strategy well thought out by this study and the performance of the dairy primary cooperative societies. However, combined M & E strategies disclose a stronger relationship than when the studied M & E strategies are used individually. Therefore, the dairy primary cooperative societies should make the most of M & E strategies that will lead to improved performance in meeting their objectives. In conclusion, the current study is important in that it provides support that monitoring and evaluation strategies used have their work in the performance of dairy primary cooperatives societies, an idea that was not clear prior to these findings.

In addition, management support has been found to have a negative influence on the performance of DPCS studied by this study. The results of the present study give reasons to support that management support offered by the DPCS managers has a negative influence and of no significant influence on the performance of the DPCS in Murang'a County. Furthermore, many organizations assume that such an effect exists, particularly if the concerned managers of the organizations are not dedicated to the operations of the interventions for performance. The DPCS' stakeholders should assess the actual value of this service in a more differentiated way, particularly if they have to practice effective monitoring and evaluation of their performance progress. There is also a need to rethink the way in which management has been delivered in the past and in related contexts. There is a reason to believe that the form of management support offered to the dairy primary cooperative societies is either too standardized thus lacking a high influence on the performance or probably no management support is delivered at all. From this observation then, management in the DPCS should consider delivering management support in a different way with a stronger focus on M & E contents. From the literature review, the dairy cooperatives are experiencing substantial growth and as such a lot of change is inevitable as a result of increased competition and therefore DPCS' managers should be open to changes and adoption of new innovations such like M & E strategies to increase achievements of the dairy cooperative societies.

5.4 Recommendations of the Study

Anchored on the findings of this study and the conclusion made, the following recommendations are made for policy action given that monitoring and evaluation strategies used have a bearing on the performance of the dairy primary cooperative societies in Murang'a County.

There is need for the dairy primary cooperative societies to continue sensitizing the dairy farmers within the county on the importance of joining dairy cooperative societies for a common unified market to increase their returns. The Murang'a County Creameries' board of management should ensure that there is adequate early planning for M & E activities including human resources and involvement of all stakeholders in planning and in conducting the M & E activities. Likewise the M & E findings should be utilized maximally for lesson learning and in decision-making process for improved performance.

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The fact that a strengthened M & E team was confirmed a predictor of dairy primary cooperative societies' performance, the Murang'a County government should go extra promoting and strengthening persons tasked with the M & E activities of the dairy cooperative societies operations. The Murang'a County Creameries board of management should develop harmonized training curricula for the M & E staff and conduct training workshops as a way of increasing their capacity. This will contribute to the induction of local M & E experts, as well as improve the quality and quantity of the experts. There should also be periodic refresher courses for the M & E team members to keep them updated in their fields. The County Government should also ensure full integration of the M & E in the development plans to ensure allocation of budget to cater for the monitoring and evaluation of the DPCS operations for performance.

The dairy primary cooperative societies' management officials should ensure that the monitoring and evaluation results on the DPCS' progress are timely and frequently communicated through diverse communication channels to reach all the stakeholders for feedback. They should also expand knowledge and information sharing base using different Media like open field days, workshops, feedback meetings, posters, leaflets, and others to help in attracting more members. Involvement of the stakeholders will also promote ownership, commitment and thus enhanced performance.

From the dairy stakeholders' concern, there are completely no extension services to their reach from the county government to support the dairy farmers at the milk production level. It is therefore recommended that the county government consider extending various dairy services to the dairy farmers at the farm level to enable more and quality milk production to sustain both the dairy primary cooperative societies and the Murang'a County Creamery once it is fully functional.

The County Government should ensure that the management support to the DPCS is in the form of creating an enabling environment for the dairy cooperatives operations free from any political interference which would rather compromise the DPCS functioning and performance. There should also be a management policy stressing on the transparency and accountability of the management role in order to remove hindrances into attracting and retaining more members in the dairy societies.

From the dairy farmers concern, the county government should consider recruiting management officials from within the County to enhance ownership of the DPCS operations. Once the managers are among the beneficiaries of an intervention, they tend to own it and dedicate to its operations and at the same time protect it from the external forces.

