

**MONITORING AND EVALUATION SYSTEM,  
LEADERSHIP COMPETENCIES AND SUSTAINABILITY  
OF AGRICULTURAL PROJECTS FUNDED BY NON-  
GOVERNMENTAL ORGANIZATIONS IN BUNGOMA  
COUNTY, KENYA**

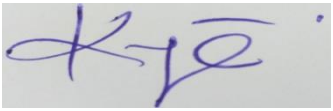
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**A Thesis Submitted in Partial Fulfillment of the Requirements for the  
Award of the Degree of Doctor of Philosophy in Project Planning and  
Management of the University of Nairobi**

**2020**

**DECLARATION**

This doctoral thesis is my original work and has not been presented for academic award in any other University.

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## **DEDICATION**

I dedicate this research report to my family members: Starting with my father, Julius Mbela Muli, my mother, Damari Mwikali, my brothers Jeremiah Mbela Muli and Anthony Nthuku Muli, my sisters Susan Kamweu Muli and MaryAnn Bahati Muli.

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## ABBREVIATIONS AND ACRONYMS

<b>AMREF:</b>	African Medical and Research Foundation
<b>APA:</b>	American Psychological Association
<b>CBO</b>	Community Based Organization
<b>CIDP</b>	County Integrated Development Plan
<b>CoP:</b>	Community of Practice
<b>CREAM:</b>	Clear, Relevant, Economic, Monitor able, Appropriate
<b>ESK:</b>	Evaluation Society of Kenya
<b>FBO</b>	Faith Based Organization
<b>KIM:</b>	Kenya Institute of Management
<b>M&amp;E:</b>	Monitoring and Evaluation
<b>MEASURE:</b>	Monitoring and Evaluation to ASsess and Use Results
<b>NEMA</b>	National environment Management Authority
<b>NES:</b>	National Evaluation Society
<b>PE:</b>	Program Evaluation
<b>PRSPs:</b>	Poverty Reduction Strategy Papers
<b>SALM</b>	Sustainable Agriculture Land Management
<b>SDG</b>	Sustainable Development Goal
<b>ToC</b>	Theory of Change

## ABSTRACT

The purpose of this study was to examine the influence of monitoring and evaluation system on the sustainability of agricultural projects with leadership competencies as a moderating variable. The study objectives were: To establish the extent to which partnerships for planning M&E, data utilization for M&E, human capacity for M&E, and routine programme monitoring influence sustainability of agricultural projects. The study objectives also included establishing how combined monitoring and evaluation system and to assess how leadership competencies influence sustainability of agricultural projects, and to determine the moderating influence of leadership competencies on the relationship between monitoring and evaluation system and sustainability of agricultural projects. Study null hypotheses was: there is no significant relationship between: partnerships for planning M&E, data utilization for M&E, human capacity for M&E, routine programme monitoring, combined M&E system, leadership competencies and sustainability of agricultural projects. The study hypothesis also included: there is no significant moderating influence of leadership competencies on relationship between M&E system and sustainability of agricultural projects. The study used descriptive survey, cross-sectional and correlational research designs with a target population of 243 participants made up of 216 subordinate staff and 27 project managers. The study had a sample size of 140 participants that comprised of project officers, M&E officers, project volunteers and data entry officers and a sample size of 8 for project managers that were used for qualitative data. The study used interview schedule to collect data from project officers, M&E officers, project volunteers and data entry officers and interview guide to collect data from project managers. Data collected was analyzed using SPSS version 20.0. Analysis included the following tests: means, standard deviations, and frequencies. Inferential statistics was conducted by the use of correlations, linear regression, multiple regressions and hierarchical regression. The results were presented in APA tables. Partnerships for planning M&E was found to positively correlate highly with sustainability of agricultural projects  $H_0$ : was rejected with  $r = 0.743$ ,  $F(1,135) = 3.725$ , at  $p = 0.036 < 0.05$  and R-squared of 55.3%. Data utilization for M&E did not significantly influence sustainability of agricultural projects therefore  $H_0$  was not rejected:  $r = 0.198$ ,  $F(1,135) = 0.523$ , at  $p = 0.120 > 0.05$  and R-squared of 3.9%. Human capacity for M&E also not significantly influence sustainability of agricultural projects therefore  $H_0$  was not rejected:  $r = 0.115$ ,  $F(1,135) = 1.822$ , at  $p = 0.179 > 0.05$  and R-squared of 1.3%. Routine programme monitoring also did not significantly influence sustainability of agricultural projects therefore  $H_0$  was not rejected:  $r = 0.059$ ,  $F(1,135) = 0.476$ , at  $p = 0.491 > 0.05$  and R-squared of 0.4%. The joint influence of monitoring and evaluation system had a higher predictability power with R-squared of 57.6% and correlation of 0.759. Leadership competencies increased the influence of monitoring and evaluation system on sustainability of agricultural projects with R-squared change=7.6% ( $P=0.001$ ), R-squared=65.2% ( $P=0.001$ ), and  $r = 0.808$ , at  $p = 0.001 < 0.05$ . Based on the findings, It was concluded that partnerships for planning M&E was important and needed to be considered when designing agricultural projects and expecting sustainability. It is recommended that more emphasis should be put across for effective monitoring and evaluation system utilization. It was recommended that sustainability of agricultural projects in Non-governmental organizations should be synchronized not only through an integrated M&E system but with competent leadership.



## **CHAPTER ONE**

### **INTRODUCTION**

#### **1.1. Background to the Study**

Non-governmental organizations, (NGOs) are viewed by many as more efficient and cost effective service providers than governments, giving better value for money, especially in reaching the poor (Edwards and Hulme 1998). This has led official agencies to channel increasing amounts of money to them and through them in order to bring about development because they are less bureaucratic, hence yielding more positive results than the public sector. In the past two decades, the position of (NGOs) around the world has shifted from that of minor and little-discussed players focusing on the welfare of the poor to major, central actors on the world stage of development, receiving, in some cases, more donor funds than their state counterparts (Chege, 1999). This shift also arose in part from donor frustration with opaque and inefficient state-based systems for development, which spawned an interest in accountability and governance mechanisms involving non-state actors, which includes NGOs. NGOs have been seen as more efficient, effective, flexible, and innovative than governments, to be other-oriented and ideologically committed to democracy and participatory pro poor development, and to be more accountable and transparent than the government (Bratton, 1989; Fowler, 1991; Owiti, Aluoka, and Oloo, 2004). The number of NGOs throughout the world and mostly in developing world has risen steeply. Kenya, for example, has witnessed a substantial increase in the number NGOs in the country: in 1974 there were only 125 NGOs in Kenya; by 2006, over 4,200 had been registered with the government (Republic of Kenya, 2006).

The suggestion that agricultural and rural development strategies would benefit from increased collaboration between government and NGOs has become almost commonplace in recent policy discussions Carroll, (1992). NGO involvement, it is claimed, ought to increase the impact of programmes in grassroots development and poverty alleviation, and contribute to the democratization of the development process. At the same time, multilateral agencies have begun to call for more NGO involvement in programmes that have traditionally been implemented through government World Bank, 1991. Recent

reforms in the agricultural research and extension services in Bolivia, Chile, and Colombia have all delineated roles for private sector agents, especially NGOs Bebbington, (1991). The areas in which NGOs have made substantial contributions include: participatory agricultural development, methodological innovation, institutional organisation, and implementation. None the less, there is much diversity among NGOs in their respective strengths and their general overall effectiveness: some are better innovators; some are better popular mobilisers; some are better implemented.

The US Congress (1990) defined sustainable agriculture as an integrated system of animal and plant production practices that satisfy human food and fiber needs, enhance environmental quality by making the most efficient use of non-renewable resources, sustain the economic viability of farm operations, and enhance the quality of life. Sustainability in agriculture is a complex and dynamic concept, including a wide range of environmental, social, economic, and resource use issues that changes with the time, location, society, and priorities. It is intended to minimize external inputs added to maximize agriculture output or production and maintain farm resources, achieving socioeconomic, environmental, and economic welfare, along with quality of life, without harming the environment, public health, communities, or animal welfare (Kornegay et al. 2010; Pretty 2008).

The economies of most countries in sub-Saharan Africa, including Tanzania, heavily depend on agriculture that is dominated by smallholder farmers that are partially integrated into markets. The fate of the agricultural sector directly affects economic development, food security and poverty alleviation. However, the performance of agriculture in this region has not lived up to expectations, characterized by decades of stagnation and volatility in production and marketed volume. While the sector employs about 65% of labor force, it contributes only about 25–30% of the total gross domestic product Pretty, C. Toulmin, S. Wasiams, (2011). Several biophysical and socioeconomic factors have been identified as key constraints limiting productivity growth in agriculture in sub-Saharan Africa Pender, F. Place, S. Ehui, (2006). Soil fertility depletion is considered as the main biophysical limiting factor for increasing per capita food production for most smallholder

farmers in the region. The average annual nutrient balance for the region for the period 1983–2000 was estimated to be minus 22–26 kg of nitrogen (N), 6–7 kg of phosphorus (P), and 18–23 kg of potassium (K) per hectare (Smaling, S.M. Nadwa, B.H. Janssen, (1997). On the other hand, the average intensity of fertilizer use in sub-Saharan Africa is only 8 kg/ha of cultivated land, much lower than in other developing countries.

In the United Kingdom, the government created a system of performance targets, contained in Public Sector Agreements between the Treasury and each of the 18 main departments (Mackay, 2007). The Public Sector Agreements had aspect of monitoring and evaluation system where state department's overall goal, the priority objectives, and key performance targets had to be reported. In Germany, M&E system is a tool used by central government to monitor all the activities within the departments to fight corruptions (David, 2003). This was unlike Australia where the government created a whole-of-government evaluation system, managed by the Department of Finance; all ministries were required to evaluate each of their programmes every three to five years (Buse and Vigneri, 2008). In developing countries, experience of M&E system has been slow and varied (Kremer, 2003). In India, South Africa, Nigeria, and Kenya, the adoption of M&E is taking root as public and private sectors have started embracing the practice (World Bank, 2004). This is unlike other African countries such as Tanzania, Ethiopia, Sudan where only donor funded projects uses monitoring and evaluation system (Snyder and Sheehan, 1996; Lacey, 2005). As a result, planners are left to guess whether to build upon existing work or introduce a shift in policies and programmes, targeting specific indicators to provide information that programme management and stakeholders may use for various purposes, including reviewing performance (Vos, 2006), learning from past experiences, improving service quality, planning and resource allocation, as well as demonstrating results as part of accountability to stakeholders (World Bank, 2004; UNESCO, 2007). The information generated by M&E systems is sector-specific.

Bungoma County covers an area of 3,032 Km<sup>2</sup> in the Lake Victoria Basin in western Kenya. In 2013 it had a population of approximately 1,553,000 people, which is projected to grow to over 1,751,000 people by 2017. The County has about 2,880 Km<sup>2</sup> or arable

land, Climate change has already begun to impact agriculture and ecosystems in the Bungoma County, with erratic and unpredictable weather patterns and declines in indigenous flora and fauna already observed, The Republic of Kenya, (2013a). Multiple severe impacts are also likely to result from climate change in the future, including higher temperatures, water scarcity, changes in rainfall patterns, environmental stresses like the El Nino phenomenon, increase in extreme weather events, like storms, droughts and floods and poorly designed NGO projects meant to improve agriculture production, The County Government of Bungoma (2013)

Agriculture is highly sensitive to climate change and variability, and rain-fed agriculture systems in particular, are especially susceptible to unpredictable weather. High rates of land degradation only increase the sensitivity of farmers to climate variability and change. Furthermore, unsustainable agriculture practices contribute significantly to climate change, through the emission of gases (carbon dioxide, methane and nitrous oxide) that contribute to global warming, The Government of Kenya. 2010.

Bungoma County's development priorities, as outlined in its County Integrated Development Plan (CIDP) for 2013-2017, include, among other objectives, supporting investments to ensure food security, promoting local economic development and job creation, supporting environmental protection and conservation, and increasing agriculture value addition and agri-business. The CIDP also highlights the need to promote the adoption of sustainable farming practices, sustainable land use technologies, and a low carbon economic growth (The County Government of Bungoma 2013).

Furthermore, these goals are aligned with many national policies and strategies, including Kenya's Vision 2030, the National Farm Forestry Program target of having 10% of each farmer's total acreage reserved for agro-forestry, and the National Climate Change Action Plan, as well as regional programs, such as the Comprehensive Africa Agriculture Development Program (CAADP) (The Republic of Kenya 2013a; The Republic of Kenya 2013b; The County Government of Bungoma 2013). However, currently there is no policy or strategy at the County level that specifically addresses the adoption of sustainable

agriculture and land management practices, and such a policy or strategy is needed for the County to achieve these interlinked goals in the face of climate change, (Vi Agroforestry 2014).

Nyonje, Ndunge, Mulwa (2012) observe that M&E systems as an integral system of reflection and communication, supporting project implementation that should be planned for and managed throughout the life of a project. In addition, Arild (2001) indicates M&E system as a complete set of interlinked activities that must be undertaken in a coordinated way to plan for M&E, gather, and analyses information, report and to support decision making and the implementation of improvements. Whatever the definition, the overriding message has been homogenous. For instance, most consultant and academicians have advised and developed a more practical way of monitoring and evaluating, M&E systems as a more practical term to be used by national and organizational planning and management (Mackay, 2007). However, lack of emphasis has sidelined M&E systems function, restricting it to periodic reporting in many forms and shapes with fancy presentations of figures and graphics and without thorough analysis and future guidelines (Khan, 2003).

### **1.1.1 Sustainability of Agricultural Projects Funded by Non-Governmental Organizations**

In her presidential address to the American Agricultural Economics Association, Batie (2000) elaborates on the challenges for agricultural economists posed by the concept of sustainable development (WCED, 2004). Pezzey (2004) provides a systematic overview of general interpretations of sustainable development, whereas definitions of sustainable agriculture are gathered in FAO (2009) and Vasavada (2011). Sustainability-oriented agriculture view is concerned with linkages between environmental and socioeconomic factors.

Key issues in sustainable agriculture are (a) environmental effects of chemical input use; (b) waste generation (for instance animal waste); (c) renewable resource use (particularly

topsoil and water); and the danger to human health, for instance if chemical residues are present in food Vasavada, (2011). Many studies have elaborated on the operationalization of the sustainability concept in agriculture. The FAO (2009) takes a broad perspective, linking sustainability to, among other things, meeting basic nutritional requirements in the short and long term, providing durable employment and income and decent working conditions, maintaining (at least) the productive capacity of the natural resource base and reducing the vulnerability of the agricultural sector to adverse natural and socioeconomic factors. In the framework of a study in Mali, a more practical and ecologically oriented approach was proposed by van Duivenbooden et al. (2010): Firstly, for arable crop systems: an equilibrium situation for the nutrient balances. Secondly, for livestock systems: a stable herd of each animal species based on sustainable forage production. In addition, regarding the condition of chemical equilibrium, only a fraction of the total pasture biomass production should be used.

Thirdly, for fishery: a maximum quota of fish that can be caught. Vasavada's (2011) criterion for land use is that the rate of soil depletion should be less than the rate of soil generation. Batie (2000) argues that the technique of safe minimum standards (SMS) deserves more attention in agriculture, whereas Soeteman (2007) elaborates on concepts such as carrying capacity, sustainable yield, diversity, resilience and vulnerability. Economists make a distinction between (a) strong sustainability, which requires that the total stock of environmental resources does not decline; and (b) weak sustainability, which allows environmental degradation provided compensation in the form of an increase in man-made capital is provided (Foy and Daly, 2007).

### **1.1.2. Monitoring and Evaluation System**

M&E systems have various components including; organizational structure with M&E, human resource capacity for monitoring and evaluation, partnerships for planning M&E, monitoring and evaluation plan, costed monitoring and evaluation work plan, monitoring and evaluation advocacy communication and culture, routine program monitoring, survey and surveillance, monitoring and evaluation database, supervision and data auditing, evaluation and research, and data dissemination and use Kusek and Rist, (2004). This

study focused on four of the components only: Partnerships for planning M&Es, data dissemination and use, human capacity for monitoring and evaluation, and routine monitoring. The study confined itself to these variables because they are the ones applied by NGOs funding the agricultural projects in Bungoma County.

#### **1.1.2.1: Partnerships for Planning Monitoring and Evaluation**

Participatory monitoring and evaluation differs significantly from conventional M&E in that the community, beneficiaries, and people involved in designing and implementing the project also are involved in monitoring and evaluation throughout the project's duration. In consultation and association with benefactors, the public, recipients, and implementers decide what was to be monitored and how the monitoring was to be steered. Together, they examine the data gathered through monitoring and evaluate whether the project is on track in attaining its objectives. Based on this evidence, they decide together whether the project should continue in the same direction or if it needs to be modified (Shah, 2006). Participatory monitoring enables project participants to generate, analyze, and use information for their day-to-day decision making as well as for long-term planning. In participatory evaluation, just as in participatory monitoring, the recipient community and CBOs or FBOs together decide how to conduct the evaluation – its timing, scope, and methodology.

The group also decides what they would like to find out through the evaluation. They choose the matters and indicators that was to be looked into by the evaluation and they help articulate the questions to be asked. They take part in collecting and analyzing data and presenting the results. If a project follows a participatory approach from the beginning, it is easy to conduct a participatory evaluation at the end Shah, (2006). While conventional monitoring and evaluation focuses on the measurement of results – service delivery, information dissemination and behavior change, participatory monitoring and evaluation focuses on the results and process. The main characteristics of this process are inclusion, collaboration, collective action, and mutual respect. Participatory M&E encourages dialogue at the grassroots level and moves the community from the position of passive

beneficiaries to active participants with the opportunity to influence the project activities based on their needs and their analysis (Shah, 2006).

#### **1.1.2.2 Data utilization for Monitoring and Evaluation**

For the most part, the extent to which M&E findings are being used in all these M&E systems remains unclear. A study on the national M&E systems of Chile, Colombia, Costa Rica and Uruguay conducted between 2001 and 2002 Cunill, (2003), found that most of the systems' stakeholders were making very limited use of the information. In 2004, a case study of Argentina's three M&E systems reported similar findings (Zaltsman, 2004). However, since these studies were undertaken, there have been reports that, in some of these countries, M&E findings are beginning to influence decision-making.

M&E system should not only produce large volumes of performance data, or a large number of high-quality evaluations but also to produce information that is usable in a number of ways. This is to say that M&E system should not be supply-driven but demand-driven if we have to see its usefulness (Woodhill, 2005). Utilization of M&E results has been said to be a major determinant of project sustainability resulting from good planning, precise implementation and informed decision making (Mackay, 2007). The purposes of M&E information has been cited to be; feeding back into programs and projects; improving policy analysis and policy development; aiding in budget decision making and project planning; helping in managerial activities; enhancing transparency and accountability; project sustainability and many others (Mackay, 2007). These cannot be realized if M&E information utilization is not addressed to stress the importance of M&E results utilization.

#### **1.1.2.3. Human Capacity for Monitoring and Evaluation**

Focusing on human capacity for M&E will improve the quality of the M&E system. In an ideal scenario, the M&E system would be designed in advance, skill requirements for it established, and human capacity development (HCD) planned and undertaken before the M&E system was implemented. In *real life*, we know that it does not always happen in this way; M&E skills are often developed while the M&E system is being implemented. The increased interest of development partners in M&E has made more funding available for



M&E capacity development. “Recognizing that capacity building is central to achieving economic growth, reducing poverty and equalizing opportunity, foundations and bilateral and multilateral funding agencies have taken a new-found interest in this fundamental area. The timing seems right. Not only is the information revolution upon us, trends towards democratization, government decentralization and economic ( Görgens & Kusek, 2010)

Liberalization have profoundly reshaped how universities, NGOs and other public-interest organizations do their work, thus, presenting them with new challenges and opportunities. National governments, for example, play a much smaller role in developing policy and delivering services than they once did. With less public funding, public-interest organizations must have a strong concept of a relevant knowledge-based economy, and they must have a greater market orientation — not necessarily as commercial entities per se, but rather as organizations attuned to issues once considered the purview of business: management, finance, innovation, customer service, marketing, and the capacity to help clientele themselves acquire and communicate knowledge” (Moock,undated) as stated in ( Görgens & Kusek, 2010)

#### **1.1.2.4. Routine Programme Monitoring**

A substantial amount of annual budget (two to fifteen percent) of a development program spent on monitoring activities. Such activities include writing proposals, designing programs, and developing frameworks, compiling action plans, collecting data, writing reports and maintaining information systems by carrying out monitoring studies. Monitoring started a long time ago in Western Australia. Prior to 1950’s teachers professional development was relatively unknown. By the 1970’s teachers professional development started expanding in, 1980 it was a period of rationalization. It was recognized by this time although achieving change in practice, the classroom level was the hallmark of effective professional development.

Since then school improvement has been sought through introduction of teacher standards and registration, competency frame works and efforts to transform schools from industrial organization to learning organizations (Fullan, 2001). Monitoring is an activity that

involves continuous and systematic checking and observing a program or a project. Evaluation on the other hand is judging, appraising or determining the worth, the value and quality of a program. It involves comparing the present situation with the past in order to find out the extent to which the laid down objectives have been achieved (RoK, 2000).

The importance of Monitoring in global efforts toward achieving environmental, economic and social development cannot be understated (Muller, 2007). Monitoring is the continuous assessment of project implementation about design schedules on inputs, infrastructure, and services by project beneficiaries. Simon further observes that project monitoring is periodic of a project's relevance, performance, efficiency, and impact both expected and unexpected about stated objectives. In 1960's the approach of earned value management development whose aim is to monitor project progress based on scope, time, cost and quality. According to most literature monitoring provide information to make decisions regarding project activities require diverse types of monitoring (Shapiro, 2011).

### **1.1.3 Leadership Competencies**

There is increasing demands on management and leadership competencies at all organizational levels Gregersen, 2010; Harvey and Buckley, (2011). Increasing understanding of different aspects of governance, needs of various factors and their changes was help organizations to meet the new challenges brought by globalization, whether their primary operation environment is domestic, international or global. The development of leadership competencies should be based on the global business strategy which determines what kind of presence is desirable, how many and what types of jobs, projects, task forces, and other types of interactions exist McCall and Hollenbeck, (2012).

Competency development process should start from an analysis of the dynamics of the environment and the core competencies, continuing to identifying the profiles of resources and ending with identification of necessary competencies for specific jobs/functions Suutari, (2010). A competence in general can be understood as the ability of an individual to activate, use and connect the acquired knowledge in the complex, diverse and unpredictable situations. Competencies encompass knowledge, expertise, skills, personal

and behavioral characteristics, beliefs, motives, values (Zakaria and Taiwo, 2013). Leaders have to ensure that changes in an organization are accepted and implemented in a way resulting not only in better job performance but also in general understanding and satisfaction of all. Leadership competencies are skills and behaviors that contribute to superior performance of leaders. By using a competency-based approach to leadership competencies, organizations can better identify and develop their next generation of leaders Koman and Wolff, (2008). Leadership competencies are observed when a person demonstrates the competencies that constitute self-awareness, self-management, social awareness and social skills at appropriate times and ways in sufficient frequency to be effective in the situation. Most frequently in existing competency, frameworks which indicates that emotional intelligence represents a major component of global leadership competency. Much in line with these are personal attributes which underpin, and determinate how and when, knowledge and skills will be used (Zakaria and Taiwo, 2013).

Understanding various attributes of leadership competencies and their interaction is essential for organizations performance and in order for these organizations to work effectively in today's global business environment. The level of this understanding is related to possession of international competencies within an organization Gupta and Govindarajan,(2011). Although the need to develop leaders with adequate competencies has become obvious in recent years, there is still a significant gap between the international human resource requirements of a competent leaders and their organization's objectives realization (Adler and Bartholomew, 2012; Engle et al., 2013, Morrison et al., 2013). In Kenya effective leaders build a sense of community within the workplace, that they not only increase employee retention figures, but they also improve productivity because employees are more wising to follow effective leaders than non - effective individuals. They do not coerce, cajole, threaten, plead, or bargain with their followers. They inspire them to do what needs to be done Morrison, (2013).

State corporations play a major role in most economies through the provision of public services. In Kenya, they play a significant role in enhancing equitable distribution of development gains and solve regional imbalance; indigenize the economy; provide secure

employment; help government to implement and learn from implementation of industrial policy; and, accelerate economic growth through provision of important services such as electricity, water, sugar, seeds and research for agriculture, and marketing to mention but a few (Mwaura, 2007).

## **1.2. Statement of the Problem**

Agricultural projects are meant to empower communities through food provision which will eventually reduce poverty levels. If agricultural projects fails to be sustained after project completion, then community livelihoods are at stake. The efforts of NGOs to empower rural communities through poverty alleviation projects which include agricultural projects are to a greater extent proving to be unfruitful. The projects are often left uncompleted and thus cannot continue once they are left in the hands of the community, and thus people's livelihoods are showing little or no improvement despite the efforts put in place, Tanga and Mundau (2014). There seems to be a missing link between the concept of "community empowerment" and the formulation and implementation of these projects, since the projects would sometimes show signs of lacking a sustainable nature, which thereby incapacitate the communities in their fight against poverty. This has led to poverty, starvation, and the continuation of high unemployment levels, (Tanga and Mundau, 2014).

This study reflects the first and the second sustainable development goals (SDG) which is end of extreme poverty, including absolute income poverty (\$1.25 or less per day) and end hunger, achieve food security and improved nutrition, and promoting sustainable agriculture. Ending extreme poverty, including absolute income poverty (\$1.25 or less per day) is measured by among others the percentage of population living below a country's poverty line while ending hunger, achieving food security and improved nutrition, and promoting sustainable agriculture is measured by among others, crop yield gap (actual yield as % of attainable yield). Across all societies, people's lives orbit around planning for and practicing diverse livelihoods. Demand for food in the world is growing. Population growth is expected to increase in the coming decades, the global food production needs to increase by at least 50% by 2050 to feed the growing population Erokhin, V. (2017). According to the Food and Agriculture Organization of the United Nations FAO (2017),

by 2030, the global production of grain will have reached 2.1 billion tons, while the world demand for grain have increased up to 2.7 billion tons this is a clear warning that global policy makers in food security should heed and embark on supporting projects that directly relate to agriculture.

According to the Kenya economic survey report 2014, Bungoma County is one of the counties in top five contributors to national poverty index in the country with 3.79 per cent which means that Bungoma County has a high population of poor people contributing immensely to the national poverty index. According to the same report, Bungoma is one of the counties that are below threshold in terms of poverty line at 47.3%, this is in comparison to a national poverty line figure of 45.2% of the population living below the poverty line. The report indicated that poverty incidences per county ranged from a low of 21.8% to 87.5%. This implies that two in every 10 people in low incident areas live below poverty line compared to nine in every 10 people in high incident areas. According to the 2009 national census, Bungoma has a population of 1,375,063 million people and the county has a number of NGOs with visions and missions of attaining economic freedom to the population, however, according to the Kenya economic survey of 2018, little impact can be felt on the ground despites millions of dollars spent.

Majority of agricultural projects have generally been unsuccessful to bring sustainable benefits to the target groups, though numerous projects highlight fundamentals of sustainability in their proposal stage, the actual implementation still seems to lack emphasis on sustainability (Oino, Towett, Kirui, & Luvega, 2015). NGOs sought to ensure the sustainability of the food supply and increase the well-being of people, especially those with a low income. However, under a fluctuating influence of various internal and external factors, such support often backfires on the food security of a country. Termination or end of projects seems to be an automatic termination of projects benefits to the community, there is no trickle down or sustainability of the project benefits after a project is completed, Erokhin, (2017). The importance of utilization of monitoring and evaluation system in the implementation of NGO projects has been recognized (Wasiams, 2007). Therefore sustainability NGOs agricultural projects could be attributed to utilization of monitoring

and evaluation system, specifically partnerships for planning M&E, data utilization, human capacity for M&E and routine monitoring and evaluation for instance. Firstly, participatory planning for M&E encourages dialogue at the grassroots level and moves the community from the position of passive beneficiaries to active participants with the opportunity to influence the project activities based on their needs and their analysis Shah , Mahlalela , Kambou , and Adams,(2006). Secondly, there is necessity for data sharing within the circle of stakeholders in order to attain the objectives Giffels, (2010). Using findings to improve performance is the main purpose of building a results-based M&E system. The main point of the M&E system is not simply to generate continuous results-based information, but to get that information to the appropriate users in a timely fashion so that the performance feedback can be used to better manage organizations and governments Kusek and Rist, (2001), thirdly, the importance of qualified M&E staff with necessary skills both theory and hands-on skill should not be underestimated Kusek, (2001).

According to Kusek and Rist, 2004 , monitoring is important because, after selecting targets and completing the performance-based framework, monitoring enables the use of information to observe the results, it makes it possible to put together a system to get the necessary data to better inform the decision making process. The resulting data provides evidence on performance and flag any changes that may be needed for a given project, program, or policy. Monitoring enables the review of the need to manage inputs as well as outputs and outcomes. Managers use a variety of organizational tools to manage inputs, including budgets, staffing plans, and activity plans. The importance of routine monitoring in global efforts toward achieving environmental, economic and social development cannot be understated either (Muller, 2007). On leadership, there is increasing demands on management and leadership competencies at all organizational levels (Gregersen, 2010; Harvey & Buckley, 2011). Increasing understanding of different aspects of governance, needs of various factors and their changes help organizations to meet the new challenges brought by globalization, whether their primary operation environment is domestic, international or global (Muller, 2007). It is for this reason that this research investigated how monitoring and evaluation system influences sustainability of agricultural projects funded by NGOs and leadership competencies as a moderator variable.

### **1.3. Purpose of the Study**

The purpose of this study is to investigate the influence of monitoring and evaluation system on sustainability of agricultural projects funded by non-governmental organizations in Bungoma County, Kenya. The study sought to establish how leadership competencies moderate the relationship between monitoring and evaluation system and sustainability of agricultural projects.

### **1.4. Objectives of the Study**

The study is guided by the following research objectives:

1. To establish the extent to which partnerships for planning M&E influence sustainability of agricultural projects funded by Non-governmental organizations in Bungoma County, Kenya
2. To determine the extent to which data utilization for M&E influence sustainability of agricultural projects funded by Non-governmental organizations in Bungoma County, Kenya
3. To assess how human capacity for M&E influence sustainability of agricultural projects funded by Non-governmental organizations in Bungoma County, Kenya
4. To examine the extent to which routine programme monitoring influence sustainability of agricultural projects funded by Non-governmental organizations in Bungoma County, Kenya
5. To establish how combined monitoring and evaluation system influence sustainability of agricultural projects funded by Non-governmental organizations in Bungoma County, Kenya
6. To assess how leadership competencies influence sustainability of agricultural projects funded by Non-governmental organizations in Bungoma County, Kenya.
7. To determine the moderating influence of leadership competencies on the relationship between monitoring and evaluation system and sustainability of agricultural projects funded by Non-governmental organizations in Bungoma County, Kenya.

### **1.5. Research Questions**

The study is guided by the following research questions:

1. To what extent does partnerships for planning M&E influence sustainability of agricultural projects funded by Non-governmental organizations in Bungoma County, Kenya?
2. To what extent does data utilization for M&E influence sustainability of agricultural projects funded by Non-governmental organizations in Bungoma County, Kenya?
3. How does human capacity for M&E influence sustainability of agricultural projects funded by Non-governmental organizations in Bungoma County, Kenya?
4. How does routine programme monitoring influence sustainability of agricultural projects funded by Non-governmental organizations in Bungoma County, Kenya?
5. How does combined monitoring and evaluation system influence sustainability of agricultural projects funded by Non-governmental organizations in Bungoma County, Kenya?
6. How does leadership competencies influence sustainability of agricultural projects funded by Non-governmental organizations in Bungoma County, Kenya?
7. What is the moderating influence of leadership competencies on the relationship between monitoring and evaluation system and sustainability of agricultural projects funded by Non-governmental organizations in Bungoma County, Kenya?



## **1.6. Research Hypotheses**

The study sought to test the following hypothesis:

- 1. H<sub>1</sub>:** There is significant relationship between partnerships for planning M&E and sustainability of agricultural projects funded by Non-governmental organizations in Bungoma County, Kenya.
- 2. H<sub>1</sub>:** There is significant relationship between data utilization for M&E and sustainability of agricultural projects funded by Non-governmental organizations in Bungoma County, Kenya.
- 3. H<sub>1</sub>:** There is significant relationship between human capacity for M&E and sustainability of agricultural projects funded by Non-governmental organizations in Bungoma County, Kenya.
- 4. H<sub>1</sub>:** There is significant relationship between routine programme monitoring and sustainability of agricultural projects funded by Non-governmental organizations in Bungoma County, Kenya.
- 5. H<sub>1</sub>:** There is significant relationship between the combined M&E system and sustainability of agricultural projects funded by Non-governmental organizations in Bungoma County, Kenya.
- 6. H<sub>1</sub>:** There is significant relationship between leadership competencies and sustainability of agricultural projects funded by Non-governmental organizations in Bungoma County, Kenya.
- 7. H<sub>1</sub>:** There is significant moderating influence of leadership competencies on relationship between M&E system and sustainability of agricultural projects funded by Non-governmental organizations in Bungoma County, Kenya.

## **1.7. Significance of the Study**

This study may be useful to project stakeholders in the organizations including project executives who would seek justification for the spending they do on M&E system installation. The policy makers and management personnel of project organizations may benefit by understanding the importance of M&E system and also get to know how this system which in this case includes: partnerships for planning M&E, data utilization for M&E, human capacity for M&E, and routine monitoring can influence the sustainability

of agricultural projects. The study may be a basis on which policy makers will likely formulate and establish M&E standards to guide M&E practice. This may improve the quality in M&E process and the resulting findings meant to improve the project implementation. Also, monitoring and evaluation as a discipline is a novel, for instance, there is no known literature on influence of M&E system on the sustainability of agricultural projects in NGOs in Bungoma County. Moreover, there is no known literature on how leadership competencies moderates the relationship between M&E system and sustainability of agricultural projects funded by NGOs in Bungoma county, Kenya, for this reason, this study may form an important empirical literature for future scholars of monitoring and evaluation not only in Kenya but internationally.

### **1.8 Delimitation of the Study**

M&E systems have twelve components which includes; organizational structure with M&E, human resource capacity for M&E, partnerships for planning M&E, costed M&E work plan, M&E advocacy, communications and culture, routine programme monitoring, monitoring and evaluation system support and supervision, communication, advocacy and culture, surveys and surveillance, M&E database, supervision and data auditing, evaluations, and dissemination and data use (Kusek and Rist, 2004). However the scope of this study covered four components only, including; partnerships for planning M&E, M&E data utilization, human capacity for M&E and routine monitoring. This research confined itself in these four components only because they are more established in NGOs in Bungoma County. Further, the study delimited itself to the sustainability of agricultural projects which are projects meant to improve food security in the county. The scope was also delimited to eight Non-profit organization. These NGOs were selected because they are located in Bungoma County and all of which implement agricultural projects. The researcher was also delimited to NGO staff including the project officers, M&E officers, project volunteers, data officers and project managers.

### **1.9. Limitation of the Study**

Financial constraint was anticipated since the research was not funded, thus, availability resources was limiting factor. Financial constraints was mitigated by early savings. The

researcher also planned to apply for national research fund meant for PhD students though it has not yet been advertised for the year 2019/2020 therefore the researcher is still looking forward for it to apply for reimbursement. Scheduling appointments with project managers to present and collect interview guides was difficult because of their busy nature, however, research assistants were trained and used to assist in data collection at all levels. Research assistant ensured that data is collected as fast as possible without compromising the quality of the study.

#### **1.10. Assumptions of the Study**

The study's assumptions was be the following: That the respondents, which includes project officers, M&E officers, project volunteers, data entry and project managers were available, that they gave honest opinion when responding to questions. The study assumed that everyone who has implemented agricultural projects in NGOs has the information on the sustainability of agricultural projects. Finally, the study assumed that everyone who has implemented agricultural projects in NGOs has information on monitoring and evaluation system.

#### **1.11. Definition of Significant Terms used in the Study**

**Monitoring and Evaluation System:** M&E system is a set of interrelated components that provides essential data in agricultural projects for analysis to determine whether or not project objectives are being achieved. In this study, it means partnerships for planning M&E, data utilization for M&E, human capacity for M&E and routine monitoring.

**Partnerships for Planning M&E:** This is the collaboration between different stakeholders involved in planning and implementation of agricultural projects. In this study, partnerships for planning M&E meant; Technical assistance from M&E partners, use of partnerships to fund M&E activities, organizational culture on partnerships, and partnerships strategies

**Data utilization for M&E:** It is sharing and utilization of evaluation results for agricultural projects for decision making which includes changes, and learning. In this

research, data utilization meant: Use of data for planning, Use of data for decision making, data sharing with stakeholders

**Human capacity for M&E:** Involves the knowledge and expertise of project staff that are involved in the implementation of the projects. It means significance of M&E qualifications in maintaining M&E system, significance of M&E, experience in maintaining M&E system, and effectiveness of M&E training programs in retaining skills

**Routine programme Monitoring:** This refers to regular tracking of the progress of a project or program. In this study, routine program monitoring meant; Monitoring used to track project progress, impact monitoring, outcome monitoring, output monitoring and monitoring strategies

**Leadership competencies:** Leadership competencies are skills and behaviors that contribute to superior performance of leaders. In this study leadership competencies meant: Ability to plan, ability to organize, ability to motivate, ability to control, ability inspire, builds confidence, ability to recognize their subordinate staff, appreciate their subordinate staff, encourages subordinate staff to be creative and delegates work effectively

**Sustainability of agricultural projects funded by NGO:** This means continuity of project after donor pull-out, sustaining project outcomes, sustaining beneficiary acceptance of the project and sustaining beneficiary growth. Agricultural projects includes all projects that ensure food security and economic empowerment to households. Examples of these projects include: Agriculture both crop and animal, Nutrition, and Income generating activities. The term ‘funded by NGOs’ is loosely used to be mean ‘delivered through NGOs’ therefore, sustainability of agricultural projects funded by NGO is a single variable. In this study, sustainability of agricultural projects funded by NGO meant the following: project financial viability after donor pull-out, sustainment of staff capability after donor pull-out, sustaining community acceptance of project after donor pull out, availability of project sustainability strategies, sustainment of project results after donor pull-out, beneficiary capacity development after donor pull-out, and farming system surviving in long term in a changing economic context

**First analysis model:** Regression analysis of single explanatory variable (partnerships for planning M&E, data utilization for M&E, human capacity for M&E, routine program monitoring and leadership competencies), and an outcome variable (sustainability of agricultural projects).

**Second analysis model:** Analysis of combined monitoring and evaluation system and an outcome variable

**Third analysis model:** Analysis of leadership competencies moderating the influence of monitoring and evaluation system on sustainability of agricultural projects.

**Influence:** this will be measured through correlation index and R-squared

### **1.12 Organization of the Study**

The study is organized into five chapters. Chapter one presents the background of study, statement of the problem, purpose of the study, objectives, research question and hypotheses, significance of the study, delimitations and limitations, assumptions of the study, definition of significant terms as used in the study and organization of the study. Chapter two provides a review of literature on the monitoring and evaluation system and sustainability of agricultural projects which includes the following: partnerships for planning M&E and sustainability of agricultural projects, data utilization and sustainability of agricultural projects, human capacity for M&E and sustainability of agricultural projects, and routine program monitoring and sustainability of agricultural projects. The chapter also has discussions on leadership competencies and sustainability of agricultural projects. The chapter also reviews theoretical frameworks. The third chapter consists of the methodology that was applied to source and process data, including sections on research paradigm, research design, target population, sample size, sampling procedures, research instruments, piloting of research instruments, validity and reliability instruments, data collection procedures, analysis techniques, ethical considerations as well as operationalization of the variables. The fourth chapter presented data analysis, presentations, interpretations and discussions. Chapter five provides a summary of the findings, conclusions, as well as recommendations.

## **CHAPTER TWO**

### **LITERATURE REVIEW**

#### **2.1 Introduction**

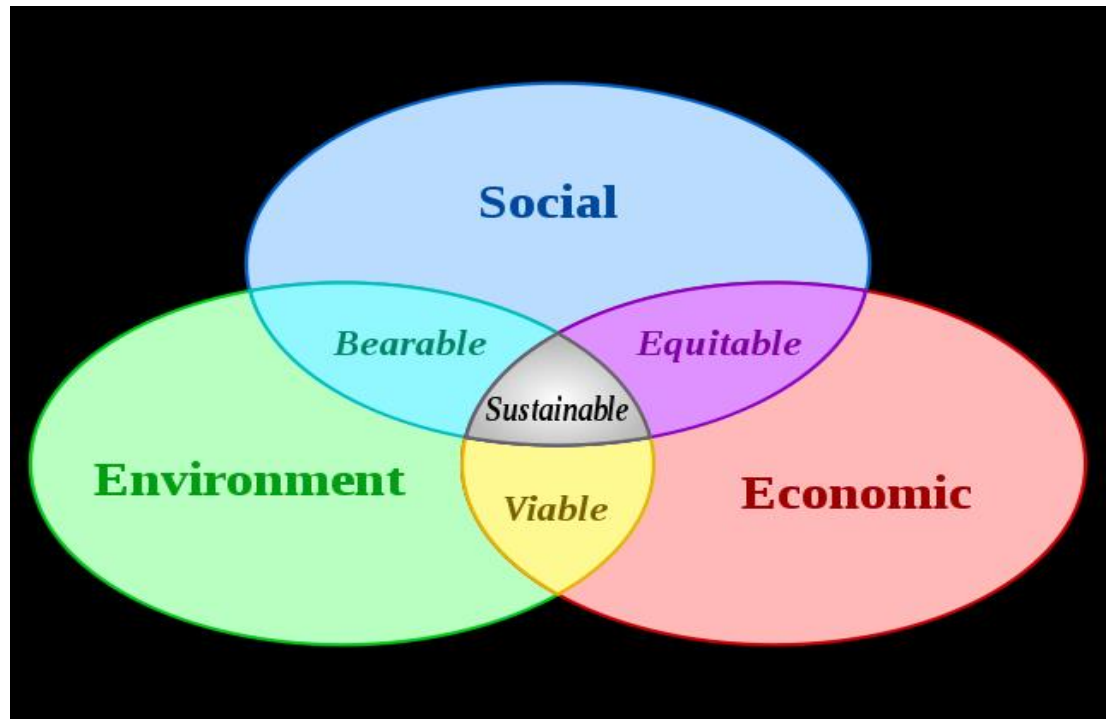
This section reviews literature related to the study based on the following thematic areas: Sustainability of agricultural projects funded by NGOs, monitoring and evaluation system, partnerships for planning M&E and sustainability of agricultural projects, data utilization for M&E and sustainability of agricultural projects, human capacity for M&E and sustainability of agricultural projects, routine programme monitoring and sustainability of agricultural projects, leadership competencies and sustainability of agricultural projects, theoretical framework and conceptual framework.

#### **2.2: Sustainability of Agricultural Projects Funded by Non-Governmental Organizations**

In relation to implementation of projects, sustainability is the probability that a project shall continue long after the outside support is withdrawn. Consequently, while thinking of project sustainability, three things must be born in mind; the community, project results and external assistance. A project is sustainable if the community/beneficiaries are capable on their own without the assistance of outside development partners, to continue producing results for their benefit for as long as their problem still exists. (Oino, Towett, Kirui, & Luvega, 2015)

Among the multitude of definitions of sustainable development captured in the background of the study in this research report, one almost constant inclusion is attention to interconnection of the environment, the economy, and society. These are generally referred to as the three pillars of sustainable development. Sustainable development, in some of its earlier iterations, and is still depicted as three-legged stool consisting of the environment, the economy, and society as the legs. This model treats each of the three pillars as separate and equal entities. The underlying conceptualization of the stool is that if any leg is less important (shorter) or missing the stool becomes unstable. However, if all three legs are the same length (each pillar being given equal weight), the result will be a balanced stool that supports sustainable development (Scottish Environment Protection Agency 2002).

Most of our western decision-makers still regard sustaining development at the expense of the environment as “sustainable development.” This often leads to an economy that is vibrant but without equitable social well-being (Brink & Zeesman 1997; Curry-Stevens 2001) or a healthy environment—thus the necessity for the creation of the three-legged-stool model



**Figure 1: Sustainable Development Model**

Adopted from Scottish Environment Protection Agency, (2002)

Ramsbottom, (2013) conducted a study entitled Factors affecting social sustainability in highway projects in Missouri. The study stated that sustainability focuses on the interaction between a given project and the social, environmental, and the economic dimensions of the system enclosing it. The study noticed that majority of the studies conducted focused mostly on the environmental aspects of sustainability rather than the economic ones, while very few studies discussed the social dimension. Social sustainability promotes the concepts of respect, awareness, diversity, vitality, and responsibility toward the workforce and the society by keeping them healthy and safe from harm during the different phases of a project.

This article discussed highway projects which are one of the most critical infrastructure projects in the construction industry. This is due to their high budgets, frequent occurrences, and the inevitable disturbance they cause to the existing communities and environment. As such, this article conducted a comprehensive study to analyze the performance of highway projects with respect to the social dimension of sustainability. The comprehensive methodology of conducting this research started with extensive review of the available literature in specifically three areas. The first area focused on green building and sustainability in general, which helped in defining the broad lines of this research. The other two areas of focus were social sustainability and highway construction to identify the social sustainability requirements at each specific stage in the construction of a highway. Based on previous sustainability models, a clear definition of social sustainability was given along with a complete list of factors that should be considered to guarantee the practice and implementation of social sustainability in highway projects. The research identified ten main factors that if considered social sustainability can be easily implemented in highway construction.

A questionnaire was then designed to solicit the opinions of experts in the construction of highway about two main aspects: 1) the importance of the consideration of each of the identified factors to achieve social sustainability in highway projects; and 2) the likelihood that such factors are currently considered by practitioners at different stages of highway construction. The questionnaire included 10 questions; only the first question solicited the experts' opinion about the importance and the likelihood of implementing the identified factors using a Likert scale and its corresponding weights. The rest of the questions addressed other issues related to social sustainability in highway construction. The collected data were analyzed and statistical tests were conducted to verify the consensus in responses from two different highway project stakeholders, i.e. owner and contractor.

Saysel, (2001) conducted a study entitled Environmental sustainability in an agricultural development project: a system dynamics approach. The study asserted that regional agricultural projects based on water resource development have many potential impacts on social and natural environments. In this article, potential long-term environmental problems of the Southeastern Anatolian Project (GAP) related to water resources, land



use, land degradation, agricultural pollution and demography were analyzed from a systems perspective.