Management officials should have knowledge on the best practices and principles of the dairy primary cooperative societies. This will enable them to improve their performances. It was noted that the management of the cooperative had no significant support on the DPCS an indication of insufficient knowledge on how to run cooperatives effectively. Therefore a comprehensive training programme for management skills by the county government is important in order to enhance the performance of the dairy cooperative societies. The training should be based on the management and monitoring and evaluation skills to enable the managers own and integrate the two practices in their operations towards DPCS performance.

5.5 Suggestions for further research

This study has focused on monitoring and evaluation strategies from the perspective of dairy primary cooperative societies based on Murang'a County, Kenya. Considering that the situation of DPCS in Murang'a County may be different from those of other counties in Kenya, future similar studies can be extended which would be valuable in broadening understandings of DPCS' monitoring and evaluation strategies and in determining their influence on performance.

Further studies in different contexts other than dairy cooperative societies would reveal new insights into the influence of the studied M & E strategies on performance. To examine how M & E strategies are being conducted in other cooperatives with a view of unearthing of the best M & E practices. An interesting step within this trend could be to ascertain the extent to which other M & E strategies other than the ones focused by this present study could influence the performance of dairy primary cooperative societies in Kenya.

From the study findings, most of the respondents supported the study constructs' statements based on the adopted measurement indicators and these constructs were confirmed to have positive significant relationships with the performance of DPCS.

Some of these measurement indicators include budget allocation, stakeholders' involvement, monitoring and evaluation findings utilization, size of the M & E team, clarity of M & E role, and of internal M & E capacity, M & E communication channels and M & E communication frequency. There is, therefore, need to conduct future researches on individual indicators to examine the magnitude of their influence on the performance of the DPCS in Murang'a County.

Management support variable was found to influence the performance of the dairy primary cooperative societies negatively with a non-significant relationship. The measurement indicators used were: provision of incentives, professional development for skills and provision of modern technology. This finding contradicted the hypothesized relationship and findings of other empirical studies on various contexts. The study therefore suggests for other extended studies on the same variable on performance but with varying measurement indicators to add to the existing body of knowledge.

Other moderators can be used by future scholars on the relationship of monitoring and evaluation strategies and performance of the dairy primary cooperative societies.

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APPENDICES

APPENDIX 1: INTRODUCTION LETTER

NJOROGE NAOMI NDUTA

P.O Box 2586-01000, Thika.

Tel. 0722 320 817

Murang'a County Creameries' Manager

P.O Box

Murang'a County.

Dear Sir/ Madam,

RE: PhD Thesis Title:

Monitoring and Evaluation Strategies, Management Support and Performance of Dairy Primary Cooperative Societies in Murang'a County, Kenya.

I am a registered PhD student in the Department of Extra Mural Studies at the University of Nairobi undertaking PhD degree and in the process of developing a thesis on the above stated title.

The dairy primary cooperatives societies (Murang'a County) have been selected to offer some required information to facilitate this study. I kindly request you to provide the information required by completing the accompanying questionnaire. The information will be used for research purposes only and your identity will remain confidential. Please find attached herewith copies of my research permit from the Government of Kenya and a letter from the Chairman of the Department of Extra Mural Studies at the University of Nairobi.

Your assistance will be highly appreciated.

Yours faithfully,

Njoroge N. Nduta

L83/94247/2014

APPENDIX II: QUESTIONNAIRE FOR THE SMALLHOLDER DAIRY FARMERS REPRESENATIVES

This survey questionnaire is for gathering data for a study being conducted on the performance of the dairy primary cooperative societies operating in Murang'a County. Your opinion will help in improving their performance. The survey should take not more that 10 minutes and your response are completely anonymous.

SECTION A: General information about the respondents

Please fill in the information below by ticking (√) appropriately.