The analysis focuses on the totality of environmental, social and economic issues. For this purpose, a system dynamics simulation model was developed as an experimental platform for policy analysis. The study revealed that, as the irrigated lands are developed, GAP faces significant water scarcity because of the increased intensity of cotton, the crop with the highest demands for water. Simulation results also indicate that two key environmental factors, pesticide and fertilizer consumption may reach undesirable levels. Alternative irrigation water release strategies, development rates of irrigated fields and farm rotation practices appear as important policy tools in achieving long-term environmental sustainability.

Mwale, (2012) conducted a study entitled marketability and sustainability of food security programmes: products and productivity of agricultural projects. The paper addressed the marketability and sustainability of food security programmes in Limpopo Province. Food security featured prominently because poverty and inequality remains a huge challenge in South Africa's rural sector. Thus the Government initiated the establishment of agricultural community projects as part of interventions for creating jobs and improving income levels. However, lack of monitoring mechanisms in established projects create a challenge of non-sustainability of these projects.

The study used formative evaluation approach to determine the effectiveness of the established food security programme. A mixed model approach was used to collect data from key informants and project members. Descriptive statistics were computed using SPSS. Most projects were on vegetable, poultry and piggery production. The study has found that 64.1% of the respondents reported that access to inputs was not a challenge. Project products are sold to community members who accounted to 79%, and few (1%) to individuals owning business, clinics and outside the community. Project members advertised their produce mainly verbally (47.2%). Marketing strategies for project products were lacking and this creates a negative impact on income generated and sustainability of

projects. The paper concluded by suggesting that project members should be advised on appropriate marketing strategies.

The concept of project sustainability lies at the center of the major debates on development management theories (Thomas, 1996). Broadly speaking, project sustainability relates with the success of an intervention, which is the ultimate goal of the project in producing positive changes. From a sociological and anthropological standpoint, projects are primarily social interventions within a given social system, arousing social processes which change at least to some extent the social structures and institutions of this system and the social behavior of its members (Meyer, 2002). Therefore, development practitioners should ensure that the social systems adapt to the changing social trends in the community-based projects to enhance project sustainability. Saysel, (2001) asserts that for a project to achieve sustainability, it needs to be implemented through a strategic approach.

The strategic approach incorporates four main elements, future orientation: assuming things will change, and planning to maximize benefits which can be derived during and from that change; external emphasis: recognizing the diversity of the project environment and the many dimensions which impact on project outcomes, including technology, politics, society, and economics; environmental fit: planning for a continual fit between the project and its environment, including mission, objectives, strategies, structures, and resources; and process orientation: planning and management priorities evolve in an iterative cycle of conscious and deliberate learning from experience as the reality changes. Nuguti (2009) sustainability is a measure to determine continuation of a project or positive results after external funding have been concluded. Static sustainability refers to continuously flow of same benefits that were set in motion by the completed project to the same target group. Dynamic sustainability refers to use of, or adaptation of project results of a different context or a changing environment by original target group or other group. Some of the elements of sustainability that can be measured through evaluation include, financial viability which is a capacity of a delivered project to generate some income that cover enduring operational cost, secondly, sustaining staff capacity which is the extent in which skilled staff members , or their replacements continue to stay with the project and

that their skills are kept up kept up to date with training and properly utilized by the project and lastly, sustaining community acceptance. If considering the value of the project to the community a continued acceptance of the project by the community meant sustainability.

Therefore, it is important to instill a sense of “ownership” of the project beneficiaries on the project. This is achieved through involvement in every stage of the of the project progress. There is pertinent literature to suggest that sustainable livelihoods perspective helps to enlist objectives, scope and priorities for development, based on the core principles of people-centred, participatory and sustainable activities. While Krantz (2001) applauded it as a more reasoned and holistic approach to poverty eradication and pro-poor development, Ludi and Slater (2007) called it a distinct perspective on understanding the lived reality of people. They concurred that it can be used to analyze how interventions tackle the non-material dimensions of poverty and contribute to strengthening a household's asset portfolio, thus enhancing their livelihood options and well-being. Additionally, many of the early reviews suggested that this approach was particularly useful for: the systematic and holistic analysis of poverty; providing an informed view of development opportunities, challenges and impacts; and placing people at the centre of development work (Ashley and Carney, 1999).

The sustainable livelihoods approaches have also led to: improving understanding of poor people's lives; the constraints facing them, and inter-group differences; increasing inter sectoral, collaborative and interdisciplinary community development research and work; and creating increased links between micro-, meso- and macro-level considerations in poverty and development discourse (Carney, 2002; Hussein, 2002). Ellis and Biggs (2001) remarked that all these characteristics make it consistent with the bottom-up approach to development.

### **2.3: Monitoring and Evaluation System**

Monitoring and evaluation systems, also known in the performance improvement literature as performance measurement and management systems (Guerra-Lo´pez, 2010; Guerra-Lo´pez, 2012), are integral tools for ensuring the effectiveness of international

development efforts. International development refers to “all social and economic programs in developing countries funded by multilateral and bilateral development agencies or by international non-government organizations (NGOs)” (Bamberger, 2000) with the term development applied synonymously with growth, specifically, as the reduction of poverty and for an improved quality of life (Kelly & Novak, 2007).

Agricultural projects represents efforts to reduction of poverty. While the reduction of poverty and an improved quality of life are the two overarching goals of international development, little attention has been paid to measuring this level of impact on target populations (Bamberger, 2000). Evaluation studies are often sponsored by donor and other funding agencies that respond to their own information needs in order to continue, modify, or terminate programs and initiatives, leaving the real question of impact unanswered, and often, missing the opportunity to strengthen the measurable performance of the organizations they support. Monitoring and evaluation (M&E) system is an essential component of effective programme management (Wieman, et al., 2001). The system makes it possible for managers to carry out projects effectively and efficiently, while boosting accountability to beneficiaries, donors and other stakeholders. The performance-driven design and use of M&E systems can have a significant and positive impact on the leadership and management of the organization since the M&E system is meant to function as a leadership and management tool. Guerra-Lo´pez, I., and Toker, S. (2012).

A common mistake made is to consider only the data already available and to force connections between them and strategic aims and evaluation needs, or worse, to design the monitoring and evaluation system only around the data that are currently and easily available (Guerra-Lo´pez, 2007). That is not to say that we should not leverage current useful practices and existing data, rather, that it is critical that we have holistic map of performance indicators if we are going to have an accurate picture of their performance reality. Performance indicators describe evidence points on a shared road map, and therefore, should be designed and identified in collaboration with stakeholders. Stakeholders discuss the appropriateness of the measures, given the impact they have committed to deliver through their vision and organizational objectives. It is important to

find a balance between the value that measures all relevant performance indicators of a given objective and the potential cost of measuring them. More indicators do not equal more value, and the participatory discussion of which indicators formed the basis for a performance driven monitoring and evaluation system should use this as a key guideline. In the NGO sector, M&E systems provide information regarding relevance, performance and success of projects (Psacharopoulos, 1994; Vos, 2006). Besides, Bloom, Canning and Chan (2006) note that M&E sustainability is a crucial intervention for enhancing sustainability of projects, building a learning and knowledge-based economies as well as reducing accelerating economic growth and development.

In low and middle-income economies, the need for M&E systems in NGOs programs has never been more urgent, due to rapidly increasing accountability levels required by donors (World Bank, 2007). In view of this, M&E system is a comprehensive process for generating information, which institutional management and governments use to ensure sustainability of agricultural projects Vos, (2006). Through regular M&E, institutional managers and governments work as partners to identify and address issues that influence sustainability of programs. M&E systems for NGOs community livelihood programmes have inbuilt indicators, which are specific, measurable, achievable and time-bound.

The indicators enable institutional managers and governments to measure performance, cost-effectiveness, and relevance of services. Performance indicators can inform programme management and stakeholders about inherent problems and facilitate improvements in the design and implementation of programmes (Carvalho & White, 1994; Vos, 2006). A good M&E system should have an appropriate balance of different types of indicators that can establish a link between means and ends. Existing literature classifies M&E indicators into four groups, including input, process, output and outcome indicators (Carvalho & White, 1994; Vos, 2006).

Input indicators measure the means or the resources employed to address the needs of specific groups targeted by a programme (Vos, 2006). Examples, in projects it would include the amount of funds allocated to the program, training materials purchased,

operational financial resources, infrastructure and buildings, (Carvalho & White, 1994; Psacharopoulos, 1994; Vos, 2006). Establishing systems of performance indicators has been associated with the success of projects this is the case with M&E systems in countries such as Australia, the United States, and the United Kingdom, focusing on a broader suite of M&E tools and methods: including performance indicators, rapid reviews, impact evaluations and performance audits (Lacey, 2005; Mackay, 2007). Strong M&E systems in for NGO programs should be developed through participatory approaches, funded adequately, and have clear systems for information utilization. In Kenya, the effectiveness of M&E systems in NGO sector is affected by the same generic issues (GoK, 2012a). However, no empirical study has ever focused on the influence of M&E systems on the sustainability of agricultural projects in Non-governmental organizations.

#### **2.4.: Partnerships for Planning Monitoring and Evaluation and Sustainability of Agricultural projects**

Chouinard and Cousins, (2013) conducted a study on participatory evaluation for development: Examining research-based knowledge from within the African context. The study carefully examined the African studies and, through a conceptual critique, reexamined the prior thematic analysis. The study observes that participatory and collaborative approaches to evaluation have grown in popularity in recent years, as program contexts increasingly require more culturally responsive and inclusive approaches to addressing complex community, program and organizational needs. This is particularly the case in development evaluation contexts such as Africa. This article recently conducted a systematic review and integration of the literature on participatory evaluation that included the review of 121 empirical studies published in peer-reviewed journals and other outlets (Cousins and Chouinard 2012).

In that review, only 21 studies derived from development contexts and, of those, only six from Africa. The objective of this article to consider the applicability and relevance of the thematic discussion by Cousins and Chouinard (2012) which included control of decision-making, diversity amongst participating stakeholders and depth of participation. These are shaped and informed by a range of antecedent conditions factors and influences: evaluator

role, community context, institutional influences and program considerations. Participatory practices in turn affect the production of evaluation knowledge and the usefulness of the evaluation. This objective compares with my study in that both studies are interested in the usefulness of participatory of stakeholders in the implementation of projects, in contracts, while my study is interested in establishing the influence of monitoring and evaluation partnership on the sustainability of agricultural projects among NGOs in Bungoma county, this article was interested in determining how participatory approaches influence evaluation in terms of production of evaluation knowledge and use of evaluation. This article used secondary data in which the authors carefully examined the African studies and, through a conceptual critique, reexamined the prior thematic analysis while my study used primary data. In this article, the study was conducted in Canada while my study was conducted in Kenya-Bungoma County.

The results of the study observed that some themes which include control of decision-making, diversity amongst participating stakeholders and depth of participation did not give primacy to context and relationships which are essential considerations in the African context. Further, an emphasis on empowerment oriented outcomes begs attention to societal, cultural and economic considerations, implication for evaluators' roles and a deeper understanding of power issues. The study concluded that thematic discussion did not resonate well with participatory evaluation in development contexts and that a much more focused and targeted review and integration of research was warranted. My study proposition states that there is no significant relationship between monitoring and evaluation partnerships and the sustainability of agricultural projects in non-profit organizations in Kenya.

Holvoet and Dewachter 2013 conducted a study exploring the role of national evaluation societies (NES) contributions to national M&E systems. The study was titled Building national M&E systems in the context of changing aid modalities: The underexplored potential of National Evaluation Societies. The study asserted that changes in the aid architecture provided a renewed impetus for monitoring and evaluation (M&E), while simultaneously imposing a major reform agenda on the key players involved. More

specifically, since 1999, aid-dependent countries have been facing pressure to strengthen their national M&E systems, while donors have been asked to refrain from using their own parallel systems and to rely instead on country systems.

Surprisingly, attempts to strengthen national M&E frameworks have thus far largely overlooked the potential of national evaluation societies (NES). Similarly, NES have also remained off the academic radar. This study aimed to fill this gap by mapping key features of NES, as well as their perceived contributions to country-led M&E. In this effort, the study relied upon evidence from the survey of 23 NES in Sub-Saharan African countries with Poverty Reduction Strategy Papers (PSRP). The study findings showed that there is quite some diversity among NES. Overall, NES are active organizations, whose unique membership features a wide variety of national M&E stakeholders who potentially play key roles in country-led and localized M&E development. Major obstacles faced by NES included the lack of financial resources, donor support and political influence. Survey findings also demonstrated that the increasing interest of donors and governments in NES has yet to materialize into strategic support. This study surveyed Sub-Saharan African PRSP countries including: Benin, Burkina Faso, Cameroon, Comoros, Democratic Republic of the Congo, Ethiopia, Ghana (2 NES), Guinea, Ivory Coast, Kenya, Madagascar, Mali, Mauritania, Niger, Nigeria, Rwanda, Senegal, Tanzania (2 NES), Uganda (NES), Zambia for study. My study is investigating the influence partnership as a component of M&E system on the sustainability of the agricultural projects.

This study is about how national evaluation societies (NES) influence the national M&E systems. Membership to national evaluation society was one the measures to M&E partnerships in my study. My study compares with the study done by Holvoet and Dewachter in that, both studies recognizes the importance of monitoring and evaluation system in the implementation of projects. However this studies contrast in some ways, firstly, the unit of analysis for this article was the national evaluation societies in various counties while my study's unit of analysis included the staff of NGOs. Secondly, while my study's dependent variable is sustainability of agriculture projects, this article was interested in investigating how national evaluation societies influence monitoring and



evaluation systems which mean that the dependent variable was monitoring and evaluation system. The major finding demonstrated that the increasing interest of donors and governments in NES has yet to materialize into strategic support while my null hypothesis states that there is no significant relationship between M&E partnerships and the sustainability of agricultural projects in non-profit organizations in Kenya.

Good planning monitoring and evaluation enhances the contribution of organizations by establishing clear links between past, present and future initiatives and development results. Monitoring and evaluation can help organization extract relevant information from past and ongoing activities that can be used as the basis for programmatic fine-tuning, reorientation and future planning. Without effective planning, monitoring and evaluation, it would be impossible to judge if work is going in the right direction, whether progress and success can be claimed, and how future efforts might be improved, (UNDP, 2007). An M&E Plan is a document that describes a system which links strategic information obtained from various data collection systems to decisions that improves project/programs (Tilbury, 2007).

It is a fundamental document that ensures accountability and measure of success of a project. Its primary goal is to act as a guide to M&E implementation. An M&E plan is a living document and needs to be adjusted when a program is modified or new information is obtained. A survey done by Holvoet and Renard (2007) in eleven countries revealed that there is a very fragmental approach towards M&E planning, and that the focus is overwhelmingly on technical and methodological issues, to the detriment of the overall policy, institutional/organizational set-up and partnerships involved. There is need to ask the following questions, what information is needed and who needs it; how often should the information be collected and how to get it; the implications on budget and who is to collect that information.

This is technical and may not be effectively done if the stakeholders do not have the right skills to link the information need and its collection. To mitigate this trend, a diagnosis of the actual state of M&E supply and demand need to be done to identify strengths and

weaknesses as the starting point in M&E planning (Holvoet and Renard; 2007). This should preferably be done by a team consisting of independent M&E experts and representatives of all stakeholders involved. Plans are a blue print to follow towards a desired end. The end of any M&E system is with sustainability of projects. This should be clear as planners start and should be considered as a priority. Kimweli, (2013) stated participatory monitoring and evaluation in food security projects contributes to the success of food security projects though it should be complemented with good project management skills.

An M&E plan is a document used by the development institutions to help plan and manage all monitoring and evaluation activities throughout a particular project cycle (SFCG, 2010). It provides details on objectives of the project, outcomes, outputs, activities. It also provides details on frameworks, monitoring plan, evaluation plan, implementation plan, data sources and collection plan and also a plan on how data quality will be ensured, Moreover, M&E plan contains description of indicators, who is responsible for collecting them, what forms and tools will be used, and how the data will flow through the organization (Bullen, 2014).

M&E plans should be documented during and shared between all stakeholders including the donors. Good practice suggests as wide an engagement with different stakeholders as possible, and certainly anyone expected to carry out the work contained in the plan should be informed or consulted during its development (Simister, 2015). This enables different stakeholders and staff to think clearly about what they intend doing in the way of M&E before implementation of a project/programme begins, and to ensure those plans are adequately documented (Sinister,2015). This view is underscored by (SFCG, 2010) who assert that the M&E plan allows all staff involved with the project to have a reference sheet of all the M&E activities during the progress of the project and highlights data. In addition, the M&E plan enables the planners to allocate time and resources for the various M&E activities to be carried out during the project life cycle. An M&E plan was not only enhance understanding amongst different stakeholders of the tasks ahead, but should also alert planners to the time and resources required for proper M&E work (Taylor, 2001). Formulation of the Monitoring evaluation framework (MEF) in order to proceed with the

monitoring and evaluation activities is necessary for all projects. M&E Frameworks includes the following: Logical framework, result framework and a conceptual framework. Whereas the log frame provides a structure for project implementation, it is more preferably used by DFID programs/projects; Log frame as it is mostly called is a planning tool that highlights all project components, their indicators, means of verification and assumptions (United Nations Development Programme, 2009) Log frame gives management the upper hand in determining where the project is headed to and what are the accompanying issues or problems. Moreover, it also allows an objective view of how the project is faring.

To achieve project quality, M&E indicators should be Clear: precise and unambiguous, Relevant: Appropriate to the subject at hand, Economic: Available at a reasonable cost, Adequate: Provide a sufficient basis to assess performance and Monitorable: Amenable to independent validation (CREAM) (Kusek & Rist 2001) The logical framework (log frame) is a tool in development programs that prescribes a hierarchical approach to displaying how the project was implemented to achieve its objectives. It shows the interrelationships between design elements, factors influencing success, indicators for project progress and impacts and means of project monitoring (Collete, 2003). It was originally developed for the United States Agency for International Development in 1969 as a tool to conceive a project and understand assumptions (World Bank, 2012). Based on experiences of the various bilateral and multilateral organizations, the log frame approach has resulted in measuring progress and impacts from project design, implementation and post-implementation stages.

The vertical logic is a series of hypothesis linking the achievement of activities through outputs to project objectives and goal. It consists of the intended goals, objectives, outputs and activities, while the horizontal logic consists of the indicators, means of verifications (MOVs) and assumptions. The premise in log frame is that project elements are interrelated and external factors like environment, people, institutions, politics, climate, etc., play in project implementation. Thus, there is a column for assumptions, which describe the external factors that was play in the achievement or non-achievement of the vertical

elements. It also contains the perceived risks that was come along in project implementation. The log frame aids in identifying resource requirements and costs (European Commission, 2004). The use of log frame has its own advantages and limitations. If used properly, it is logical, concise and objective. It places the project into the larger context of a sectoral/program goal and is a valuable tool for the management as it provides a summary of the project in a standard format (Collete, 2003). On the other hand, its limitations revolve around the use of a rigid or inflexible approach by organizations that restricts the flexibility of log frame utilization. Result-oriented projects may ignore the process itself, which is a feature of the log frame. It is also policy neutral when it comes to questions related to income distribution, access to resources, local participation costs or effects on the environment (World Bank, 2012). It is important to note that the log frame approach is one of the tools in project planning and management, and complements other tools like institutional capacity assessment, gender analysis, environmental impact assessment and economic and financial analysis (World Bank, 2012: 58).

As stated previously, it has to be done in a participatory manner, whereby project stakeholders are involved in the whole process for instance, identification of goals, outputs, activities and indicators among others. The role of indicators in the log frame setting is crucial in measuring quantity and quality in relation to the achievement of the design elements, namely goals, objectives, outputs and activities. As such, determining the right indicators should possess the “SMART” qualities: simple – easy to understand; measurable – quantitative where possible; attributable – directly relate to change measured; relevant – to management needs; and timely – at the right time to support management (Collate, 2003).

In addition, indicators should emanate from the perspectives of both the management and the stakeholders to whom the project is intended for. When linked with the project cycle, the log frame approach is embedded in each stage, such as project identification, formulation, implementation and evaluation and audit. Setting indicators to measure progress in inputs, activities, outputs, outcomes, and goals is important in providing

necessary feedback to the management system. It was help managers identify those parts of an organization or government that may, or may not, be achieving results as planned. By measuring performance indicators on a regular, determined basis, managers and decision-makers can find out whether projects, programs, and policies are on track, off track, or even doing better than expected against the targets set for performance.

Indicators is the only element in project M&E plan that was direct the organization concerning the type of data to collect, data sources and how to collect it. This therefore helps in planning for data sources and collection methods (World Bank, 2012), this is also supported by Kusek and Rist (2001) Monitoring and evaluation planning for indicators is therefore one of the foundations to the sustainability of projects Collete, (2003). It provides an opportunity to make adjustments, correct course, and gain valuable institutional and project, program, or policy experience and knowledge. Ultimately, of course, it increases the likelihood of achieving the desired outcomes. Agreeing on the outcomes (derived from the goals) to monitor and evaluate is the first step before stating indicators, Knowing where you are going before you get moving is key. The Importance of Outcomes At the outset, it is important to distinguish between goals and outcomes. Goals are generally long term, such as the MDGs and SDGs that were reviewed earlier. From goals we move to outcomes, which, in the SDG example, are of intermediate time frame (five to ten years). From outcomes we derive targets that are generally short-range—in the MDG context, about one to three years. The question here is, why is it important to emphasize outcomes at this stage? Why not move from goal directly to setting indicators? The answer is, because establishing outcomes was illustrate what success looks like (Tilbury, 2007) this is also supported by Kusek and Rist 2001

Active stakeholder participation in planning for monitoring and evaluation is particularly important to transfer know how, expertise, and possibly funding so that the implemented interventions are sustainable, beyond specific donor intervention Guerra-Lo´pez, (2014) Participatory and collaborative approaches to evaluation have grown in popularity in recent years, as program contexts increasingly require more culturally responsive and inclusive approaches to addressing complex community, program and organizational needs. While

st the participatory approach has taken on myriad meanings over time, with significant blending and mixing of methods across diverse program settings, what distinguishes it from other approaches is the specific focus on the collaborative partnership between evaluators and program community members, Chouinard & Cousins,(2013). He also noted that participatory evaluation is particularly relevant because of the following reasons: Firstly, participatory evaluation has been shown to be particularly potent in fostering learning about programs and the contexts within which they operate this means that partners can adopt the best cultures that suit the implementation process. Secondly, participatory monitoring and evaluation provides an indirect approach to capacity building which includes technical support and fund mobilization. To the extent that local actors, program community members and stakeholders are involved in the co-production of evaluation knowledge they stand to benefit significantly. Such benefits are often framed as ‘process use’ (e.g., Cousins 2007; Patton 2008). Chouinard & Cousins (2009) observed that participatory and collaborative approaches to monitoring and evaluation were by far the most natural fit and preferred choice for inquiry. Such approaches have the potential to integrate, for example, indigenous ways of knowing into the monitoring and evaluation system which was by far improve project sustainability. (Kimweli, 2013) also stated that participatory monitoring and evaluation in food security projects contributes to the success of food security projects. Also, according to Ababa (2013), as discussed in (Oino, Towett, Kirui, & Luvega, 2015) development aid to Kenya has been rising since steadily supporting several projects all geared towards development. Some of the projects have, however, been successful and little evidence is available on the true impact of funded programs on the lives of the poor in Kenya. The study states that one of the most critical obstacles is the extent to which the projects are able to be sustained or persist despite the exit of donors.