1. Kindly specify your gender.

    a. Male ⬭   b. Female ⬭

2. What is your age bracket?

Age group	Kindly tick
29 and below	
30-39	
40-49	
50-59	
60 and above	

3. Please indicate your highest formal academic qualification. Please tick

No formal education	
Primary school level	
Secondary school level	
Diploma/certificate	
University level	

4. Kindly indicate your employment status   a. No formal employment ⬭   b, formally employed ⬭

    c, retired ⬭   retrenched ⬭

5. For how long have you been in the dairy primary cooperative?

    a. Less than 1 years   b, 1-2 years ⬭   c. 3-4 years ⬭ d. Over 4 years ⬭

6. What is your daily average milk production?

    a.   Below 10 liters ⬭   b) 10-15 liters ⬭

    b. 15-20 litres ⬭   d) above 20 liters ⬭

7. In which of the milk production skills have you ever been trained on?

    .a, Fodder production and feeding ⬭   b, Artificial insemination and breeding ⬭

    .c, Disease treatment and control ⬭   d, Record keeping ⬭

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Section B: Performance of Dairy Primary Cooperatives

This section contains items on the dairy primary cooperatives performance. Kindly indicate your appropriate answer by putting a tick in the space provided.

8. Of the total milk produced per day, how many litres do you take to the cooling centre?

       a) Below 10 liters ⬭   b) 10 - 14 liters   ⬭

       c) 15- 20 liters   ⬭   d) above 20 liters   ⬭

9. How has your income from the milk sales changed since you joined the primary cooperative?

       a) Sharply increased ⬭   b) increased   ⬭

       c) Decreased   ⬭   d) no change   ⬭

10. Have you realized any change in your living standards since you joined the dairy primary cooperative?

       a) Yes ⬭   b) No   ⬭

12. Are there side milk marketing from the registered farmers (selling of milk to other local buyers)?

.a, Yes ⬭   b, No   ⬭

13, If yes, what do you think are the influencing factors?

,a, Low pricing ⬭   b, Inconsistent payment ⬭ c, Low volumes of milk production ⬭

,d, Inconveniences of milk transport means to the collection centres   ⬭

14) Please indicate below, the cooperatives' overall performance over the last 4 years in the following outcome areas relative to your project's target. (Please put one tick on each statement)

Statement	Strongly agree 5	Agree 4	Neutral 3	Disagree 2	Strongly Disagree 1
a. Training on dairy cow feeding and breeding have contributed greatly to the growth of milk production.					
b. The milk price offered per liter is low compared to the open market.					
c. The number of dairy farmers joining the dairy primary cooperatives has increased with time.					
d. There is still much milk sold directly to the informal milk vendors.					

	Strongly Agree 5	Agree 4	Neutral 3	Disagree 2	Strongly disagree 1
e. The dairy primary cooperatives have created job opportunities to the local community.					
f. The price of milk per liter has remained constant across seasons.					
g. Consistent milk sales have contributed to improved living standards.					
h. The milk coolers are adequate to handle the dairy milk production capacity.					
i. The cooling plants are not accessible to majority of the dairy farmers.					
j. There is regular payments for milk delivered on monthly basis					
k. The quality of milk delivered to the cooling points has improved with time.					
l. We are satisfied with the performance of the dairy primary cooperatives.					

Section C: Project M & E planning Strategy on Dairy Primary Cooperative societies Performance

The following questions refer to the monitoring and evaluation planning strategy on the dairy primary cooperatives' performance.

16 Kindly tick the most appropriate statement that best explains the M & E status on performance of the dairy primary cooperative societies.

Statement	Strongly Agree 5	Agree 4	Neutral 3	Disagree 2	Strongly disagree 1
a. Dairy farmers' representatives are included in the planning of the dairy primary cooperative societies' activities.					
b. Dairy farmers are not directly involved in the monitoring and evaluation					

of the dairy cooperative societies' activities.					
c. We are informed of the dairy primary cooperative societies' performance indicators.					
d. Monitoring and evaluation activities are among the main activities of the dairy primary cooperative societies					
e. Financial resources to support the primary cooperatives are acquired from multiple sources external to the county government					
f. Dairy farmers are mobilized to facilitate for monitoring of the dairy activities					
g. The costing of the monitoring and evaluation work was done on the onset of the dairy cooperative societies.					
h. dairy producers are represented in the decision making on the cooperatives running activities					
i. Assessment feedback report is given to the stakeholder for improvement					
j. Monitoring report is utilized by dairy stakeholder for improving the cooperatives performance					
j. The diary cooperative stakeholders are receptive to the M & E findings for recommendations.					
k. Development of performance indicators is done through participatory approach					
l. Utilization of the M & E results helps a lot in performance improvement					