Aid agencies are nevertheless aware of the importance of increasing the active involvement of partner countries and developing M&E capacity in partner countries (Liverani & Lundgren, 2007). To date, however, relatively little strategic engagement appears to have taken place in this area, even amongst those aid agencies that mention it in their mandates, as they are struggling with their own persistent capacity-related weaknesses in the area of M&E (OECD/DAC, 2010). Moreover, the aid architecture is also not a fixed given but

constantly in flux as new actors (for instance, Arab aid) enter the scene and political power shifts take place with the BRICs emerging as important new donors. Lack of an evaluation capacity has a direct negative impact on the success of the project in terms of learning and sustainability of projects (Liverani & Lundgren, 2007).

The global financial crisis has also led to an increase of risk-averse Behaviour in donor agencies which tends to undermine alignment to country M&E systems. From this vantage point, capacity building and maturing of country M&E systems even move further upfront the agenda. One issue that has thus far largely remained underexplored by the donor community involves the potential role of National Evaluation Societies (NES), which regroup much of the nationally available M&E expertise, in the development and use of national M&E systems. A desk review of the national PRSP M&E systems of 11 Sub-Saharan African countries and a recent update of the same study for 20 Sub-Saharan African countries demonstrates that none of these countries refers to NES when discussing national M&E. This negligence is in sharp contrast to the upsurge of evaluation societies in the south, which has been identified as one of the most significant changes in the evaluation landscape since the turn of the century (Patton, 2010; Russon & Love, 2004; Smith et al., 2011). In fact, the topic of national evaluation societies has also remained largely unexplored in academic literature and policy papers, with the exception of the IOCE/DESCO booklet on the creation and development of evaluation associations (Segone & Ocampo, 2006), several useful contributions to the UNICEF Evaluation Series regarding country-led M&E systems (Segone, 2008a, 2008b, 2009, 2010a, 2010b) and the Michigan Evaluation Centre's Occasional Paper Series (for instance, The Presidents Panel, 1999). Although these sources provide a useful overview of experience, they date back to the early years of the century and their regional coverage is fragmentary.

The evidence is particularly scarce with regard to developing countries, where the number of NES has increased dramatically in recent years and where there is a growing acknowledgement of the importance of M&E for goals of learning and accountability. In various developing countries (for instance, Ghana, Tanzania and Uganda) civil society organizations have become involved in social accountability initiatives that draw upon

community-based monitoring exercises to hold (local) government accountable. Setting goals in isolation leads to a lack of ownership on the part of the main internal and external stakeholders which is a precursor to low sustainability levels of many projects. Likewise, when choosing outcomes, it is crucial to build a participatory and consultative process involving the stakeholders. Programs are likely to succeed as intended when the community and other stakeholders are highly involved from the start (Kusset and Rist, 2004). The participatory process should start with the development of goals and continue with setting outcomes and building an indicator system. (Indicators cannot be simply turned over to technicians, because the organizational apparatus has to be consulted and has to agree on both goals and indicators. The new realities of governance, globalization, aid lending, and citizen expectations require an approach that is consultative, cooperative, and committed to consensus building.

The voices and views of stakeholders should be actively solicited. Engaging key stakeholders in a participatory manner helps to build consensus and gain a commitment to reaching the desired outcomes which includes sustainability of community based projects Kusek and Rist (2004) With the advent of globalization, there are growing pressures on governments and organizations around the world to be more responsive to the demands of internal and external stakeholders for good governance, accountability and transparency, greater development effectiveness, and delivery of tangible results. Governments, parliaments, citizens, the private sector, nongovernmental organizations (NGOs), civil society, international organizations, and donors are among the stakeholders interested in better success of projects. As demands for greater accountability and real results have increased, there is an attendant need for enhanced results-based monitoring and evaluation of policies, programs, and projects through installation of an M&E system Kusek & Rist (2004)

Clear identification of the expectations and requirements of stakeholders requires agreement for the purpose and focus of the monitoring and evaluation system (Patton, 2008). This consensus may not come readily, however, the discussion made clear what further negotiation is required before moving toward clarification of the decisions to be



made using the findings (Guba & Lincoln, 1989) as the overarching evaluation questions become more in focus. A lack of consensus of purpose is unlikely to result in consensus about the usefulness of the evaluation study or its findings (Guerra-Lo´pez, 2007). The evaluation may not always start out with a clear purpose, in which case the performance-oriented evaluator may begin with the organization’s vision as a guiding star. The vision is the ultimate goal of the organization focused on ideal impact on the community and society (Kaufman, 2006; Kaufman, 2006).

This ideal vision is the commitment the organization makes to and with its shared societal members. Useful evaluations are hinged on this central, shared vision and provide an alignment framework from which future performance monitoring and evaluation efforts stem. Key decisions and objectives are aimed at the desired performance and described in measurable terms as much as possible. Such agreement on desired performance takes into account international or national standards and the perspective of stakeholders. The description of desired performance creates a manageable set of objectives for the process that include performance indicators for measurement. Interviews with stakeholders and document review of strategic plans, operational plans, an annual report, and a member code of conduct were reviewed to identify or validate three goals of the farmer’s union and the current strategic objectives and initiatives intended to meet these goals. The Impact and Monitoring Evaluation Process is fundamentally based on a participatory approach. This project benefits from the support of internal champions and the active involvement of all other stakeholders. The support of an internal champion drives the initiative as well as sees it through post implementation. For human capacity development projects it is especially important to identify someone “who understands the interaction among sectors and contractors at each field unit” (Kelly et al., 2012).

Although any individual consultant could present a monitoring and evaluation model of a high performing trade union organization, it is imperative that the implementation recommendations be organic to the organization. This demands an understanding of the organization and how best to intervene – to make changes and respond to the client’s specific needs and dynamics. This step respects and acknowledges requirements of the

union's members, administration, and leadership as well as the region, and negotiates a shared understanding of the context in effort to set the stage of implementation sustainability and appropriateness of recommendations. Moreover, this particular framework, the IMEP, is as much a performance system framework as it is an evaluation model. It rests on helping stakeholders identify and align specific performance results at various levels of the organization, and the strategies, initiatives, processes, and services that help the organization achieve those results.

In addition to the support of internal champions, a team approach was applied to encourage an efficiency of effort, time, perspective, and applied expertise. Working within a team brings broader perspectives and a depth of experience and application. Sustained stakeholder involvement is critical to bolstering this implementation strategy, as for example, in increasing comfort with the data collection, analysis, and verification. Active stakeholder participation is also particularly important to transfer knowhow, expertise, and possibly funding so that the implemented interventions are sustainable, beyond specific donor intervention.

Participatory evaluation is particularly relevant for developing countries where issues of power differentiation are of concern (Parkinson, 2009) in which the power of one stakeholder group outweighs the power of another. In participatory evaluation, the needs of benefactors are of equal concern to that of donors allowing for increased empowerment of the rural poor (Squire, 2004) and one in which both beneficiaries and other stakeholders are fully represented in development efforts. Squire (2004) notes it is particularly important for evaluators to forge this synergy among interests and expectations early in the evaluation process as it “improves the quality of information available for decision-making and strengthens stakeholders’ commitment to monitoring and evaluation.” thus, enhancing intervention sustainability while alleviating power differentiation. In collaboration with stakeholders, evaluators support sustainability of the monitoring and evaluation efforts and provide a system for keeping track of ongoing progress (Brinkerhoff, 1989) through the use of continuous feedback and action plans. Such plans not only enhance project support or serve as impetus for action (Guba and Lincoln, 1989); they also build a sense of project

ownership which is an important ingredient in project sustainability (Phillips & Phillips, 2007) and supply evidence for continuous decision-making needs. For evaluators, this means situating continuous feedback and action specific to the context and requirements of the internal and external factors impacting performance.

In addition to identifying the methodology for collection and analysis, we also identify for each indicator who would use the data, the frequency with which it should be collected and reported, to whom, and for what performance support purposes. Partnerships in Monitoring and Evaluation has seen attempts to include a range of stakeholders to develop new methods of measuring sustainability, this has seen projects improvement in terms of sustainability (Conlin and Stirrat, 2008; Mebrahtu, 2004). Technical working group is novel strategy to of stakeholder engagement. The objectives of the TWG is to build M&E skills and capacity, share experiences and identify evaluation needs. This platform is essential in the success of projects, Kusek and Rist, (2014). Jacobs et al. (2010) distinguish between the following four types of participatory M&E methods: participatory rural appraisal (including social mapping); audio-visual tools (such as individual story-telling, participatory video, etc.); quantitative tools (such as community surveys); and anthropological techniques, such as participant observation. It is accountability, however, that has been the most important reason for extending impact measurement.

Guerra-Lo´pez 2014 conducted a study entitled the participatory design of a performance oriented monitoring and evaluation system in an international development environment. A developmental research design approach was applied to the case study. Developmental research seek to “create knowledge grounded in data systematically derived from practice. The study illustrated the application of the impact monitoring and evaluation process for the design and development of a performance monitoring and evaluation framework in the context of human and institutional capacity development. The results of the participative process included facilitation of stakeholder ownership in several areas including the design, development, and use of a new monitoring and evaluation system, as well their targeted results and accomplishments through the use of timely performance data gathered through ongoing monitoring and evaluation. Even though the out variable for this study was

monitoring and evaluation system, the finding found that Monitoring and evaluation systems can help organizations align, communicate, and execute their strategies and plans to a vision that clearly identifies the measurable objectives they commit to which includes sustainability of community projects.

Holvoet & Dewachter, 2013 conducted a study entitled Building national M&E systems in the context of changing aid modalities: The underexplored potential of National Evaluation Societies. The study showed that despite aid-dependent countries facing pressure to strengthen their national M&E systems it is still surprising that attempts to strengthen national M&E frameworks have thus far largely overlooked the potential of national evaluation societies (NES).

This study by Holvoet& Dewachter aimed to fill gap of overlooking NES by mapping key features of NES, as well as their perceived contributions to M&E systems of development partners. Of the 67 evaluation societies identified in 56 low-income and middle-income countries, 40 societies from 37 countries participated in our survey (translating to a country and NES coverage rate of 66% and 60% respectively). This sample consisted of 24 African countries, eight Asian countries and five countries in Central and Latin America. The study was highly exploratory because of lack of theoretical framework and prior empirical evidence. These exploratory findings suggest a need for further academic research on factors (or combinations of factors) that are crucial to the effectiveness of NES and the influence of NES in the implementation of NES. This study relied upon evidence from survey of 23 NES in Sub-Saharan African countries with Poverty Reduction Strategy Papers (PSRP). The findings also showed that there is quite some diversity among NES. Overall, NES were active organizations, whose unique membership features a wide variety of national M&E stakeholders who potentially play key roles in country-led and localized M&E development. Belonging to an evaluation body would significantly improve M&E knowhow which is a basic requirement to the success of projects.

## **2.5 Data utilization and Sustainability of Agricultural projects**

Cavens, Kithinji, Gakuu and Kidombo 2017 conducted a study on the influence of allocating resources for M&E activities on the utilization of M&E result at the project level in Kenya's Meru County. The study noted that building capacity for evaluation had become a big concern in the effort of ensuring that evaluations are meaningful. Part of this capacity includes making sure that M&E activities have resources needed to carry them out.

The study used a mixed mode approach in methodology and it was both a descriptive survey and a cross-sectional survey and used both descriptive and inferential analysis of the data collected. The study sampled 186 respondents from a targeted population of 430 employees working in Non-Governmental organizations and other community based organizations in the county. The study showed that resources were allocated for various M&E activities to a great extent. The study also noted high level of M&E results utilization at project level by project employees and all the indicators of resources allocation had positive correlation with M&E result utilization. It was noted that for every unit increase in resource allocation, there was an increase of 26.1% in M&E result utilization score which is a percentage that would justify allocating resources for M&E activities by project organizations. The study showed that resources were allocated for various M&E activities to a great extent. The study also noted high level of M&E results utilization at project level by project employees and all the indicators of resources allocation had positive correlation with M&E result utilization.

This study used M&E result utilization as an outcome variable with Resource Allocation, Evaluational Capacity Building as the predictor variables. The study sampled 186 respondents from a targeted population of 430 employees working in Non-Governmental organizations and other community based organizations in the Meru county. On contrary, my study used results utilization as an independent variable, result utilization is the last component of M&E system denoted as result use and dissemination. My study was also conducted in Bungoma county. My study also contrasts this article in that sustainability of the agricultural project was the phenomenon to be investigated. This article did not specify the kinds of projects to be investigated, it generalized all projects.

For more than 20 years, the subject of data use has been among the central topics of discussion in evaluation studies Cook (1997). In the recent past, this discourse has been characterized in particular by the need to develop an integrated theory of the utilization and influence of evaluations Henry and Mark 2003; Mark and Henry (2004). As compared to these theoretical considerations, empirical studies examining the significance of factors that influence utilization results have tended to increase in turn raising the question of how the result utilization influence the success of a project and the eventual sustainability of projects. There is need for innovative data utilization approaches and systems that encourage use of data in order for policy-makers, managers, practitioners, and community members to identify possible ways of sustaining projects hence helping address barriers to achieving change, Cook (1997). Researchers need to be involved in dialog with these groups to understand policy contexts and how evidence may translate into action Carter, Lavis, MacDonald-Rencz (2010).

A recent systematic review found timely access to good quality relevant evaluation results, collaborations, relationship- and skills-building to be important factors influencing policymakers' use of evidence Oliver, Innvar, Lorenc, Woodman, Thomas (2014). The use of evaluation findings improves the chances of project sustainability and performance which is the main purpose of building a results-based M&E system. The sustainability of projects is determined by the informed decision made by stakeholders from the evaluation results, Oliver, (2014). The main point of the M&E system is not simply to generate continuous results-based information, but to get that information to the appropriate users in a timely fashion so that the performance feedback can be used to better manage organizations and governments, (OECD 2001).

With respect to helping formulate and justify budget requests, performance information can inform decisions that can lead to budgetary increases—or reductions. Projects, programs, and policies may be enhanced or expanded based on performance feedback; likewise, they may be cut or eliminated altogether. Managers also have the option of offering incentives (monetary and nonmonetary) to personnel for good performance or sanctions (such as poor employee or manager performance reviews) for performance that

fails to meet expectations or falls short of intended outcomes. In terms of motivating personnel, when civil servants are brought in as partners to the business of government, we see better implementation.

Employees throughout the system begin to understand and become more enthusiastic about their contributions toward achievement of the desired goal when they have a “line of sight” between their own actions and the goal. In some OECD countries (Australia and France, for example), managers are given greater operational flexibility in exchange for enhanced accountability. Australia provides an example regarding the performance of contractors and grantees. In Australia, there are actual performance contracts with agencies that specify that no annual budget funds will be allocated until contracts have been evaluated and results monitored Kusek and Rist 2000. In other cases, “If the agency contracts or provides grants to other organizations for services to customers, it can include outcome-based performance targets in the agreements and then compare outcomes against those targets” (Hatry, 1999).

Rewards and penalties based on performance can also be delineated in such contracts. If there are no data on which to base decisions, those decisions can be arbitrary. At the same time, decision makers always have the discretion to make their own decisions. However, better decision-making will result from taking the time to monitor, measure, and evaluate, and incorporate the findings into the decision-making process. An interesting corollary to this is that if one starts to ask for performance information, improved performance will result. Other uses of results findings include identifying best practices, supporting economies of scale, avoiding overlap and duplication, and coordinating similar programs across agencies to facilitate project success (Wye 2002). M&E systems provide important feedback about the progress, as well as the success or failure, of projects, programs, and policies throughout their respective cycles. These systems constitute a powerful, continuous public management tool that decision makers can use to improve performance of projects, and demonstrate accountability and transparency with respect to results. One way to consider M&E feedback within the development context is as follows: Evaluation feedback has been broadly defined as a dynamic process which involves the presentation and dissemination of evaluation information in order to ensure its application into new or

existing development activities, feedback, as distinct from dissemination of evaluation findings, is the process of ensuring that lessons learned are incorporated into new operations therefore increasing the chances of project success (OECD 2001). The use of M&E findings can promote knowledge and learning in governments and organizations.

The new emphasis in the international aid community is more and more on local knowledge acquisition, not knowledge transfer from donor to recipient. Learning has been described as a continuous dynamic process of investigation where the key elements are experience, knowledge, access and relevance. It requires a culture of inquiry and investigation, rather than one of response and reporting” (UNDP 2002). Knowledge and knowledge management are additional key components of using performance findings. New knowledge can be generated through the use of findings on a continuous basis. Knowledge management means capturing findings, institutionalizing learning, and organizing the wealth of information produced continually by the M&E system. Results-based monitoring and evaluation systems and units have a special capacity to add to the learning and knowledge process. When used effectively, M&E systems can be an institutionalized form of learning and knowledge. “Learning must therefore be incorporated into the overall programming cycle through an effective feedback system. Information must be disseminated and available to potential users in order to become applied knowledge. Learning is also a key tool for management and, as such, the strategy for the application of evaluative knowledge is an important means of advancing toward outcomes . . . Outcomes present more variables around which learning can and must take place” (UNDP 2002).

Institutionalizing learning is important in governments and organizations. Policy and program evaluation should play a systematic instead of an ad hoc role in the process of organizational learning. A political environment needs to be created that encourages continuous reporting, as well as the use of results. This implies that a certain level of institutionalization has to occur before findings can be used in the management of government institutions. Emphasizing organizational learning as a means of enhancing organizational performance is a fruitful and promising area of engagement with the public sector many governments and organizations may yet be resistant to learning, internalizing,



and sharing performance findings within and between ministries, organizations, agencies, and departments. There are a number of organizational, behavioral, and political challenges to be recognized: OECD 2001 has identified several obstacles that can prevent learning: Organizational culture—some organizations have a culture where accountability tends to be associated with blame. This has the effect of discouraging openness and learning. In other [organizations], it is more acceptable to own up to mistakes and see these as opportunities for learning, recognizing that there is often as much to learn from poorly performing projects as there is from success stories. Secondly, Pressure to spend—learning takes time, and pressure to meet disbursement targets can lead to shortcuts being taken during project planning and approval stages, with lessons from previous experience being ignored or only selectively applied in the haste to get decisions through. Thirdly, Lack of incentives to learn—unless there is proper accountability built into the project cycle there may be little incentive to learn. This is particularly the case when staff or consultants shift from task to task, and have generally moved on long before the consequences of failure to learn are felt. Fourth is Tunnel vision—the tendency of some staff or operational units to get stuck in a rut, carrying on with what they know, even when the shortcomings of the old familiar approaches are widely accepted.

The fifth is Loss of institutional memory—caused by frequent staff rotation or heavy reliance on short-term consultants, or by the weakening or disbanding of specialist departments. Sixth Insecurity and the pace of change—if staff are insecure or unclear about what their objectives are, or if the departmental priorities are frequently shifting, this can have an adverse effect on learning. And lastly, the unequal nature of the aid relationship—which tends to put donors in the driving seat, thereby inhibiting real partnerships and two way knowledge sharing. A good communication strategy is essential for disseminating information and sharing it with key stakeholders. Results-based information should be shared with all internal and external stakeholders and interested parties. “Active follow-up [emphasis added] is necessary to implement recommendations. And to incorporate lessons learned in future decision-making processes. The more stakeholders are involved in planning the next steps, the more likely they are to follow through on implementing evaluation recommendations” (UNPF 2002). Information sharing strategies designed for

and targeted to specific stakeholder groups can also be helpful. In this context, it helps to “[t]ry to adapt existing reporting requirements and resources to new uses and formats” (Wye 2002).

Using results information can take passive and active forms. Understanding the target audience is key. Communication strategies need to be tailored to suit a particular target audience—parliament, ministers, the media, the private sector, NGOs and civil society organizations, and the general public. “Disclosure of negative or controversial evaluation findings can obviously create difficulties for agencies . . . But . . . the benefits of disclosure in the long run make it worthwhile . . . Greater disclosure can also increase the pressure for more systematic follow-up of recommendations, while motivating those involved in evaluations to produce a better product, since they know their report will be made public, rather than being buried on a shelf somewhere” (OECD 2001). Governments and organizations can use a wide array of strategies for sharing information with internal and external stakeholders. These strategies also involve a number of different media that can be used to share the performance information.

## **2.6 Human Capacity for Monitoring and Evaluation, and Sustainability of Agricultural Projects**

The field of program evaluation (PE) is progressing toward a profession around the world. This is true for the developing countries and Kenya included. However, concerns have arisen there about the quality of evaluations, shortages of experienced, trained evaluators, and identification of the skills or competencies for qualified persons (Garden, 2010; Hay, 2010; Hung, Altschuld, & Lee, 2012; Kumar, 2010; Lee, Altschuld, & Hung, 2008). Evaluators deal with conflicts and complex conditions in practice as noted in the literature (Lynch, 2007; Mark, 2002; Montgomery, 2000; Patton, 2008; Russ-Eft, Bober, de la Teja, Foxon, & Koszalka, 2008; Turner, 2006).

An especially important investigation was that done by Skolits, Morrow, and Burr (2009) in which they posited three phases of evaluation – pre, active, and post where evaluators served as managers, detectives, designers, negotiators, diplomats, researchers, judges,

reporters, use advocates, and learners. They generated descriptions of each role and the kinds of competencies required. Another effort was that of King, Stevahn and their colleagues. They perceived that tasks, skills, and content areas had to be “derived from a systemic process or validated by empirical consensus building among diverse professionals” (King et al., 2001, p. 230). To that end, they produced 61 competencies in six domains: systematic inquiry, professional practice, situational analysis, project management, reflective practice, and interpersonal competence (King et al., 2001; Stevahn et al., 2005). The categories and items in them should guide evaluators in reflection, self-analysis, and discussion about an array of knowledge, skills, and dispositions affecting practice. Zorzi, McGuire, and Perrin (2002) used the framework for a study completed under the aegis of the Canadian Evaluation Society (CES). Forty-nine competencies in five practices were generated: reflective, technical, situational, management, and interpersonal practices.

After member consultation and expert review, what they produced was approved by CES as related to its new credentialing system for evaluators (CES, 2009). The efforts of all of the above researchers align well with Spencer and Spencer’s (1993) model of competency design. Its steps are: (1) define performance effectiveness criteria; (2) identify a criterion sample; (3) collect data; (4) analyze data and develop a competency model; (5) validate the competency model, and (6) prepare applications of the competency model. Most of what was done previously tied into the first four steps but not so much 5 and 6, and especially the idea of validation (Wilcox, 2012). This presents an opportunity. Wilcox (2012) explored this gap using a unified theory of validity from Messick (1989, 1995). Evidence was collected to demonstrate the extent to which the ECPE met five validity criteria: content related, substantive-related, and consequence-related, generalizability related, and externally related evidence. For each criterion, the questions respectively were to what extent do the ECPE measure an evaluator’s competence, are they inclusive of all necessary competencies for an evaluator to conduct evaluations, the use or interpretations of the competencies does not have negative consequences for evaluators, are they applicable to practice in various areas, and does competence correlate with other measures of competencies?