Section E: monitoring and evaluation Team Strengthening Strategy

This section contains items on the project M & E team strengthening strategy and project performance.

12). Please check the answers below, which most closely match your opinion regarding M & E team strengthening strategy. Rate the indicated statements using a scale of SA – Strongly Agree; A – Agree; D – Disagree; and SD – Strongly Disagree

Statement	Strongly Agree (score-5)	Agree (Score-4)	Neutral (Score-3)	Disagree (Score-2)	Strongly disagree (Score-1)
a. Monitoring and evaluation tools provided by the management are appropriate to measure DPCS performance					
b. The persons to conduct monitoring and evaluation of dairy activities are not adequate					
c. Monitoring report is utilized by dairy stakeholder to improve the cooperatives performance					
d. The cooperatives have adequate internal capacity to conduct M & E activities					
e. The M & E persons are well versed of their roles and responsibilities					
f. Persons assigned monitoring role are frequently trained on monitoring and evaluation skills					
g. There has been shortcomings in the monitoring and evaluation of the cooperatives' dairy activities					

	Strongly Agree (score-5)	Agree (score-4)	Neutral (score-3)	Disagree (score-2)	Strongly disagree (score-1)
h. M&E team use multiple data collection tools to gather detailed information from the stakeholders.					
i. The monitoring report enables cooperative management to address diverse dairy challenges					
j. The M&E team members have different M&E skills in different areas of specialization					
k. The available M & E trained members are not adequate to effectively monitor the diary societies' operations.					
l. The M & E techniques and methods used have not been up-graded to date					

Section F: M & E Communication Strategy on dairy primary cooperative societies' performance.

13). Kindly rate the following statements using a scale of SA – (Strongly Agree); A – (Agree); D – (Disagree); and SD – (Strongly Disagree).

	Strongly Agree (score-5)	Agree (score-4)	Neutral (score-3)	Disagree (score-2)	Strongly disagree (score-1)
a. There is smooth and continuous flow of information from field officers' in the dairy primary cooperatives sections					
b. The dairy cooperatives' progress report is timely shared by the cooperative stakeholders.					
c. There is use diverse channels of M&E communication including					

face to face (open meetings), written information, electronics like vernacular radio, phones email					
d. Choice of M&E communication channels and formats depends on the target audience					
e. Frequency of communication of M&E report depends on the urgency of the information to the target audience					
f. M&E communication means are customized to reach the diverse groups targeted					
g. Frequent data communication enables informed decision making for DPCS management					
h. Inability of dairy farmers to use ICT delays communication of their dairy production concerns.					
i. The management and M&E team shares M&E performance information in open field meetings					
j. Electronics for communicating M&E information are not always readily available					
k. Dairy monitoring report is usually shared with the primary beneficiaries on monthly basis during DPCS					
l. M&E reports are first communicated to the management team then cascaded to the primary beneficiaries					

Section G: Management Support on Primary Cooperatives Performance

14). Please rate the indicated statements using a scale of SA – Strongly Agree; A – Agree, D – Disagree; and SD – Strongly Disagree