Data from a survey and interviews were gathered and analyzed indicating strong support for the first three criteria with mixed and limited evidence for the latter two. An additional concern is how well the competencies work across different contexts and samples (Stevahn et al., 2005; Wilcox, 2012). The current effort is exactly along these lines. Yi-Fang Lee, James W. Altschuld, Lung-Sheng Steven Lee (2013) noted that evaluation is the only true way for measuring the success of projects. Stakeholders can only be informed of outcomes through results evaluations. This was termed as the channel of communication upon which sustainability can be noticed. Human capital is one of the most crucial resources for socio-economic development of an organization or an institution (UNDP, 2009). In relation to M&E systems, the availability and adequacy of trained human resource is crucial for the effectiveness of such systems. High quality M&E systems require dedicated and skilled personnel, who are fully trained on M&E and skilled in developing systematic monitoring frameworks and sound work plans, as well as information quality standards and dissemination plans, among others (UNDP, 2009). Similarly, UNESCO (2009) acknowledges that the usefulness of information generated through an M&E process to stakeholders depends on the quality of human resource involved. Consequently, having adequate human resource that is trained in M&E is an indispensable prerequisite for effective M&E systems (World Bank, 2004). As noted by Lacey (2005), effective M&E systems also require technical capacity in developing credible and relevant information-gathering systems, as well as the skills for gathering, analyzing and reporting on programme performance.

Besides, M&E staff should be skilled in identifying good practices, capacity development needs of junior staff and stakeholders regarding M&E; as well as assessing the relevance of M&E frameworks regularly, based on emerging development priorities and changing contexts (UNDP, 2009). In view of this, most organizations and government departments often recruit specialists to guide M&E activities. More still, Lacey (2005) notes that human resource capacity for effective M&E systems also require appropriate policies and standards, which clarify roles, responsibilities, and accountabilities. The policies and standards should also establish expectations, timing, and level of reporting, as well as set out quality standards for M&E conduct.

## **2.7: Routine Programme Monitoring and Sustainability of Agricultural Projects**

Yusuf and Achayo, (2017) conducted a study entitled Influence of monitoring and evaluation on performance of constituency development fund projects In Kajiado East Sub-County, Kenya. The objective of this study were to Establish the influence of training and Time Allocated on performance of monitoring and evaluation of Government Projects case of CDF projects in Kajiado East Sub-County and Determine how Funds available for monitoring and evaluation influence performance of monitoring and evaluation of Government Projects case of CDF projects in Kajiado East Sub- County. The study employed a descriptive survey research design. The target population was 138 respondents from which same sample of 122 was obtain from. The researcher used selected 122 respondents. Numerical data collected using questionnaires was coded and entered and analyzed with help of a computer Statistical Package for Social Scientists (SPSS) version 21 software programme.

The data was analyzed using Correlation and regression where the study used Pearson correlation to relate the variables. The findings of the study were, in relation to the first objective found that that the level of training on M & E was of central importance to the performance public projects, second objective found that There was a high correlation between Influence of Training and Performance of Monitoring and Evaluation, Influence of Time and Performance of Monitoring and Evaluation and Influence of Strength of Monitoring Team. M & E is important for success of any project, yet it is in most Government projects they have not been able to adopt it effectively. The role of Training, Time Management and Strength of Monitoring Team only 22.6 percent unexplained. The P- value of 0.004 (Less than 0.05) implies that the model of factors influencing performance of M & E is significant at the 95% confidence level. A continuous improvement process typically contains three activities that operate in an interactive manner in project management: Time cost and Quality. This article contrasts my study in that it was conducted in Kajiado East sub-county while my study was conducted in Bungoma County. The article also contrast with my study in that its depended variable was performance of Constituency Development Fund Projects while my project depended variable was sustainability of agricultural projects. Moreover, my study variable is

concerned with the influence of monitoring while this article is concerned with the influence of monitoring and evaluation.

Wanjala, Amuhaya and Odhiambo, (2017) investigated the influence of monitoring techniques on project performance of Kenyan State Corporations. Simple random sampling was used to select 65 state corporations which form the sample size. Data were collected from the sample size using questionnaires with both open and closed questions. The data were analyzed using descriptive and inferential statistics as well as qualitative methods. The relationships between variables were determined using person correlation and t-test. Assessments of normality were done by Shapiro-Wilk test. Findings showed that Monitoring techniques ( $\beta_3 = 0.674$ , p) has significant effect project performance. The article also contrast with my study in that its depended variable was performance of Kenyan State Corporations while my project depended variable was sustainability of agricultural projects. Moreover, my study variable is concerned with the influence of monitoring while this article is concerned with the influence of monitoring techniques.

The investigation by Koffi Tessio (2002), on Efficacy and Efficiency of Monitoring practices for Projects Financed by the Bank Group that was done in Burkina Faso, Mauritania, Kenya, Rwanda and Mozambique, through work area audit and meetings, for projects endorsed in the vicinity of 1987 and 2000. Monitoring practices are not meeting their compulsory necessities as basic leadership instrument; Instead, their exercises are seen as controlling by a bureaucratic administration. The poor securing of the suitable monitoring practices by state partnerships is credited to accentuation on the physical framework (for example PC gear, working capital) as opposed to methodological and calculated preparing.

In an investigation directed by Gyorkos (2003), he discovered that; there ought to be a reasonable particular of how frequently monitoring information is to be gathered and from whom, there ought to be a detail of a timetable for monitoring tools to be composed and that the monitoring be done routinely keeping in mind the end goal to have the capacity to track the venture and recognize issues sufficiently early before they leave hand. Zubair et

al. (2006) done an examination called an efficient approach for monitoring and evaluating the project progress.

The examination utilized basic investigation and found that both the evaluated favorable circumstances and the burdens of such an administrative instrument, opening new points of view for growing additionally enhanced models and frameworks where Monitoring influence emphatically on the manageability of the tasks in Romania. Paulinus and Iyenemi (2014) completed an investigation called M & E rustic water supply ventures and practical improvement in Nigeria and Ghana. The investigation surveys the manageability issues that are related with country group water arrangement and a portion of the difficulties experienced in the in-Niger Delta district of Nigeria inside the setting of venture benefits sustenance.

The discoveries uncover the nonappearance of supportability in the momentum approach and the paper suggests that if group based hand pump worked country water supply projects are to be practical; the maintainability factors must be given full thought in its outline and usage. Passia (2004) discovered that observing ought to be vital parts of the project administration lifecycle. Thinking in regards to monitoring at the outline phase of its design encourages the project partners to think in regards to performance estimation even before usage begins with a reasonable picture of desires of what an effective project would resemble. Passia (2004) additionally discovered that ineffectively planned activities are difficult to screen or assess without appropriate observing systems, and that life cycle characterizes the project's normal results and objectives and encourages the monitoring to decide the degree to which the targets were achieved. Therefore, monitoring is reliant on execution implying that if observing are defective and farfetched, at that point performance won't be of any noteworthy incentive to its stakeholders.

The consistency of monitoring could be an element of the extent of the project, however a month to month recurrence would be sufficient, monitoring at regular intervals would in any case be worthy (AUSAID, 2006; FHI, 2004; Gilbert et al, 2014) examined the manageability in project management capabilities: dissecting the skill crevice of project

managers in Netherlands. The goal was to dissect the scope of the skills required for considering supportability viewpoints, in the measures of project management capabilities. The examination likewise planned to determine the skill gap of venture chiefs concerning maintainability, and to give direction on the best way to close this hole. The investigation along these lines made particular recommendations on how the benchmarks of project management skills ought to create with a specific end goal to get ready project managers for their vital part in acknowledging supportability of organizations. The examination utilized narrative investigation and inferred that Projects are "instruments of progress" inside organizations, which assume a critical part in the acknowledgment of feasible business procedures and practices. Project managers are along these lines critical "change operators" in organizations that impact the supportability of organizations. Mukuhlani (2014) carried out a study called empowerment through small business development projects in Zimbabwe. The overall aim was to address the prevalent issue of unemployment and poverty in Zimbabwe's Midlands Provincial Capital City of Gweru. Twenty s ventured in a brick moulding project and successes and challenges were noted. Through interviews, questionnaires, focus group discussions and observations found out efforts being made by their generation to make ends meet and to have a sustainable project. Karanja (2014) investigated the impact of management practices on maintainability of activities in Kangema District, Murang'a County, Kenya. The reason for the study was to evaluate the impact of management practices on manageability of the tasks.

The particular destinations were to build up impact of Leadership on manageability of undertakings in Kangema District, to set up impact of Training on maintainability of ventures in Kangema District, to set up the impact of money related management on supportability of tasks in Kangema District, to survey the impact of Monitoring and evaluation on supportability of activities. Kangema District. It concentrated on Training, Monitoring & Evaluation, Leadership and money related management viewpoints in connection to project maintainability. The examination uncovered that, sound money related management, fitting preparing, authority and compelling observing and assessment impact the maintainability of the undertakings. An examination by Prabhakar (2008)



pointed that Monitoring and Feedback was one of the components prompting project performance.

In like manner, Papke-Shields et al. (2010) additionally noticed that the likelihood of accomplishing performance appeared to improve among different elements, by continually monitoring the progress of the project. As indicated by their examination, monitoring and controlling were important in the management of project scope, time, cost, quality, HR, correspondence, and dangers. Jaszczolt et al. (2010), in their suggested that: state partnerships should be instructed on observing methodologies through handbooks with a specific end goal to build quality, a national expert relationship of evaluators additionally should be built up to help in creating specialized abilities among the checking authorities, and to wrap things up to build up a generally available contributor for monitoring reports as a framework where associations can gain from past encounters Passia. (2010) built up that project achievement was not sensitive to the level of project planning endeavors yet then again discovered that a critical relationship exists between the utilization of monitoring instruments and project "profile," a win foundation which was an early pointer of project long haul affect. Similarly, one of the components of the project management methodology whose main aim is to achieve project success was monitoring project progress. Jaszczolt et al. (2010), carried out a regression analysis, the investigation demonstrated that there was a measurably huge and positive connection between each of the five Critical Success Factors and performance. The five basic achievement factors incorporate observing, coordination, outline, preparing and the Institutional condition. Zubair, Mutuku and Mutuku (2006) examined Strategic arranging in the Higher Education Sector of Kenya. The investigation uncovered that Kenya state funded colleges are basically customary in introduction and must discover better approaches for managing the issues confronting them incorporate expanding rivalry from different colleges. The examination watched that key arranging is one of the real strides the colleges can take to address the difficulties they confront.

The examination recommended that colleges ought to consider fuse of vital speculation in their procedure of key planning to make their arranging more helpful in perspective of the disappointments of key arranging in state funded colleges. The exploration was authentic that, vital deduction looks at the basic issues in each circumstance and conceivably would help state funded colleges to be adaptable and open in their arranging endeavors. The examination prescribed that state funded colleges ought to energize dynamic interest of whatever number partners as could be allowed, including the workforce, organization, industry, instruction specialists, understudies, and graduated class. Along these lines cooperative energy and possession are worked all the while. The Kenya social protection sector Tache (2011), that concentrated on principle programs in the social insurance segment in Kenya, led through writing survey, scene overview and top to bottom meetings with extend implementers, expresses that very few projects in Kenya have a useful observing frameworks, in spite of being certify for advancing straightforwardness and responsibility. From the projects surveyed 76% had built up some marker system for observing, 71% led monitoring exercises 51% had a planned or continuous effect monitoring and 39% had no monitoring reports for public utilization. This is credited to programs not assigning the required assets at the outline phase of the checking.

There was additionally an irregularity in the decision of performance markers among the Kenya projects which prompted confused and in extensive monitoring frameworks. Out of 88.1% of the Kenya safety net projects, no one but 16.7% could furnish an audit group with a legitimate structure. The survey additionally settled that in spite of the fact that checking seldom affected the basic leadership process, its data was being utilized to educate project and program outlines and additionally advise arrangements. The survey additionally noticed that the nation depends much on observing universal specialists and in this way prescribes the limit working of national and dynamic wean program of government workers (local people) since they remain in the area over the long haul (Mwaura,2007) analyzed factors, strategies, polices & stakeholders influence for performances in agri-business projects in Bugesera District Rwanda. Being responsible essentially implies being in charge of choices made, moves made, and assignments finished (Gupta, 2011).

Association for arranging is an essential for effective M&E frameworks is the presence of M&E organizations for the two recipients and proprietors of the activities. Associations for M&E frameworks are for projects since they supplement the project's M&E endeavors in the M&E procedure and they go about as a source of confirmation for whether M&E capacities adjust to planned targets (Koman, 2008). Supportive supervision infers that an individual or project can manage consistently the M&E forms such that the supervisor offers proposals on methods for development. Supportive supervision is imperative since it guarantees the M&E procedure is run productively (Koman, 2008). Project monitoring as a procedure tries to guarantee that project goals are met by monitoring and measuring progress frequently to recognize differences from design with the goal that restorative moves might be made.

Against this background, the Project Management Institute (Zubair, 2006) characterizes project controlling procedures in that capacity activities that guarantee that venture destinations are met by monitoring and evaluation (M&E) advance routinely to recognize fluctuations keeping in mind the end goal to utilize restorative activity. As per Zubair, (2006) project monitoring is typified by three fundamental standards: Firstly, prevention-where dynamic concentrate is put on keeping fluctuations from happening. Monitoring is viewed as administration works and is a form of conveying any adequacies or challenges in project implementation. Morrison (2013) portrays project monitoring as the way toward gathering, recording and announcing data concerning any or all parts of the performance of a project. Passio (2004) portrays it as a persistent evaluation of a program or project in connection to the concurred performance timetable or plan. Thomas et al. (2002) utilize project performance as the reason for assessing the adequacy of project conveyance forms.

Thomas et al.(2002), Ling and Chan (2002) and Ling et al. (2004) depict project performance as the evaluation of project achievement and utilize target factors, including time, cost and quality destinations, and subjective variables, which are worried about the appraisal of partners' fulfillment. This examination utilized four goal variables: time and cost overwhelms, level of time invades to the underlying contract time frame and level of cost overwhelm to the underlying contract entirety.

Legitimate framework set up to screen and assess the adequacy of the utilization of these assets this is so in light of the fact that the designating expert is not limited to naming individuals with such information. Grossman (2005) on his part contended that a program's viability can be measured precisely just on the off chance that one realizes what might have occurred without it. Thomas et al. (2002) agreed with the declaration and states that measuring the adequacy or effect of an arrangement or program relies on asking the key Inquiries. What might the arrangement have been if the intercession had not occurred? Albeit one clearly can't watch such a circumstance it is conceivable to inexact it by developing a proper counterfactual which is speculative circumstance that tries to portray the welfare level, of people without an approach or program.

Grossman (2005) also established that adopting project monitoring on budget performance, schedule performance, and quality performance could lead to project performance. The monitoring should involve gathering information, examination and witting a report at the predetermined recurrence. There seem consensus across the project management field of study in the statement that monitoring is a major contributor to performance. To crown it all, PMI, which stresses the importance of monitoring in achieving performance conclude that from the literature review done and a review of previous studies shows that much effort has been put in place to have an effective systems.

## **2.8: Leadership Competencies and Sustainability of Agricultural Projects**

Mwithi, Were and Muturi (2017) conducted a study with the objective of establishing the effect of leadership competencies on performance of state corporations in Kenya. The study adopted a cross-sectional survey research design. The study's population was the state corporations in Kenya. The study targeted 187 state corporation top managers who reports to the CEO in the as the participants. The study used stratified sampling technique to come up with the sample. The sample size was 131 state corporations. The study used both primary and secondary data which was largely quantitative and descriptive in nature. Primary data was collected through questionnaire. A pilot study was conducted to measure the research instruments reliability and validity. Descriptive and inferential analysis was conducted to analyze the data. The data was presented using tables, graphs and charts.

Results revealed that all the leadership competencies had a positive a significant relationship with the financial performance of state corporations in Kenya. However, the magnitude of the influence was different for the specific leadership competencies. Social awareness leadership competency had the largest effect followed by self-awareness leadership competency then social skills leadership competency and finally the self-management leadership competency. Results also revealed that self-awareness leadership competency and social skills leadership competency had a positive a significant relationship with the non-financial performance of state corporations in Kenya while self-management leadership competency and social awareness leadership competency had a positive but insignificant relationship. However, the magnitude of the influence social skills leadership competency was higher than that of self-awareness leadership competency. Further, the results showed that organization size only had a positive and significant moderating effect on the relationship between leadership competencies and non- financial performance of state corporations in Kenya. Unique contribution to theory, practice and policy: Leadership competencies affect the development, functioning and management of state corporations thus improving the performance of these organizations. Hence, the study findings and recommendations of the study would be an eye opener to these corporations and provide them with the opportunity of improving its self-management leadership competencies.

The findings of this study was also facilitate the availability of information for regulatory bodies such as CMA and NSE (in case of listed state corporations such as Kenya Power and Lighting Company) or supervisory bodies such as Inspectorate of State Corporations, Controller and Auditor-General. The study was provide invaluable input on its self-management leadership competencies of state corporations which they was adopt in formulating laws and regulations affecting its self-management leadership competencies. Strengthening leadership competencies at corporation level might be a viable option for Kenya as a country which is faced by major Leadership competencies challenges characterized by corruption and misallocation of resources.

Unlike my study which was concerned with sustainability of agricultural projects, this article was concerned with performance of state corporations. Also, unlike my study which had NGOs as the unit of analysis, this article had state corporations. The title of this article was effect of leadership competencies on performance of state corporations in Kenya while my sixth objective in my study was determining how leadership competencies influence sustainability of agricultural projects in Bungoma county. Lastly, while my study was confined in Bungoma County, this article concentrated on state corporations in entire Kenya.

Asree, Zain and Razalli, (2009) conducted a study with the purpose of investigating the operations strategy of service firms (hotels) in order to determine whether infrastructural aspects aspects of their operational practices which is leadership competency and organizational culture would affect the performance. The approach takes the form of an empirical analysis of data (using structural equation modeling) obtained via a questionnaire survey involving 88 hotels of various ratings in Malaysia. The findings indicated that leadership competency and organizational culture have positive relationships with responsiveness. In addition, responsiveness has a positive relationship with hotel revenue. These findings imply that leadership competency and organizational culture are important factors for hotels to be responsive to their customers, and in turn responsiveness to customers would improve hotel revenue. Practical implications of this study was that hotel managers need not only to improve their leadership competency but also to instil an organizational culture that is supportive of their employees. These operations practices would make their hotel more responsive to customer needs, which in turn would help to improve their hotel performance. In contrast, my study was concerned with sustainability of agricultural projects, this article was concerned with performance of hotels. Also, unlike my study which had NGOs as the unit of analysis, this article had investigated hotels. Lastly, while my study was conducted in Kenya and specifically in Bungoma County, this article was conducted in Malaysia.

## **2.9 Theoretical Framework**

The study is anchored on one theory which is systems theory.

### **2.9.1 Systems Theory**

This study adopted the systems theory advanced by Ludwig von Bertalanffy in 1968. Systems theory is a way of elaborating increasingly complex systems across a continuum that encompasses the person in environment (Anderson, Carter, & Lowe, 1999). Systems theory also enables us to understand the components and dynamics of client systems in order to interpret problems and develop balanced intervention strategies, with the goal of enhancing the “goodness of fit” between individuals and their environments. Systems theory is linked to a science of wholeness. Systems theory does not specify particular theoretical frameworks for understanding problems, and it does not direct the social worker to specific intervention strategies. Rather, it serves as an organizing conceptual framework or metatheory for understanding (Meyer, 1983). As a profession, social work has struggled to identify an organizing framework for practice that captures the nature of what we do. Many have identified systems theory as that organizing framework (Goldstein, 1990; Hearn, 1958; Meyer, 1976, 1983; Siporin, 1980). This theory is relevant to my study because my study investigated the influence of monitoring and evaluation system on the sustainability of the agricultural projects. In this essence, monitoring and evaluation system is expected to provide a balanced system which should ensure that no subsystem area is emphasized at the expense of the system as a whole. It should also ensure that there is an inter-operability of the system in which all related systems and subsystems are common standards for data interchange and work together to accomplish shared processes. The components of the monitoring and evaluation system to be investigated in this study includes the following: Monitoring and evaluation partnerships, data utilization, human capacity for monitoring and evaluation, and routine programme monitoring.

### **2.9.2 Stakeholder theory**

The study was also anchored on stakeholder theory which originated in the mid-1980. Stakeholder theory originated from the pioneering work done at Stanford Research Institute (SRI) in the 1960s (Friedman, 2006). The traditional definition of a stakeholder is any group or individual who can affect or is affected by the achievement of the organizations objectives (Freeman, 1984). However, the general idea of the stakeholder concept is a redefinition of the organization which refers to what an organization should be and how it should be conceptualized. In this context, the study perceived the theory to be most appropriate since various stakeholders who includes business organizations, non-governmental organizations, individual residents, religious leaders, self- help groups and private partners are expected to directly participate in sustainability of agricultural projects. Stakeholder theory involves three approaches namely:-Normative stakeholder theory which outlines the need of how managers should plan for their activities as relates to in sustainability of agricultural project and how stakeholders should act and view the purpose of organization based on some ethical principle (Friedman, 2006). Secondly is the descriptive stakeholder theory which is an approach concerned with how managers and stakeholders actually behave, view their actions and roles and thirdly is the instrumental stakeholder theory which highlights on how managers should act to maximize in sustainability of agricultural projects. Friedman (2006) noted that planners did not want to attempt to influence specific stakeholder behavior rather they wanted only to focus the future environment in order to adopt it with the capability of the company.