Statement	Strongly Agree (score-5)	Agree (score-4)	Neutral (score-3)	Disagree (score-2)	Strongly disagree (score-1)
a. There is adequate management support in the operation of the dairy primary cooperatives.					
b. The management team is directly involved in the operations of the dairy co-ops.					
c. Management provides financial rewards to dairy stakeholders to improve work motivation					
d. Provision of dairy feeds to farmers through the dairy primary cooperatives has not been consistent.					
e. The incentives provided encourage the dairy cooperative members' creativity and innovation					
f. There is a clear rewarding system targeting dairy farmers with improved milk production inform of bonuses.					
g. M&E staff have the skills for effective monitoring and evaluation					
h. Availability of technological facilities increase M&E work motivation for dairy performance					

i.	Management organizes open days to train dairy farmers on dairy management				
j.	There are no well-organized milk transport and delivery systems from farm levels to the cooling points				
k.	The management offers continuous training to persons who monitor dairy operations for skills				
l.	The equipment used in M&E are availed in a timely manner by the management				

Remarks:

Your participation in responding to the questionnaire items is appreciated.

If you would like to receive a copy of summarized results, please complete the following

information…………………………………………………..…………………………………

Email Address………………………………………………………………….…………

Telephone number…………………………………………………………………….…….

THANK YOU

APPENDIX III: INTERVIEW GUIDE FOR THE DAIRY PRIMARY COOPERATIVE SOCIETIES' MANAGEMENT OFFICIALS

This interview is a voluntary process. You will not be identified as a respondent without your consent. You may at any time, withdraw your participation, including withdraw from any information you have provided. You reserve the right to refrain from answering any question/s. if you complete this interview, however, it will be understood that you consented to participate in this research and consented to publication of the same with the understanding that your anonymity will be preserved.

Date of interview…………………………………………………………………………

Location interview is conducted………………………………………………………

Social economic data

1. Identification…contact details   2. Gender: male/ female

3. Highest level of education

Monitoring and Evaluation strategies and performance of Dairy Primary Cooperatives.

4. What are M & E strategies according to your understanding?

5. What are the main M & E strategies used by the Murang'a County creameries to monitor and evaluate the dairy primary cooperative societies performance? Who is responsible for the M & E work and in your own opinion, is M & E requirements well represented in the dairy primary cooperative societies' budget?

6. Is there a specified budget allocated for the M & E work?

7. Are the M & E roles and responsibilities well specified when planning for the dairy primary cooperative societies' activities?

8. What support does the management give to the M & E team to enhance their performance; may be in terms of incentives, working environment, expansion of their capacity, provision of field resources?

9. Kindly mention ways in which the dairy primary cooperative societies' actors especially at the production level receive assistance from the management office.

10. Are the M & E findings well used in the making of the DPCS decisions? Please if yes, mention areas of improvement as a result of the M & E strategies used.

11. Do you involve all stakeholders in the planning and monitoring of the DPCS activities? If yes, how?

12. How do you communicate the M & E results to the stakeholders including the primary beneficiaries

13. In your view, are the dairy primary cooperatives achieving their key objectives?

14. Are there ways dairy farmers are motivated to remain in the dairy primary cooperative societies for a common market for their dairy produce?

15. What is the average overall dairy milk sales per day and does it vary seasonally?

16. What is the price of milk per liter and is it consistent across seasons?

17. In your own view, have the dairy primary cooperatives being successful in meeting the short term objectives like employment creation, income generation, satisfaction of the beneficiaries and increase of membership enrollment?

18. From your own observation, do you think the dairy primary cooperative societies have been able to meet their expectations?

19. If not, what do you think are some of the constraints that are contributing to this trend?

Closing remark:

That is all I had for you. Thank you for participating in this interview. I would like to thank you for your time today, and I will certainly get back to you if I have some questions during the transcription process of this interview. Before I go, do you have any additional comments or questions?

APPENDIX IV: FOCUS GROUP DISCUSSIONS (FDGS) GUIDE FOR THE MONITORING AND EVALUATION TEAM

The discussion main question of focus was:

1. **Do the M & E strategies and management support influence performance of the dairy primary cooperative societies in Murang'a County?**

The following questions will be used to probe for more detailed information on the study variables.

   a) In your own assessment, is there any relationship between M & E strategies and performance of the **dairy primary cooperative societies**?

   b) Which M & E strategies are commonly used in assessing the project progress? Do you think there are better M & E strategies to effect the M & E work for DPCS' performance?