### **2.9.3 Theory of Change**

The theory of change origins can be found in the considerable body of theoretical and applied development in the evaluation field, especially among the work of people such as Huey Chen, Peter Rossi, Michael Quinn Patton, and Carol Weiss. These evaluation theorists and practitioners, along with a host of others, have been focused on how to apply program theories to evaluation for many decades. The stream of work leading to the use of theories of change in evaluation can be traced back to the late 1950s with Kirkpatrick's 'Four Levels of Learning Evaluation Model'. Further progress and evolution has included Daniel Stufflebeam's CIPP (context, input, processes and products) and the widely used



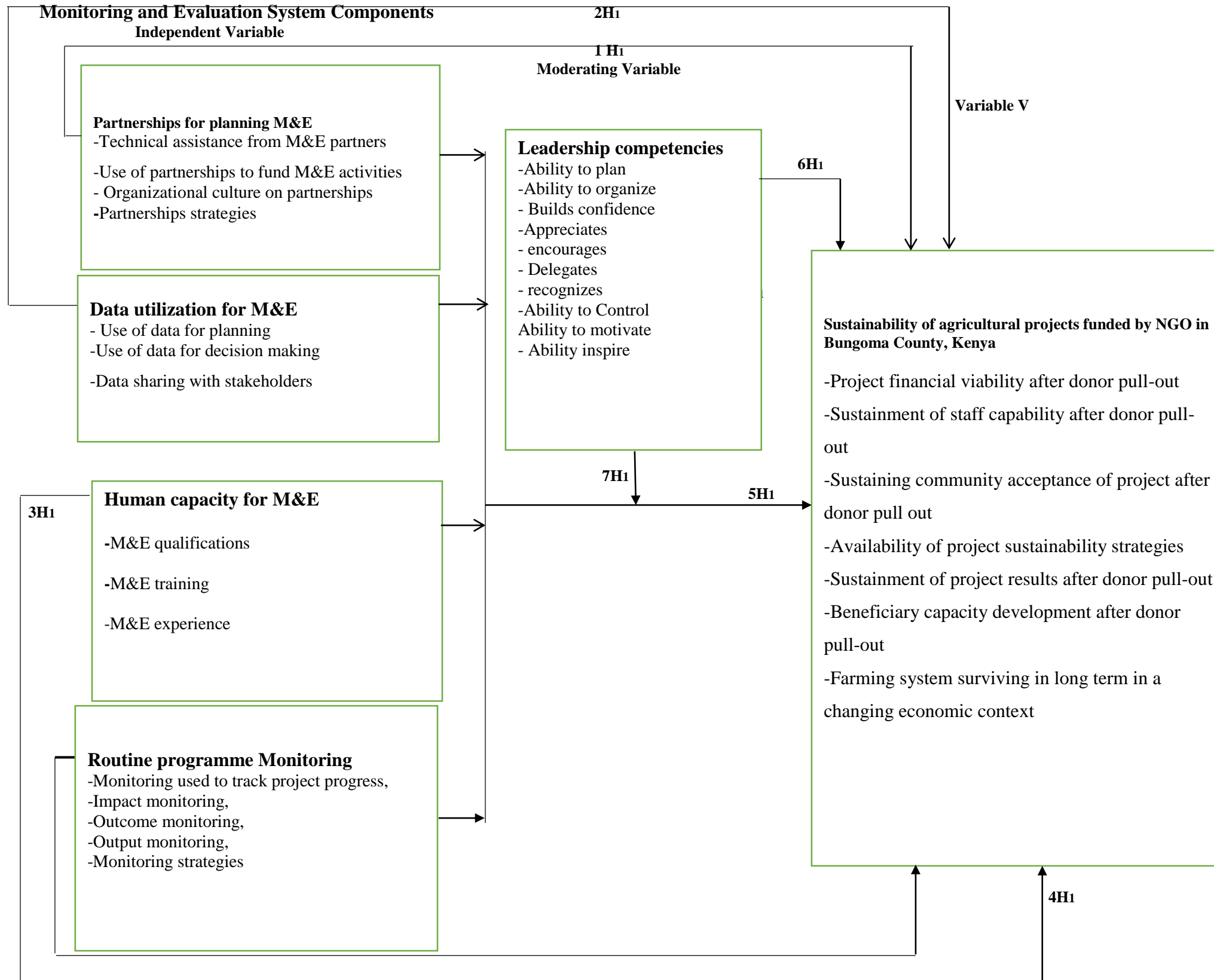
logical frameworks (logframes) or logical models which set out causal chains usually consisting of inputs, activities, outputs and outcomes coupled to long-term goals.

Methods such as logframes were a significant advance, providing a framework through which the relationships between a program's components could be drawn out and articulated. However, US writers such as Weiss, Chen and Patton increasingly highlighted the challenges in evaluating complex social or community change programs when it was not clear precisely what the programs had set out to do or how and therefore difficult to evaluate whether or how they had achieved it (James, 2011). Theory of Change (ToC) is a specific type of methodology for planning, participation, and evaluation that is used in the philanthropy, not-for-profit and government sectors to promote social change. Theory of Change defines long-term goals and then maps backward to identify necessary preconditions. Theory of Change explains the process of change by outlining causal linkages in an initiative. This theory is relevant to my research because it talks of planning, participation, and evaluation that is used in the philanthropy, not-for-profit and government sectors to promote social change. Theory of change advocates for achievement of high up results which includes sustainability, impact and capacity development. This is relevant because the focus of this study is the sustainability of agricultural projects.

## **2.10 Conceptual Framework**

This study is guided by the following conceptual framework

**Figure 2: Conceptual framework**



### **2.11. Summary of the Literature Review**

Literature review is discussed in the following thematic areas: Sustainability of agricultural projects, partnership for planning M&E, data utilization for M&E, human capacity for M&E, and leadership competencies: Sustainability of agricultural projects funded by NGOs has been designated the dependent variable. Literature review was based on theoretical constructs for the purposes of measuring the themes. To start with, sustainability of agricultural projects shall be measured in terms of the following: project financial viability after donor pull-out, sustainment of staff capability after donor pull-out, Sustaining community acceptance of project after donor pull out, availability of project sustainability strategies, sustainment of project results after donor pull-out, beneficiary capacity development after donor pull-out and farming system surviving in long term in a changing economic context. The study was to test if there exists a significant relationship between the M&E systems and the sustainability of agricultural projects. Firstly, partnerships for planning M&E was measured by the following: Technical assistance from M&E partners, use of partnerships to fund M&E activities, organizational culture on partnerships, partnerships strategies, secondly, Data utilization for M&E was measured by the following: Use of data for planning, Use of data for decision making, data sharing with stakeholder. Thirdly, human capacity for M&E was measured by the following: M&E qualifications, M&E training, and M&E experience. Fourthly, routine programme monitoring was measured by the following: Monitoring used to track project progress, impact monitoring, outcome monitoring, output monitoring and monitoring strategies. The fifth predictor variable which was leadership competencies which was measured by the following: Ability to plan, encourages, ability to organize, delegates, ability to Control, recognizes, ability to motivate, ability inspire, builds confidence, and appreciates their subordinate staff

## 2.12 Research Gap

The literature review reveals various gaps, which are listed in Table 2.1.

**Table 2.1 Knowledge Gap**

Variable	Author(s) & Year	Title of the study	Methodology used	Main findings	Knowledge Gaps
Partnerships for planning M&E	Guerra-Lo'pez 2014	i. The participatory design of a performance oriented monitoring and evaluation system in an international development environment	A developmental research design approach was applied to this case study	This participative process facilitated stakeholder ownership in several areas including the design, development, and use of a new monitoring and evaluation system, as well their targeted results and accomplishments through the use of timely performance data gathered through ongoing monitoring and evaluation.	<p>-This study was too general in that it looked at participatory design of a performance oriented monitoring and evaluation system on international development environment. The study focused on application of the impact monitoring and evaluation process for the design and development of a performance monitoring and evaluation framework in the context of human and institutional capacity development. The study by Guerra-Lo'pez was simply interested in the development and effectiveness of a Monitoring and evaluation system. This research on the other hand is very specific it was determine partnerships as a component of M&amp;E system on the sustainability of projects.</p> <p>-This study did not test hypothesis to determine how participatory design of a performance oriented monitoring and evaluation system influence international development environment hypothesis was tested</p> <p>-This study was conducted in USA while this study was in Kenya, Bungoma county</p> <p>-This study did not use any moderation influence of any other factor while this study tested the moderation influence of leadership competencies.</p>
	-Nathalie Holvoet, Sara Dewachter * 2013	ii. Building national systems in the context of changing aid modalities. The underexplored potential of national evaluation societies	-The study used an online survey of National evaluation societies.	-The findings showed that there is quite some diversity among NES. Overall, NES were active organizations, whose unique membership features a wide variety of national M&E stakeholders who potentially play key roles in country-led and localized M&E development. Belonging to and evaluation body would significantly improve M&E knowhow which is a basic requirement to the success of projects	<p>-The study by Nathalie and Dewachter explored the role of national evaluation societies (NES) contributions to national M&amp;E systems</p> <p>While this research is looking the influence partnership as a component of M&amp;E system on the sustainability of the agricultural projects. Membership to NES was one the measures to M&amp;E partnerships.</p> <p>- This study surveyed Sub-Saharan African PRSP countries including: Benin, Burkina Faso, Cameroon, Comoros, Democratic Republic of the Congo, Ethiopia, Ghana (2 NES), Guinea, Ivory Coast, Kenya, Madagascar, Mali, Mauritania, Niger, Nigeria, Rwanda, Senegal, Tanzania (2 NES), Uganda (NES), Zambia for study while this research was based in Kenya and Bungoma county.</p>

	<p>-Jill A. Chouinard J. Bradley Cousins 2013</p> <p>Mya H. Sherman &amp; James Ford 2013</p>	<p>iii. Participatory evaluation for development: Examining research-based knowledge from within the African context</p> <p>iv. Stakeholder engagement in adaptation interventions: an evaluation of projects in developing nations</p>	<p>The study carefully examined the African studies and, through a conceptual critique, reexamined the prior thematic analysis</p> <p>-A systematic realist review was used to provide a rigorous, transparent, and reproducible methodology Data sources included Empirical case studies which were systematically selected from the Adaptation Learning Mechanism's (ALM) 'case studies'.</p>	<p>Observation was made that some themes did not give primacy to context and relationships which are essential for consideration in the African context. Further, an emphasis on empowerment oriented outcomes begs attention to societal, cultural and economic considerations, implications for evaluators' roles and a deeper understanding of power issues.</p> <p>-All Strategic Priority for Adaptation (SPA) projects involved both institutions and community members during project design and implementation, The SPA projects in this review were the highest performing projects overall, scoring highest in efficiency, legitimacy, and replicability.</p>	<p>-The unit of analysis for this study was the national evaluation societies in various counties while this research's unit of analysis included the NGO staffs to determine the sustainability of the projects.</p> <p>-This study narrowly determines the influence of participatory evaluation on development by Examining research-based knowledge from within the African context. In contrast, this research was holistically investigate the influence of M&amp;E partnerships on the sustainability of agricultural projects. This research was specific on M&amp;E partnerships.</p> <p>-The study by Sherman&amp;Ford was close to my objective. The study investigated the influence of stakeholder engagement on the performance of projects. While this research investigated the influence of M&amp;E partnerships on project sustainability. The aspect of M&amp;E is missing in the study by Sherman&amp;Ford. Many studies conducted focuse on general stakeholder engagement on project, there is no empirical study that specifically investigate the influence of M&amp;E partnerships. NO study has also been conducted to test how this influences sustainability of agricultural projects</p> <p>-The study by Sherman&amp;Ford screened 116 case studies and a total of 18 interventions met inclusion criteria. This shows that this study used document review as its data source. This research however used primary data instead.</p> <p>-This study by Sherman&amp;Ford investigated climate change related projects while this research investigated community livelihood related projects.</p> <p>-The authors did not test hypothesis in the study. This research tested hypothesis. This helps to infer the findings to the study population.</p>
<b>Data utilization for M&amp;E</b>	<p>Cavens, Kithinji, Gakuu &amp; Kidombo 2017</p>	<p>i.) Resource Allocation, Evaluational Capacity Building M&amp;E Results Utilization Among Community Based Organizations in Meru County in Kenya</p>	<p>The study used a mixed mode approach in methodology and it was both a descriptive survey and a cross-sectional survey and used both descriptive</p>	<p>-The study showed that resources were allocated for various M&amp;E activities to a great extent. The study also noted high level of M&amp;E results utilization at project level by project employees and all the indicators of resources allocation had positive correlation with M&amp;E result</p>	<p>-This study used M&amp;E result utilization as an outcome variable with Resource Allocation, Evaluational Capacity Building as the predictor variables. The study sampled 186 respondents from a targeted population of 430 employees working in Non-Governmental organizations and other community based organizations in the Meru county. On contrary, this research used results utilization as an independent variable, result</p>



	Altschuld and Lung-Sheng Steven Lee 2013			and not much formal preparation. Also, the results supported a fit of the modified competencies to the context and convergent validity was observed but strong competency needs were not apparent.	- The context of the study by Yi Fang et al was University Evaluation Programs administered by the Higher Education Evaluation and Accreditation Council (HEEAC) of Taiwan while this research context was Bungoma County NGOs.
<b>Routine programme monitoring</b>	Yusuf and Achayo, (2017)  Wanjala, Amuhaya and Odhiambo, (2017)	i. Influence of monitoring and evaluation on performance of constituency development fund projects In Kajiado East Sub-County, Kenya  ii Influence of monitoring techniques on project performance of Kenyan State Corporations	-The study employed a descriptive survey research design  - cross-sectional survey research design	-The study found that that the level of training on M & E was of central importance to the performance public projects, second objective found that There was a high correlation between Influence of Training and Performance of Monitoring and Evaluation, Influence of Time and Performance of Monitoring and Evaluation and Influence of Strength of Monitoring Team. M & E is important for success of any project, yet it is in most Government projects they have not been able to adopt it effectively.  -Findings showed that Monitoring techniques ( $\beta_3 = 0.674, p$ ) has significant effect project performance	-This article contrasts this research in that it was conducted in Kajiado East sub-county while this research was conducted in Bungoma County.  -The article also contrast with this research in that its depended variable was Performance of Constituency Development Fund Projects while my project depended variable was sustainability of agricultural projects. - Moreover, this research variable is concerned with the influence of monitoring while this article is concerned with the influence of monitoring and evaluation.  -The article also contrast with this research in that its depended variable was performance of Kenyan State Corporations while my project depended variable was sustainability of agricultural projects.  - Moreover, this research variable is concerned with the influence of monitoring while this article is concerned with the influence of monitoring techniques
<b>Leadership competencies</b>	Mwithi, Were and Muturi (2017)  Asree, Zain and Razalli, (2009)	i.Establishing the effect of leadership competencies on performance of state corporations in Kenya  ii.Influence of leadership competency and	-cross-sectional survey research design  -cross-sectional survey research design	-Results revealed that all the leadership competencies had a positive a significant relationship with the financial performance of state corporations in Kenya. However, the magnitude of the influence was different for the specific leadership competencies. Social awareness leadership competency had the largest effect followed by self-awareness leadership competency then social skills leadership competency and finally the self-management leadership competency  - The findings indicated that leadership competency and organizational culture have	-Unlike this research which was concerned with sustainability of agricultural projects, this article was concerned with performance of state corporations. -Also, unlike this research which had NGOs as the unit of analysis, this article had state corporations to study -The title of this article was effect of leadership competencies on performance of state corporations in Kenya while my sixth objective in this research was determining how leadership competencies influence sustainability of agricultural projects in Bungoma county. -Lastly, while this research was confined in Bungoma County, this article concentrated on state corporations in entire Kenya.  -In contrast, this research was concerned with sustainability of agricultural projects, this article was concerned with performance of hotels.



		organizational culture on responsiveness and performance of firms		positive relationships with responsiveness . In addition, responsiveness has a positive relationship with hotel revenue. These findings imply that leadership competency and organizational culture are important factors for hotels to be responsive to their customers, and in turn responsiveness to customers would improve hotel revenue	-Also, unlike this research which had NGOs as the unit of analysis, this article had investigated hotels. And lastly, while this research was conducted in Kenya and specifically in Bungoma County, this article was conducted in Malaysia
<b>Sustainability of agricultural projects</b>	Ramsbottom, (2013)	i. Factors affecting social sustainability in highway projects in Missouri	-The study employed a descriptive survey research design	This article concluded that there is more emphasis on the environmental aspects of sustainability rather than the economic ones, while little emphasis is given to the social dimension	This article discussed highway projects in the construction industry. As such, this article conducted a comprehensive study to analyze the performance of highway projects with respect to the social dimension of sustainability. This research investigated the influence of M&E system on the sustainability of the agricultural projects. This research dwelled on both economic, social and environmental pillars of sustainable development. -This article was conducted in Texas while my research is in Kenya.
	Saysel, (2001)	ii. Environmental sustainability in an agricultural development project: a system dynamics approach	-The study employed a descriptive survey research design	The study revealed that, as the irrigated lands are developed, Southeastern Anatolian Project faces significant water scarcity because of the increased intensity of cotton, the crop with the highest demands for water. Simulation results also indicate that two key environmental factors, pesticide and fertilizer consumption may reach undesirable levels.	This article differs with my research in that, it investigated Environmental sustainability in an agricultural development project: a system dynamics approach, While this research was interested on how M&E influences sustainability of agricultural projects. The context of this study is in turkey while this research was conducted in Bungoma, Kenya. -The article compares with my research in that it measured sustainability development in terms of environmental, social and economic factors.
	Mwale, (2012)	iii. marketability and sustainability of food security programmes: products and productivity of agricultural projects	A mixed model approach was used to collect data from key informants and project members	-The study found that lack of monitoring mechanisms in established projects create a challenge of non-sustainability of these projects -Project products are sold to community members who accounted to 79%, and few (1%) to individuals owning business, clinics and outside the community. Project members advertised their produce mainly verbally (47.2%)	This research article was conducted in Limpopo Ghana while this research was conducted in Bungoma Kenya.  Also, this article investigated marketability and sustainability of food security programmes while this research investigated sustainability of agricultural products.

## **CHAPTER THREE**

### **RESEARCH METHODOLOGY**

#### **3.1. Introduction**

This chapter describes the research methodology that was applied to guide the study through data sourcing, processing, analysis and interpretation. The methodology aspects described herein include the research design, target population, sampling procedures, sample size, and data collection instruments. In addition, the chapter discusses the elements of validity and reliability, pre-testing of data instruments and approaches; data collection procedures, data processing and analysis techniques; as well as ethical considerations and operationalization of variables.

#### **3.2 Research Paradigm**

Pragmatism paradigm worldview was applied in this study. Pragmatism advocates the use of mixed methods in research. Pragmatism paradigm arises out of actions, situations, and consequences rather than antecedent conditions (presumptive conditions i.e, hypothesis) as in post positivism. It focuses on what works and solutions to problems Patton (1990) Instead of focusing on methods, researcher emphasizes the research problem and uses all approaches available to understand the problem (Creswell, 2003). Mixed methods approaches has become more firmly embedded in mainstream research, pragmatists link the choice of approach directly to the purpose of and the nature of the research questions posed (Creswell 2003). Under the paradigm, the study was a multi-purpose and a “what works” tactic was allow the researcher to address questions that did not fit comfortably within a wholly quantitative or qualitative approach to design and methodology. For these reasons pragmatist’s paradigm was adopted. The researcher used pragmatism because of the nature of the problem under investigation. Understanding the influence of M&E system on the sustainability of agricultural projects is rather a novel area that needs a mixed approach. This enabled the researcher best understand the research problem otherwise, the use of either quantitative or qualitative by itself would inadequate to best explore the problem under study, the strengths of both quantitative and qualitative research and its data would provide the best understanding.

The researcher intentions was to generalize the findings to a population as well as to develop a detailed view of the meaning of the phenomena under the study (sustainability of the agricultural projects). The researcher also used both approaches because of the personal experience in the both quantitative and qualitative. This study used a dichotomous and categorical questionnaire that consisted of open ended questions that would capture qualitative data, structural, yes/no and 5-level questions on agreement that would yield quantitative data.

### **3.2.1 Research Design**

The study adopted a combination of descriptive survey, cross-sectional survey and correlational design. The quantitative approach, consisting of closed-ended questions that would elicit information to be used for descriptive and inferential purposes. The qualitative approach with open-ended questions obtained in-depth information to be used to validate descriptive and inferential results (Mwanje, 2001). Across-sectional survey design is cheaper than longitudinal designs; thus, making it most appropriate for academic investigators who do not have scholarships or are limited by budgetary constraints (Rindfleisch, Malter, Ganesan and Moorma, 2008). Besides, unlike longitudinal survey designs, a cross-sectional design is not vulnerable to confounding factors such as social, political, and cultural changes because data is collected at one point in time.

Cross-sectional surveys are appropriate for studies that examine concrete and externally oriented constructs, sample highly educated respondents, employ a diverse array of measurement formats and scales, and are strongly rooted in theory (Rindfleisch et al., 2008). The correlational research design is considered appropriate for the study because the purpose of the study is to determine causality between two sets of variables (independent and dependent) as well as the influence of a third set (moderating variables) on the causal relationship. As noted by Fraenkel and Wallen (1996), correlational research design enables investigators to determine relationships between two sets of variables. Furthermore, the design is appropriate because the study tested null hypotheses to determine whether they hold true to reality or not.

### 3.3. Target Population

The target NGOs was selected in the criteria of having a functioning monitoring and evaluation unit, must have implemented an agricultural projects and lastly the NGOs must have been in operation for not less than three (3) years. The study participants included all implementers of agricultural projects as Acharya *et al*, (2016) noted, everybody involved in project implementation is also involved in the implementation of M&E, including partners. Therefore, the data source was the project officers, project volunteers, M&E officers, data entry officers and project managers, implementing agricultural projects. The study unit of analysis was all the project staff that have implemented agricultural projects in the Non-governmental organizations. The study had a target population of 243 made up of 216 subordinate staff and 27 project managers. Subordinate staff was made up of 153 Project officers, 20 M&E officers, 27 volunteers implementing agriculture projects, and 20 data entry officers from all the NGOs, also, the study had 27 project managers for qualitative data. (NGOs Finance and Administrations records for the selected NGOs, 2018). This is shown in table 3.1

**Table 3.1: Category of target population by strata**

	Target population by strata	No
1.	Project officers	153
2.	M&E officers	20
3.	Volunteers	27
4.	Data officers	16
	<b>Total</b>	<b>216</b>

### 3.4 Sample Size and Sampling Procedure

The study used probability sampling technique. This section discusses the sample size and the sampling procedure adopted in the study.

#### 3.4.1 Sample Size

The study had a sample was 140 respondents for subordinate staff implementing agricultural projects that was selected from a target population of 216 using Yamane (1967) formula and 8 project manages that was purposively selected from a target of 27

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

$$216/1+216(0.05^2)$$

$$216/1.54=140$$

n= is the required sample size

N= is the targeted sample size

e<sup>2</sup>= error limit (0.0025)

Substituting N in the above formula gives a sample size of 140 respondents.

### **3.4.2 Sampling Procedure**

To sample the respondents, stratified random sampling was used to ensure that all parts of a population are represented in the sample in order to increase the efficiency of the study (Kothari, 2009; Kotrlik and Higgins, 2001). The study used job positions (Project officers, M&E officers, volunteers, and data entry officers) held by the respondents in these organizations as strata. To have proportional representation from each stratum, a sample was drawn independently in the same ratio so as to have similar percentage of each total. Random sampling was used to ensure that each element in each stratum has equal probability to be selected for the study. Pieces of papers were written numbers equal to the elements in each stratum then random numbers selected up until the required numbers was reached as shown in the proportional allocation for each category. This process was repeated until sample from each category is selected. The study also used purposive sampling method in the case of strata that has a single participant. Researcher also used purposive sampling to select 8 project managers from a total of 27. Table 3.3 and 3.4 shows the allocation of random numbers per category and per NGO.

**Table 3.2: Proportional allocation of participants per category**

<b>The strata</b>	<b>Target population from strata</b>	<b>Proportionally allocated sample size</b>	<b>Sampling procedure</b>
Project officers	153	99	Simple random
M&E officers	20	13	Simple random
Volunteers	27	17	Simple random
Data officers	16	11	Simple random
<b>Total</b>	<b>216</b>	<b>140</b>	

### **3.5 Research Instruments**

This section gives a brief description of research instruments used in the study; pilot testing process, validity of the instrument and reliability of the instrument. The study used interview schedules for project officers, M&E officers, project volunteers and data entry officers and interview guides for project managers. Interview schedules contained seven (7) sections; section (A) which having three structured items that collected demographic information of the respondents, section (B) contained items for measuring sustainability of agricultural projects while section C items on partnerships for planning M&E, section D with items on data utilization, section E with items on human capacity for M&E, section F with items on routine programme monitoring and section G on leadership competencies. Each section contained two set of items, the first set of items was used to measure utilization of monitoring and evaluation system which would also be used to compute correlation and regression analysis with sustainability of agricultural projects and the second set of items was used to test the opinion of participants about the influence of monitoring and evaluation system on sustainability of agricultural projects. The data type in this section was majorly categorical. The items was arranged per objective and contained equal number of items (10 items) across the objective to ensure equal variance.