   c) From you own observation; do you think the type of **services** offered to the M&E team is adequate for performance of their M & E activities? If no, what do you think the management should do to enhance performance of M & E team for the overall DPCS' performance?

   d) In your own view, do you think there has been adequate support from the management towards the performance of the DPCS? If yes, how? If no, what do you think the management should do to enhance performance?

   e) Do you think the milk producer farmers are well motivated to remain in the dairy value chain project? If yes how? If no, what do you think should be done to encourage more dairy milk farmers into the dairy value chain project?

   f) What are some of the milk production constraints which would impact negatively on the dairy value chain project performance?

   g) Would you say that DPCS have been able to meet their short term objectives of improving the dairy farmers' standards of living?

   h) From your own observation, do you think the MCC operations are on the right track towards achieving its set target?

   i) If not, what do you think are some of the constraints contributing to this?

APPENDIX V: DOCUMENT ANALYSIS GUIDE

The documents guided the researcher on gathering information for the study purposes.

- The dairy primary cooperative societies' structure
- Membership enrollment register
- Monitoring and evaluation budget allocation plans
- Records on milk production and sales trend
- Monitoring and evaluation report for the last four years of operation
- Monitoring and evaluation work plan
- Project annual review reports
- Dairy primary cooperative societies' impact pathway document
- Monitoring and evaluation team capacity building records

APPENDIX VI: OBSERVATION GUIDE

The researcher will be guided to the following observations for data collection.

1. Available and operational milk coolers. (Are there enough coolers to accommodate milk delivered by the dairy farmers to the DPCS in dairy basis?

2. Cooling capacity of the available cooling plants (is there milk spoilage due to cooling challenges?

3. Available transport means of milk from production points to the cooling plants. Do the dairy farmers experience delays or absence of milk transport leading to milk spoilage?

4. Meetings held at the dairy farmers' level (attendance and contents)

5. Monitoring and evaluation communication means (frequency, communication channels' diversity and the target audience)

6. Any dairy farmers' income generating activities from their milk sales income

APPENDIX VII TELEPHONE INTERVIEW GUIDE FOR THE DAIRY

Date of interview………………………………………………………………………

Location interview is conducted……………………………………………………

Social economic data

- Identification…contact details

- Gender: male/ female

- Highest level of education

1. Are there M & E experts in the management of the dairy primary cooperative societies?

2. How often do they visit the specific dairy primary cooperatives for monitoring?

3. Are there monitoring activities at the dairy farmers' level?

4. As primary beneficiaries, are you directly involved in the planning for and also conducting M & E activities?

5. Do you ever receive feedbacks for the monitoring and evaluation done?

6. How often do you receive monitoring and evaluation feedback?

7. Are the primary beneficiaries involved when planning for M & E and also when conducting M & E activities?

8. Do the management officials utilize the M & E results in decision making to improve the performance of DPCS activities?

9. Are there reliable transport means to enable monitoring and evaluation team access the dairy primary cooperative societies

APPENDIX VIII: DAIRY PRIMARY COOPERATIVE SOCIETIES IN MURANG'A COUNTY

s/n	Dairy primary coop' societies	Sub-county	Membership
1	New Nginda	Maragwa	5163
2	Kangari United Dairy	Kigumo	4854
3	Kahuro	Kahuro	3935
4	Ruchu	Kandara	2826
5	New Murarandia	Kahuro	2822
6	Central Aberdares	Kigumo	2147
7	Kikama	Kangema	1883
8	Kigoro	Gatanga	1509
9	Kakaki	Kigumo	1401
10	Mbugitu	Gatanga	1176
11	Gakungu Dairy	Maragwa	1163
12	Kagata	Kahuro	1150
13	Umoja	Kiharo	1140
14	Sabasaba Agri-business	Maragwa	983
15	Kiarutara	Gatanga	965
16	Kamahuha	Maragwa	1052
17	Makomboki	Kigumo	735
18	Makomboki dairy	Kigumo	935
19	Gatanga Mwangaza	Gatanga	847
20	Muruka Jubilee	Kandara	736
21	Kigumo 18	Kigumo	698
22	Gaichanjiru	Kandara	665
23	Kagunduini	Kandara	654

APPENDIX IX: DATA COLLECTION PERMIT

THIS IS TO CERTIFY THAT:
MS. NAOMI NDUTA NJOROGE
of UNIVERSITY OF NAIROBI, 2584-1000
THIKA,has been permitted to conduct
research in Muranga   County

on the topic: MONITORING AND
EVALUATION STRATEGIES MANAGEMENT
SUPPORT AND PERFORMANCE OF DAIRY
VALUE CHAIN PROJECT IN MURANGA
COUNTY KENYA

for the period ending:
19th July,2019

Permit No : NACOSTI/P/18/93146/23990
Date Of Issue : 19th July,2018
Fee Recieved :Ksh 2000

....
Applicant's
Signature

Director General
National Commission for Science,
Technology & Innovation

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1. The License is valid for the proposed research, research site specified period.
2. Both the Licence and any rights thereunder are non-transferable.
3. Upon request of the Commission, the Licensee shall submit a progress report.
4. The Licensee shall report to the County Director of Education and County Governor in the area of research before commencement of the research.
5. Excavation, filming and collection of specimens are subject to further permissions from relevant Government agencies.
6. This Licence does not give authority to transfer research materials.
7. The Licensee shall submit two (2) hard copies and upload a soft copy of their final report.
8. The Commission reserves the right to modify the conditions of this Licence including its cancellation without prior notice.

REPUBLIC OF KENYA

National Commission for Science,
Technology and Innovation

RESEARCH CLEARANCE
PERMIT

Serial No.A 19582

CONDITIONS: see back page

APPENDIX X: DATA COLLECTION INTRODUCTION LETTER

MURANG'A COUNTY CREAMERIES

ALL CORRESPONDENCE TO BE ADDRESSED:
THE MURANG'A COUNTY CREAMERIES

MURANG'A COUNTY CREAMERIES

P.O Box 38—10205,
Maragua,
Kenya
E-mail: murangacreameries@gmail.com
Web: www.murangacountycreamerie.co.ke
Tel no: 0791031654

Date: 3rd August 2017

TO DAIRY COOPERATIVE SOCIETY CHAIRPERSONS

Dear Sir/ Madam

RE: NAOMI NDUTA NJOROGE OF ID NO 11117769 AND CELL NO 0722320817.

In reference to the text message dated **1st August 2017**pertaining the above-mentioned person. I wish to introduce Ms. Naomi Nduta a PHD student at the University of Nairobi and her research assistant Mr. Herman Githiomi, they are wishing to conduct an academic research titled: **Monitoring and Evaluation Strategies, Management Support and Performance of the Dairy Cooperative Societies in Murang'a County- Kenya**, with the following objectives;

1. To investigate influence of Monitoring and Evaluation Strategies on Performance of Dairy Cooperative Societies in Murang'a County- Kenya.
2. To determine the moderating influence of Management Support on Performance of Dairy Cooperative Societies in Murang'a County- Kenya.

For the period November 2017, December 2017 and January 2018 she and her research assistant will be visiting your Dairy Cooperative Society to conduct a survey on the earlier mentioned topic. In order to achieve this, she hopes to gather data through questionnaires with Dairy farmers and in-depth interviews with the management committee and focus group discussions with the Monitoring and Evaluation team.

Kindly accord her all the necessary support as we look forward to empowering our Dairy farmers in improving the dairy industry in our County.

Kind regards
MURANG'A COUNTY CREAMERIES
P. O. Box 52 - 10200, MURANG'A
TEL: 060 3020271

DANSON M. MWATHI..............SIGN:...................
OPERATIONS MANAGER - MCCCU

Map of Murang'a County

Murang'a County:Gini Coefficient by Ward

Location of Murang'a County in Kenya

Legend

County Boundary

Gini Coefficient

0.60 - 0.72

0.48 - 0.59

0.36 - 0.47

0.24 - 0.35

0.11 - 0.23

0   3.5   7   14 Kilometers