#### **3.5.1 Pilot Testing Research Instruments**

Pre-testing reveals what works and what does not, for instance, vague questions, and unclear instructions. It also captures key comments and suggestions from participants that would enable the investigator to improve the instruments and adjust data collection

approaches to maximize response rate (Mugenda and Mugenda, 1999). The interview schedules, and interview guides were pre-tested at the Livinggood non-profit organization in Busia to check on their suitability. Based on Mugenda and Mugenda (2003) 10% rule, 15 participants were asked to complete the interview schedules and interview guides once. 15 questionnaires were piloted by issuing to 15 randomly selected respondents. The instruments were administered to the participants with the same characteristics as the target population. Necessary adjustments such as re-statement of unclear questions and instructions; omission of irrelevant questions and grammatical errors were effected based on results, comments from respondents and new insights. The piloting of study instruments only stopped after the participants in the pilot were able to read and understand the research instruments without difficulties, which meant that the research instruments are not ambiguous or unclear.

### **3.5.2 Validity of research instruments**

Validity refers to the appropriateness, meaningfulness and usefulness of data a researcher collects using a research instrument. The questions of concern here was the interpretation of the test results, or determining if the measurements picked the expected variables without contamination from other characteristics. Traditionally validity of instruments has been determined by examining construct, content, and criterion-related concepts. Content validity is the measure of degree to which data collected using particular instrument represents a specific domain of indicators Mugenda and Mugenda (2003). This was ensured by making sure that all research items are directly derived from the indicators. Construct validity is the degree to which an instrument measures the variable it was designed to measure. DeVon et al., (2007) argues that construct validity is supported if the instrument's items are related to its operationally defined theory and concepts. This study conceptualized the variables based on literature review and theories studied by a number of researchers to validate them, thus Construct validity was assured. To ensure construct validity, this study considered the variables and their dimensions as searched in the literature (Hogan, Greenfield and Schmidt, 2001). The study then proceeded to seek opinion from the research supervisors as experts in both M&E and research to review the appropriate indicators of the variables and verify consistencies of the questionnaire with

the content area. Criterion-related validity pertains to evidence of a relationship between the attributes in a measurement tool with its performance on some other variable (DeVon et al., 2007). This criterion should possess relevance (what is judged to be the proper measure); freedom from bias (giving each subject an equal opportunity to score well) and reliability (stable or reproducible) qualities (Kothari, 2009). The results of the reliability test in the next section validate this.

### **3.5.3 Reliability of research instruments**

The reliability of a research instrument concerns the extent to which the instrument yields the same results on repeated trials (Darr, 2005). It has been argued that there can be no validity without reliability and a demonstration of validity is sufficient to establish reliability (Lincoln, 1985; Patton, 2001). Since the suitability of the instruments assessed by experts, this would increase reliability. Internal consistency indicates how well the items on a tool fit together conceptually. All the instruments was checked on how well they fit with the concepts in the area of study before piloting was done. The questionnaire was use both dichotomous and Likert-type scales to measure the indicators of each variable. Therefore after piloting, it was necessary to calculate and report Cronbach's alpha coefficient for internal consistency reliability for all the scales used (Gliem and Gliem, 2003). Alpha was calculated for each of the concepts to avoid inflating the value of alpha by including larger number of questions (Tavakol and Dennick 2011). Cronbach's alpha reliability coefficient normally ranges between 0 and 1. The closer Cronbach's alpha coefficient is to 1.0 the greater the internal consistency of the items in the scale. There seems to be general agreement that an alpha coefficient of 0.7 and above is an acceptable reliability coefficient (Nunnaly, 1978; Santos, 1999; Gliem and Gliem, 2003).



**Table 3.3: Cronbach Alpha Reliability coefficient for items testing variable characteristics in an organization**

	Reliability Coefficient Variable	No of items	Reliability coefficient
1	Sustainability of agricultural projects funded by NGO	10	0.73
2	Partnerships for planning M&E	10	0.69
3	Data utilization for M&E	10	0.78
4	Human capacity for M&E	10	0.73
5	Routine programme monitoring	10	0.77
6	Leadership competencies	10	0.72
	<b>Composite Cronbach's (alpha) reliability coefficient</b>		<b>0.74</b>

**Table 3.4: Cronbach Alpha Reliability coefficient for items testing the influence of monitoring and evaluation on sustainability of agricultural projects**

	Reliability Coefficient Variable	No of items	Reliability coefficient
1	Partnerships for planning M&E	4	0.72
2	Data utilization for M&E	3	0.70
3	Human capacity for M&E	3	0.75
4	Routine programme monitoring	5	0.68
5	Leadership competencies	10	0.79
	<b>Composite Cronbach's (alpha) reliability coefficient</b>		<b>0.72</b>

### 3.6 Data collection procedures

Data collection procedure was categorized into three parts; pre-field work, field work and post field work. In pre-field work, the researcher developed the research proposal, sought permission from various authorities including National commission for science, technology and innovation (NACOSTI), and solicit for funds to conduct the study and recruit and train five (5) research assistants. Prior to conduction of the interviews, letters expressing the desire to undertake research from the targeted organizations were dispensed.

Follow up was done through both telephone calls and emails to book appointments for the interviews. During the interviews, the researcher introduced the purpose of the research and its significance in respect to the sustainability of agricultural projects. During the post field, the researcher developed systems of questionnaire collection (interview guide), data entry and coding for interview schedule data; the questionnaires collected was checked for completeness per variable (data cleaning). A follow up exercise was conducted to ensure increased respondents questionnaire return rate by conducting re-administration of the lost interview guides.

### **3.7 Data analysis techniques**

The analysis techniques used was dictated by the type of data collected which in this study the data type was be mainly categorical. This study has two analysis techniques: descriptive and inferential techniques. Descriptive analysis was done to study distributions of variables as they presented themselves. Inferential analysis was conducted to generalize the study findings to the study population. A statistical package (SPSS 22.0) was used to determine descriptive distribution of respondents' demographic factors, inferential analysis was tested by the use of correlation and regression. Multiple regression was be used to determine the joint influence of monitoring and evaluation system dimensions on the sustainability of agricultural projects and a hierarchical multiple regression used to test how leadership competencies moderate the relationship between explanatory and response variable.

#### **3.7.1 Hypothesis testing**

Regression models was used to test the strength of the independent variables as far as their prediction strength with the dependent variable is concerned. The contribution of each of the M&E system dimensions influence on sustainability of agricultural projects was determined.

**Table 3.5: Model for Hypothesis testing**

Objective	Hypothesis	Model of testing hypothesis	Rejecting and failing to reject null hypothesis
<p>To establish the extent to which partnerships for planning M&amp;E influence sustainability of agricultural projects funded by Non-governmental organizations in Bungoma County, Kenya</p>	<p><b>Hypothesis 1:</b></p> <p><b>H0:</b> There is no significant relationship between partnerships for planning M&amp;E and sustainability of agricultural projects funded by Non-governmental organizations in Bungoma County, Kenya</p>	<p><math>\gamma = \alpha + \beta_1 X_1 + \epsilon</math></p> <p><b>Binary logistic regression</b></p> <p>y= Sustainability of agricultural projects</p> <p>a=constant (Y-intercept)</p> <p><math>\beta_1</math>= Beta coefficient</p> <p><math>X_1</math>= M&amp;E partnerships</p> <p>e= error term</p>	<p><math>P &lt; \alpha =</math> REJECT NULL</p> <p>When the p-value is less than the alpha value you reject null hypothesis, it means there is a statistically significance in the observed count. Hence alternative hypothesis is selected</p> <ul style="list-style-type: none"> <li>➤ This means that there is a difference between variables</li> </ul> <p><math>P &gt; \alpha =</math> ACCEPT NULL</p> <p>When the p-value is greater than the alpha value you accept the null hypothesis, it means there is No statistically significance in the observed count.</p> <ul style="list-style-type: none"> <li>➤ This means that there is no difference</li> </ul>

			between variables
<p>To determine the extent to which data utilization for M&amp;E influence sustainability of agricultural projects funded by Non-governmental organizations in Bungoma County, Kenya</p>	<p><b>Hypothesis 2:</b>  <b>H0:</b> There is no significant relationship between data utilization for M&amp;E and sustainability of agricultural projects funded by Non-governmental organizations in Bungoma County, Kenya</p>	<p><math>y = \alpha + \beta X + \epsilon</math>  <b>Binary logistic regression</b>  y= Sustainability of agricultural projects  a=constant (Y-intercept)  <math>\beta</math>= Beta coefficient  X= M&amp;E data utilization.  e= error term</p>	<p><math>P &lt; \alpha =</math> REJECT NULL  When the p-value is less than the alpha value you reject null hypothesis, it means there is a statistically significance in the observed count. Hence alternative hypothesis is selected</p> <ul style="list-style-type: none"> <li>➤ This means that there is a difference between variables</li> </ul> <p><math>P &gt; \alpha =</math> ACCEPT NULL  When the p-value is greater than the alpha value you accept the null hypothesis, it means there is No statistically significance in the observed count.</p> <ul style="list-style-type: none"> <li>➤ This means that there is no difference</li> </ul>

			between variables
To assess how human capacity for M&E influence sustainability of agricultural projects funded by Non-governmental organizations in Bungoma County, Kenya	<p><b>Hypothesis 3:</b>  <b>H0:</b> There is no significant relationship between human capacity for M&amp;E and sustainability of agricultural projects funded by Non-governmental organizations in Bungoma County, Kenya</p>	<p><math>y = \alpha + \beta X + \epsilon</math>  <b>Binary logistic regression</b></p> <p>y= Sustainability of agricultural projects</p> <p>a=constant (Y-intercept)</p> <p><math>\beta</math>= Beta coefficient</p> <p>X= Human capacity for M&amp;E.</p> <p><math>\epsilon</math>= error term</p>	<p><math>P &lt; \alpha =</math> REJECT NULL  When the p-value is less than the alpha value you reject null hypothesis, it means there is a statistically significance in the observed count. Hence alternative hypothesis is selected</p> <p>➤ This means that there is a difference between variables</p> <p><math>P &gt; \alpha =</math> ACCEPT NULL  When the p-value is greater than the alpha value you accept the null hypothesis, it means there is No statistically significance in the observed count.</p> <p>➤ This means that there is no difference</p>

			between variables
To examine the extent to which routine programme monitoring influence sustainability of agricultural projects funded by Non-governmental organizations in Bungoma County, Kenya	<p><b>Hypothesis 4:</b></p> <p><b>H0:</b> There is no significant relationship between routine project monitoring and sustainability of agricultural projects funded by Non-governmental organizations in Bungoma County, Kenya</p>	<p><math>y = \alpha + \beta X + \epsilon</math></p> <p><b>Binary logistic regression</b></p> <p>y= Sustainability of agricultural projects</p> <p>a=constant (Y-intercept)</p> <p><math>\beta</math>= Beta coefficient</p> <p>X=Routine programme monitoring.</p> <p><math>\epsilon</math> = error term</p>	<p><math>P &lt; \alpha =</math> REJECT NULL</p> <p>When the p-value is less than the alpha value you reject null hypothesis, it means there is a statistically significance in the observed count. Hence alternative hypothesis is selected</p> <ul style="list-style-type: none"> <li>➤ This means that there is a difference between variables</li> </ul> <p><math>P &gt; \alpha =</math> ACCEPT NULL</p> <p>When the p-value is greater than the alpha value you accept the null hypothesis, it means there is No statistically significance in the observed count.</p> <ul style="list-style-type: none"> <li>➤ This means that there is no difference</li> </ul>

			between variables
<p>To establish how combined monitoring and evaluation system influence sustainability of agricultural projects funded by Non-governmental organizations in Bungoma County, Kenya</p>	<p><b>Hypothesis 5:</b></p> <p><b>H0</b> There is no significant relationship between combined M&amp;E system and sustainability of agricultural projects funded by Non-governmental organizations in Bungoma County, Kenya</p>	<p><math>\gamma = \alpha + \beta X + \varepsilon</math></p> <p><b>Hierarchical binary logistic regression: Nested Model</b></p> <p>y= Sustainability of agricultural projects</p> <p>a=constant</p> <p><math>\beta</math>= Beta coefficient</p> <p>X= M&amp;E system dimensions</p> <p><math>\varepsilon</math>= error term</p>	<p><math>P &lt; \alpha =</math> REJECT NULL When the p-value is less than the alpha value you reject null hypothesis, it means there is a statistically significance in the observed count. Hence alternative hypothesis is selected</p> <p>➤ This means that there is a difference between variables</p> <p><math>P &gt; \alpha =</math> ACCEPT NULL When the p-value is greater than the alpha value you accept the null hypothesis, it means there is No statistically significance in the observed count.</p> <p>➤ This means that there is no difference</p>

			between variables
To assess how leadership competencies influence sustainability of agricultural projects funded by Non-governmental organizations in Bungoma County, Kenya.	<p><b>Hypothesis 6:</b></p> <p><b>H0</b> There is no significant relationship between leadership competencies and sustainability of agricultural projects funded by Non-governmental organizations in Bungoma County, Kenya</p>	<p><math>\gamma = \alpha + \beta_6 X_6 + \epsilon</math></p> <p><b>Hierarchical binary logistic regression: Nested Model</b></p> <p>y= Sustainability of agricultural projects</p> <p>a=constant</p> <p><math>\beta</math>= Beta coefficient</p> <p>X= leadership competencies</p> <p>e= error term</p>	<p>P&lt;@= REJECT NULL</p> <p>When the p-value is less than the alpha value you reject null hypothesis, it means theirs a statistically significance in the observed count. Hence alternative hypothesis is selected</p> <p>➤ This means that there is a difference between variables</p> <p>P&gt;@= ACCEPT NULL</p> <p>When the p-value is greater than the alpha value you accept the null hypothesis, it means there is No statistically significance in the observed count.</p> <p>➤ This means that there is no difference</p>



			between variables
To determine the moderating influence of leadership competencies on the relationship between monitoring and evaluation system and sustainability of agricultural projects funded by Non-governmental organizations in Bungoma County, Kenya.	<p><b>Hypothesis 7:</b></p> <p><b>H0</b> There is no significant moderating influence of leadership competencies on the relationship between M&amp;E system and sustainability of agricultural projects funded by Non-governmental organizations in Bungoma County, Kenya</p>	$\gamma = \alpha + \beta_5 x_5 + \beta_7 x_7 + \epsilon$ <p><b>Hierarchical binary logistic regression: Nested Model</b></p> <p>y= Sustainability of agricultural projects</p> <p>a=constant</p> <p>β= Beta coefficient</p> <p>X5= dimensions of M&amp;E system</p> <p>X6= leadership competencies</p> <p>e= error term</p>	<p>P&lt;@= REJECT NULL</p> <p>When the p-value is less than the alpha value you reject null hypothesis, it means theirs a statistically significance in the observed count. Hence alternative hypothesis is selected</p> <p>➤ This means that there is a difference between variables</p> <p>P&gt;@= ACCEPT NULL</p> <p>When the p-value is greater than the alpha value you accept the null hypothesis, it means there is No statistically significance in the observed count.</p> <p>➤ This means that there is no difference between variables</p>

### **3.8 Ethical Considerations**

An important aspect of research is the respect and consideration that researchers show to the participants. The researcher applied for a permit from the National commission for science, technology and innovation (NACOSTI) to carry out the research. After the permission, the researcher got clearance to collect data from the NGOs selected for the study. Participants were briefed on the research process and its purpose. They were notified that participation was be purely on voluntary terms. The respondents were assured of their right to withdraw from the interviews before end of the session if they felt offended. Again, their withdrawal shall have no negative consequences. In addition, participants were assured that information on their personal life and opinions would be handled and processed in confidentiality. Research Assistant were requested not to capture participants' names or other personal identifiers to assure confidentiality. Collected data was coded so that identifying info is eliminated. The researcher used computerized methods for encrypting data. Data was collected only from participants who met the requirement of the research.

### 3.9 Operationalization of variables

Table 3.6 shows objectives of the study, variables for various objectives, indicators to various variables, measurement Scales to various indicators, research approach and tools of analysis.

**Table 3.6: Operationalization of Variables**

Objectives	Variables	Indicators	Measurement Scales	Research approach	Data Analysis Technique	Tools of analysis
	<b>Predictor Variable</b>					
<b>1. To establish the extent to which partnerships for planning M&amp;E influence sustainability of agricultural projects funded by Non-governmental organizations in Bungoma County, Kenya</b>	Partnerships for planning M&E	<ul style="list-style-type: none"> <li>-Technical assistance from M&amp;E partners</li> <li>-Use of partnerships to fund M&amp;E activities</li> <li>- Organizational culture on partnerships</li> <li>-Partnerships strategies</li> </ul>	<ul style="list-style-type: none"> <li>• Ordinal</li> <li>• Nominal</li> </ul>	<ul style="list-style-type: none"> <li>• Qualitative</li> <li>• Quantitative</li> </ul>	<ul style="list-style-type: none"> <li>• Descriptive</li> <li>• Inferential</li> </ul>	<ul style="list-style-type: none"> <li>• Means</li> <li>• Standard deviation</li> <li>• Frequency</li> <li>• Correlation</li> <li>• Regression</li> </ul>

<p><b>2. To determine the extent to which data utilization for M&amp;E influence sustainability of agricultural projects funded by Non-governmental organizations in Bungoma County, Kenya</b></p>	<p><b>Data utilization for M&amp;E</b></p>	<ul style="list-style-type: none"> <li>- Use of data for planning</li> <li>-Use of data for decision making</li> <li>-Data sharing with stakeholders</li> </ul>	<ul style="list-style-type: none"> <li>• Ordinal</li> <li>• Nominal</li> </ul>	<ul style="list-style-type: none"> <li>• Qualitative</li> <li>• Quantitative</li> </ul>	<ul style="list-style-type: none"> <li>• Descriptive</li> <li>• Inferential</li> </ul>	<ul style="list-style-type: none"> <li>• Means</li> <li>• Standard deviation</li> <li>• Frequency</li> <li>• Correlation</li> <li>• Linear Regression</li> </ul>
<p><b>3. To assess how human capacity for M&amp;E influence sustainability of agricultural projects funded by Non-governmental organizations in Bungoma County, Kenya</b></p>	<p><b>Human capacity for M&amp;E</b></p>	<ul style="list-style-type: none"> <li>-Significance of M&amp;E qualifications in maintaining M&amp;E system</li> <li>-Significance of M&amp;E experience in maintaining M&amp;E system</li> <li>-Effectiveness of M&amp;E training programs in retaining skills</li> </ul>	<ul style="list-style-type: none"> <li>• Ordinal</li> <li>• Nominal</li> </ul>	<ul style="list-style-type: none"> <li>• Qualitative</li> <li>• Quantitative</li> </ul>	<ul style="list-style-type: none"> <li>• Descriptive</li> <li>• Inferential</li> </ul>	<ul style="list-style-type: none"> <li>• Means</li> <li>• Standard deviation</li> <li>• Frequency</li> <li>• Correlation</li> <li>• Linear Regression</li> </ul>
<p><b>4. To examine the extent to which routine programme monitoring influence</b></p>	<p><b>Routine programme monitoring</b></p>	<ul style="list-style-type: none"> <li>-Monitoring used to track project progress,</li> <li>-Impact monitoring</li> </ul>	<ul style="list-style-type: none"> <li>• Ordinal</li> <li>• Nominal</li> </ul>	<ul style="list-style-type: none"> <li>• Qualitative</li> <li>• Quantitative</li> </ul>	<ul style="list-style-type: none"> <li>• Descriptive</li> <li>• Inferential</li> </ul>	<ul style="list-style-type: none"> <li>• Means</li> <li>• Standard deviation</li> <li>• Frequency</li> <li>• Correlation</li> <li>• Linear Regression</li> </ul>

<p><b>sustainability of agricultural projects funded by Non-governmental organizations in Bungoma County, Kenya</b></p>		<p>-Outcome monitoring -Output monitoring, -Monitoring strategies</p>				
<p><b>5. To establish how combined monitoring and evaluation system influence sustainability of agricultural projects funded by Non-governmental organizations in Bungoma County, Kenya</b></p>	<p>Combined monitoring and evaluation system</p>	<p>-Evidence of application of all  - Evidence of application of any three - Evidence of application of any two - Evidence of application of one -Failure to apply any of the M&amp;E system components</p>	<ul style="list-style-type: none"> <li>• Ordinal</li> <li>• Nominal</li> </ul>	<ul style="list-style-type: none"> <li>• Qualitative</li> <li>• Quantitative</li> </ul>	<ul style="list-style-type: none"> <li>• Descriptive</li> <li>• Inferential</li> </ul>	<ul style="list-style-type: none"> <li>• Multiple regression</li> </ul>
<p><b>6. To assess how leadership competencies influence sustainability of agricultural projects funded by Non-</b></p>	<p><b>Leadership competencies</b></p>	<p>-Ability to plan -Ability to encourage -Ability to organize -delegates  -Ability to Control -recognizes -Ability to motivate - Ability inspire</p>	<ul style="list-style-type: none"> <li>• Ordinal</li> <li>• Nominal</li> </ul>	<ul style="list-style-type: none"> <li>• Qualitative</li> <li>• Quantitative</li> </ul>	<ul style="list-style-type: none"> <li>• Descriptive</li> <li>• Inferential</li> </ul>	<ul style="list-style-type: none"> <li>• Means</li> <li>• Standard deviation</li> <li>• Frequency</li> <li>• Correlation</li> <li>• Linear Regression</li> </ul>

<b>governmental organizations in Bungoma County, Kenya</b>		- Builds confidence -Appreciates their subordinate staff				
	<b>Moderating Variable</b>					
<b>7.To determine the moderating influence of leadership competencies on the relationship between monitoring and evaluation system and sustainability of agricultural projects funded by Non-governmental organizations in Bungoma County, Kenya.</b>	Leadership competencies	-Ability to plan -Ability to encourage -Ability to organize -delegates  -Ability to Control -recognizes -Ability to motivate - Ability inspire - Builds confidence -Appreciates their subordinate staff	<ul style="list-style-type: none"> <li>• Ordinal</li> <li>• Nominal</li> </ul>	<ul style="list-style-type: none"> <li>• Qualitative</li> <li>• Quantitative</li> </ul>	<ul style="list-style-type: none"> <li>• Descriptive</li> <li>• Inferential</li> </ul>	<ul style="list-style-type: none"> <li>• Hierarchical Multiple regression</li> </ul>

<b>Sustainability of agricultural projects funded by NGOs in Bungoma County, Kenya</b>	<b>Dependent Variable</b>	-Project financial viability after donor pull-out -Sustainment of staff capability after donor pull-out -Sustaining community acceptance of project after donor pull out -Availability of project sustainability strategies -Sustainment of project results after donor pull-out -Beneficiary capacity development after donor pull-out -Farming system surviving in long term in a changing economic context	<ul style="list-style-type: none"> <li>Ordinal</li> <li>Nominal</li> </ul>	<ul style="list-style-type: none"> <li>Qualitative</li> <li>Quantitative</li> </ul>	<ul style="list-style-type: none"> <li>Descriptive</li> <li>Inferential</li> </ul>	<ul style="list-style-type: none"> <li>Means Standard</li> <li>Deviation</li> <li>Frequency</li> </ul>
	Sustainability of agricultural projects					

## **CHAPTER FOUR**

### **DATA ANALYSIS, PRESENTATION, INTERPRETATION AND DISCUSSION**

#### **4.1. Introduction**

This chapter presents data analysis, presentation, interpretation and discussion of study findings in line with the study objectives. The sections within this chapter includes:- Questionnaire response rate, Demographic information of respondents, and analysis based on Key thematic and sub-thematic areas in line with the objectives of the study. The Key thematic areas were: Partnerships for planning M&E and sustainability of agricultural projects funded by Non-governmental organizations, data utilization for M&E and sustainability of agricultural projects funded by Non-governmental organizations, human capacity for M&E and sustainability of agricultural projects funded by Non-governmental organizations, routine programme monitoring and sustainability of agricultural projects funded by Non-governmental organizations, the researcher also looked at the combined monitoring and evaluation system and sustainability of agricultural projects funded by Non-governmental organizations, leadership competencies and sustainability of agricultural projects funded by Non-governmental organizations and moderating influence of leadership competencies on the relationship between monitoring and evaluation system and sustainability of agricultural projects funded by Non-governmental organizations.

#### **4.2 Questionnaire return rate**

The researcher was interested in knowing about the questionnaires return rate. This owes to the fact that the return rate determines whether bias exists or does not. Nevertheless it was of importance because declining survey participation rates threaten the source of information and its perceived utility and thereby allowing for biasness in the data collected, (National Research Council, 2013). Research participant were: Project officers 99, M&E officers 13, volunteers 17 and data officers 11. Project officers, M&E officers, volunteers, and data officers were given questionnaires to fill while data from project managers was collected by the use of interview guide. This was presented as in table 4.1.



**Table 4.1: Questionnaire Return Rate**

Questionnaire	Number	Percentage
Delivered	140	100
Returned	137	98
Not Returned	3	2

Out of 140(100%) questionnaires that were delivered, 137(98%) were returned duly filled. 3(2%) were not returned. The researcher made several attempt to have the 3 questionnaires returned but it was unsuccessful. 98% was thought to be adequate enough for the study.

### **4.3 Demographic characteristics of respondents**

The study was interested in the assessing background characteristics of the participants, the researcher sort to check on the distribution of participant's age, gender, and years of service in the organization.

#### **4.3.1 Age of the respondents.**

Respondents were asked to indicate their age group in years. This was done to ascertain that respondents were normally distributed in respect to age since an individual's age was not a consideration in the selection of respondents in this study. Age groups were classified into five categories: 18-25, 26-35, 36-45, 46-55 and above 55 years. Responses on age are shown in table 4.2

**Table 4.2: Distribution of respondents by age**

Age	Frequency	Percent
18-25	9	3.8
26-35	34	14.4
36-45	65	27.5
46-55	18	7.6
Above 55 years	11	4.7
Total	137	58.1

The research findings on age of participants indicate that 9(6.6%) of the respondents were between the ages of 18 and 25 years; 34(24.8%) between 26 and 35 years; 65(47.4%) of the respondents between 36 and 45 years; 18(13.1%) of the respondents between 46 and 55 years while 11(8%) of the respondents between above 55 years. That 91.9% of the respondents were 55 years and below implies that majority of the respondents were at their productive age as employees and therefore in respect to sustainability of agricultural projects in non-governmental organizations, age of the respondents would be an insignificant factor. Therefore in determination of the influence of the monitoring and evaluation system on sustainability of agricultural projects funded by NGOs, other factors other than respondents' age were under consideration in this study.

#### 4.3.2 Gender of the respondents

Researcher sought establish whether or not respondents were males or females. This was done to establish that respondents were normally distributed between the two genders because in this study, none of the gender was given preferential consideration in the selection of respondents. Responses on gender are shown in table 4.3

**Table 4.3: Distribution of respondents by gender**

		Frequency	Valid Percent
Valid	Female	65	47.0
	male	72	53.0
	Total	137	100.0

Results on participants gender indicated that 65(47%) of the respondents were females while 72(53%) were males. This indicates that non-governmental organizations had complied with the requirement of employment of balancing the gender or be at least 30% of either gender (GOK, 2012). Respondents in this study were skewed favorably in respect to gender spread which enhanced the quality of the analysis of results given that the study was guided by pragmatism research paradigm which Anthony (2004) indicates as the best suited paradigm for mixed methods research design in that it incorporates multiple realities in research like the gender factor.

### 4.3.3 Years of experience

The study was interested in establishing the distribution of respondents by years of service in the current organization, this was done to ascertain that respondents were knowledgeable about the organization they were responding about in respect to the influence of monitoring and evaluation system on sustainability of agricultural projects moderated by leadership competencies. Responses on years of experience are shown in table 4.4

**Table 4.4: Distribution of respondents by year of service in the current organization**

Experience in years	Frequency	Percent	Valid Percent
1 – 5	20	8.5	14.6
6 – 10	85	36.0	62.0
11 – 15	18	7.6	13.1
Over 15 years	14	5.9	10.2
<b>Total</b>	<b>137</b>	<b>58.1</b>	<b>100.0</b>

The results on number of years in the current organization indicated that 20(14.6%) of the respondents had worked in their current organization for between 1 to 5 years; 85(62%) had worked for between 6 to 10 years, then 18(13.1%) had worked for between 11 to 15 years and 14(10.2%) had worked for over fifteen years. The results showed that many respondents had worked in the this organizations for more than five years which was considered in this study sufficient to make objective responses on the monitoring and evaluation system and sustainability of agricultural projects.

### 4.4 Tests for Statistical Assumptions and Analysis of Likert-Type Data

Pedace (2013) indicates that violation of statistical assumptions can invalidate statistical assumptions. This section shows how tests of normality, controlling for type 1 and type 11 error, linearity, multicollinearity, singularity, homoscedasticity and heteroscedasticity were carried out which occur due to the wrong interpretation of results during tests of various statistics were controlled. In addition, the usage of the Likert Scale in data analysis is also explained in this section

#### 4.4.1 Tests for Normality

The normal distribution is a descriptive model that describes the real world situation. It's a continuous frequency distribution of infinite range- it can take any values not just integers as in the case of binomial and poisson distribution. Regression analysis assumes that data collected for dependent variables assumes normal distribution (Moriya, 2008). Violation of this assumption would therefore invalidate regression analysis. In this study, Kolmogorov-Smirnov test statistic (KS-test) and Shapiro-Wilk test (SW-test) were carried out to ascertain whether the research data was collected from a normal population. Kolmogorov-Smirnov test statistic (KS-test) determines if two datasets differ significantly without making any assumption about the distribution of data. To achieve normally distributed data for all variables, the researcher used arithmetic Log10 to transform data that was positively skewed to a more normal distribution though not perfectly normal. Data did not have negative values, no negative skewness and there was no values of zero in the data distribution. Results for tests of normality is shown in table 4.5

**Table 4.5: Tests of Normality**

	Kolmogorov-Smirnov <sup>a</sup>			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	Df	Sig.
Sustainability of agricultural projects	.080	137	.062	.981	137	.056
Partnerships for planning M&E	.063	137	.200*	.985	137	.131
data utilization for M&E	.064	137	.200*	.992	137	.679
human capacity for M&E	.128	137	.070	.963	137	.071
routine programme monitoring	.057	137	.200*	.994	137	.844
leadership competencies	.068	137	.200*	.988	137	.255

\*. This is a lower bound of the true significance.

a. Lilliefors Significance Correction

Table 4.5 shows the following values for Kolmogorov-Smirnov: Sustainability of agricultural projects funded by non-governmental organizations had a value of .080, with sig level of .062, partnerships for planning M&E had a value of .064 with sig value of .200, data utilization for M&E had a value of .063 with sig value of .200, human capacity for M&E had value of .128 with sig value of .070, routine programme monitoring had a value of .057 with sig value of .200 while leadership competencies had a value of .068 with sig value of .200. Shapiro-Wilk had the following results: Sustainability of agricultural projects funded by non-governmental organizations had a value of .981, with sig level of .056, partnerships for planning M&E had a value of .985 with sig value of .131, data utilization for M&E had a value of .992 with sig value of .679, human capacity for M&E had value of .963 with sig value of .071, routine programme monitoring had a value of .994 with sig value of .844 while leadership competencies had a value of .988 with sig value of .255. This shows that all Kolmogorov-Smirnov values had significant values which was greater than 0.05, which means that null hypothesis is not rejected hence implying that data was not statistically different from normal distribution since null hypothesis states that the calculated value for the variable is not statistically different from a normal distributed data, this means that rejecting null hypothesis would mean that data is not normally distributed. Null hypothesis is not rejected for Shapiro-Wilk test as well since the significant level values of the Shapiro-Wilk was .056, .131, .679, .071, .844 and .255 which are all greater than .05.

#### **4.4.2 Tests for Multicollinearity and Singularity**

Linear assumptions of singularity and multicollinearity were also checked before undertaking regression analysis through correlations and residual tables generated by SPSS. During data analysis, singularity occurs when an independent variable is formed from a combination of other independent variables. On the other hand, multicollinearity is checked by analyzing the tolerance values under collinearity to ensure that the assumption is not violated (Asteriou and Hall, 2011). In particular,  $1 - R^2$  values should be more than 0.1 which implies low multicollinearity (Shirley et al., 2005). If two variables are perfectly collinear, singularity is said to exist and an exact linear relationship exists between the two predictor variables with a correlation coefficient equal to 1.0 or -1.0. On the other hand,

Pedace (2013) argues that multicollinearity occurs when the correlation coefficient of two predictor variables is equal to or greater than 0.7. Also, according to Hair et al. (2010), VIF should be lower than 10 and according to Menard (1995) a tolerance of less than 0.10 almost certainly indicates a serious multicollinearity problem. According to Cooper and Schindler (2003) collinearity is where two independent variables are highly correlated while multicollinearity is where more than two independent variables are highly correlated. This would have a negative effect on multiple regressions which would make it risky to interpret the coefficient as an indicator of the relative importance of predictor variables. The regression model for joint influence of monitoring and evaluation system and the key are the following:

$$Y = \beta\theta + \beta_1x_1 + \beta_2x_2 + \beta_3X_3 + \beta_4x_4 + \beta_6x_6 + \beta_7x_7 + \varepsilon$$

- $\beta\theta$** .....Constant
- $\beta_1$** .....Coefficient of X1
- $\beta_2$**  .....Coefficient of X2
- X1**.....Partnerships for planning M&E
- X2**.....Data utilization for M&E
- X3**.....Human capacity for M&E
- X4**..... Routine programme monitoring
- X5**.....Combined monitoring and evaluation system (Not in the equation)
- X6**.....Leadership competencies
- X7**..... Moderating influence of leadership competencies
- $\varepsilon$** .....Error
- Y**.....Outcome variable

In a multiple regression, the researcher expects to observe how Y relates to  $x_1$  and  $x_2$  to  $x_7$  combined but within the assessment, the researcher was also interested in learning the influence of individual explanatory variables for instance  $x_1$  on Y without  $x_2$  being a meddler and the same way the researcher was also interested in learning how  $x_2$  influences Y without  $x_1$  being a disturbing factor. Therefore, taking example of  $\beta_1$ , we say that it is partial derivative ( $\frac{\partial y}{\partial x}$ ,) which is considered partial Y and partial  $x_1$  while  $x_2$  is held constant. In other words  $\beta_1$  tells us what the influence of  $x_1$  on Y provided that other

predictor variables are held constant In the equation of multiple regression, we expect that the predictor variables are independent of one another. We assume that  $x$  has a unique information about  $y$ . However, other than learning about how  $y$  is influenced by a single predictor variable, the researcher was also interested in finding out how the  $Y$  is influenced by joint predictor variables.

Some of the effects of multicellularity are: firstly, the variances and therefore standard errors of the regression coefficient estimators i.e.  $\beta_1, \dots, \beta_2, \dots, \beta_7$  are inflated. They was be larger than they are supposed to be so that when calculating the t-statistics for each regression coefficient eg  $\beta_1$  it was be equal to the value of that coefficient divided by standard error of the coefficient. Note that  $\sqrt{VarB1} = \text{standard error}$ .

$$T \text{ statistic of } \beta_1 = \frac{\beta_1}{\text{standard error of the coefficient } \beta_1}$$

If multicollinearity is present, the standard errors was be larger hence when divided by the regression coefficient, the T- statistics was be small which can cause failing to reject null hypothesis or causing accepting of null hypothesis which means that you wrongly fail to find a statistically significant difference or relationship on variables. This means that multicollinearity increases type II error. Another effect of multicollinearity is on the size of the coefficients itself. The size of the coefficient was be smaller than expected if multicollinearity existed, also multicollinearity can cause the reverse in the sign of the coefficient in that if the researcher expects positive relationship between variables, we would instead get a negative value of the coefficient. Lastly, the F-statistic which is the measure of the entire regression model can be statistically significant but the T-statistics which measures the significance of the individual variables with respect to their coefficients  $\beta$  may not be significant.

Correlations among predictors were first conducted to give the research a rough idea of the presence or absence of inter-correlations after which variation Inflation Factor (VIF) and tolerance were determined. Casual empirical examination of correlation ( $r$ ) for each pair of X- variables was conducted so that if any of the r-values of the pair is statistically different

from zero then we conclude that there is some kind of serial inter-correlations or we may conclude that the X-variables present are collinear.

$$r = \frac{\text{Covariates } x1 \dots x2 \dots x7}{\sigma_1 \sigma_2 \dots \sigma_7}$$

To determine whether there was multicollinearity, correlations among predictors were first conducted to give the researcher a rough idea of the presence or absence of inter-correlations after which variation Inflation Factor (VIF) and tolerance were determined. Results of inter-correlations between predictor variables is shown in table 4.6

**Table 4.6: Correlations of predictor variables**

		<b>Correlations</b>				
		Partnershi ps for planning M&E	DataUtiliz ation_tran sformed_ Log10	Human capacity for M&E	Routine program monitoring	Leadershi p_compet encies_tra nsformed_ Log10
Partnerships for planning M&E	Correlation	1.000	.110	.169*	.282**	.173*
	Coefficient	.	.202	.148	.071	.063
	Sig. (2-tailed)					
	N	137	137	137	137	137
DataUtilization_transform ed_Log10	Correlation	.110	1.000	.333**	.107	.048
	Coefficient	.202	.	.070	.213	.581
	Sig. (2-tailed)					
	N	137	137	137	137	137
Human capacity for M&E	Correlation	.169*	.333**	1.000	.232**	.105
	Coefficient	.148	.070	.	.058	.223
	Sig. (2-tailed)					
	N	137	137	137	137	137
Routine program monitoring	Correlation	.282**	.107	.232**	1.000	.349**
	Coefficient	.071	.213	.058	.	.052
	Sig. (2-tailed)					
	N	137	137	137	137	137
Leadership_competencies _transformed_Log10	Correlation	.173*	.048	.105	.349**	1.000
	Coefficient	.063	.581	.223	.052	.
	Sig. (2-tailed)					
	N	137	137	137	137	137

\*. Correlation is significant at the 0.05 level (2-tailed).

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



Table 4.6 shows an empirical examination of multicollinearity through correlation of predictor variables with each other as the first step. The results found that no relationship among the variables was statistically significant. Which is the first sign to show a probability of absence of multicollinearity. Also, results showed a relationship of between very weak and weak correlation among the variables: Partnerships for planning M&E had a correlation of .110 with data utilization for M&E, a correlation of .169 with human capacity for M&E, a correlation of .282 with routine program monitoring and a correlation of .173 with leadership competencies. Data utilization for M&E had a correlation of .110 with partnerships for planning M&E, a correlation of .333 with human capacity for M&E, a correlation of .107 with routine program monitoring and a correlation of .048 with leadership competencies. Human capacity for M&E had a correlation of .169 with partnerships for planning M&E, a correlation of .333 with data utilization for M&E a correlation of .232 with routine program monitoring and a correlation of .105 with leadership competencies. Routine program monitoring had a correlation of .282 with partnerships for planning M&E, a correlation of .107 with data utilization for M&E a correlation of .232 with human capacity for M&E and a correlation of .349 with leadership competencies. Lastly, Leadership competencies had a correlation of .173 with partnerships for planning M&E, a correlation of .048 with data utilization for M&E, and a correlation of .105 with human capacity for M&E.

After observing the inter-correlations, the researcher was interested in further test for multicollinearity using a more exhaustive method to test variance inflation factor (VIF) and tolerance This is shown in table 4.5. Multicollinearity exist if variance inflation factor is  $> 5$ . For instance, a VIF of 10 means that variance of coefficient is 10 times what it should be if collinearity did not exist. Variance inflation factor is the reciprocal of tolerance, the researcher used a rule of thumb that states that the value of tolerance should be  $> 0.2$ , this means that  $< 0.2$  was be an indication of multicollinearity. To justify the VIF cut off using tolerance value, the researcher worked out the reciprocal of tolerance which is  $\frac{1}{0.2} = 5$

$$VIF = \frac{1}{1 - R^2}$$

By running a VIF, this means that the researcher was be running a regression of each predictor variable against each other

For instance, in a regression model.

$$Y = \beta\theta + \beta_1x_1 + \beta_2x_2 + \beta_3X_3 + \beta_4x_4 + \beta_6x_6 + \varepsilon$$

$R^2$  Which is coefficient of determination that measures goodness of fit is obtained by regressing all predictor variables. The sixth variable  $\alpha_6\chi_6$  is not part of monitoring and evaluation system components that was be enjoined in a combined influence of predictors on the sustainability of agricultural projects funded by non-governmental organizations in the multiple regression, however, it is regressed with others because it is one of the predictor variables and it should also be checked for multicollinearity.

$$\chi_1 = \alpha\theta + \alpha_2\chi_2 + \alpha_3\chi_3 + \alpha_4\chi_4 + \alpha_6\chi_6 + e$$

$$\chi_2 = \alpha\theta + \alpha_1\chi_1 + \alpha_3\chi_3 + \alpha_4\chi_4 + \alpha_6\chi_6 + e$$

$$\chi_3 = \alpha\theta + \alpha_1\chi_1 + \alpha_2\chi_2 + \alpha_4\chi_4 + \alpha_6\chi_6 + e$$

$$\chi_4 = \alpha\theta + \alpha_1\chi_1 + \alpha_2\chi_2 + \alpha_3\chi_3 + \alpha_6\chi_6 + e$$

$$\chi_6 = \alpha\theta + \alpha_1\chi_1 + \alpha_2\chi_2 + \alpha_3\chi_3 + \alpha_4\chi_4 + e$$

**Table 4.7: Tolerance and VIF coefficients**

El	Collinearity Statistics	
	Tolerance	VIF
Partnerships for planning M&E	.903	1.107
DataUtilization_transformed _Log10	.806	1.241
1 Human capacity for M&E	.686	1.457
Routine program monitoring Leadership	.734	1.362
competencies_transformed_ Log10	.852	1.173

a. Dependent Variable: Sustainability of agricultural projects

Table 4.7 shows a value of .903 for tolerance and 1.107 VIF for the partnerships for planning M&E predictor variable. A value of .806 for tolerance and 1.241 VIF for data utilization for M&E. The third variable which is human capacity for M&E had a tolerance value of .686 and VIF value of 1.457, the fourth variable which was routine program monitoring had a tolerance value of .734 and VIF value of 1.362 and lastly, the fifth variable which was Leadership competencies had a tolerance value of .852 and VIF value of 1.173. The results show that there was no multicollinearity the fact that all the values of predictor variables had tolerance values of  $> 0.2$  and VIF values of  $< 5$

#### 4.4.3 Tests for Homoscedasticity and Heteroscedasticity

In statistics, heteroskedasticity (or heteroscedasticity) happens when the standard errors of a variable are non-constant with increase in the number of explanatory variables or when monitored over a period of time. With heteroskedasticity, the researcher used scatter plots for the first test of heteroskedasticity. Heteroskedastic data would show residual errors scattering out over with an addition of explanatory variables. To do this, the researcher plotted Z-residuals on y-axis and predicted values of the outcome variables on the X axis

**Figure 3: Scatter plot and Histogram for heteroscedastic test**

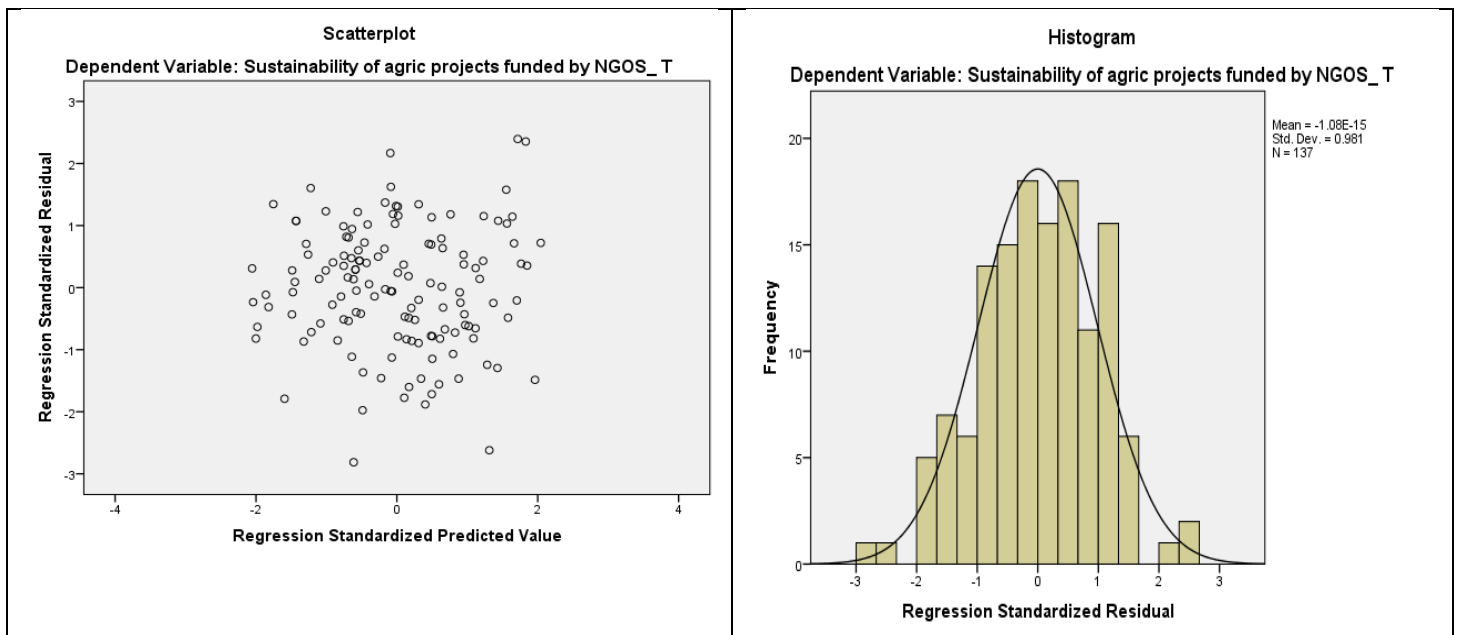


Figure 3: shows scatter plot and a histogram for heteroscedastic test. The scatter plot shows that the residual do not spread out with increase in the number of predictor variables. The histogram shows a normal distribution which supports the scatter plot findings. Further analysis for homoscedasticity was tested in table 4.8 using Breusch-pagan test. The idea of homoscedasticity is that the values of residual values do not increase with increase in the values of independent variable. This means that the predictor variables does not affect the residual values and the data is homoscedastic if P-value is  $>0.05$

**Table 4.8: Breusch-Pagan and Koenker test for the model**

OLS outputs with heterocedasticity-robust standard errors								
	<b>b</b>	<b>Se</b>	<b>T</b>	<b>Sig</b>	<b>95%LB</b>	<b>95%UB</b>	<b>Conclusion</b>	<b>Analysis Table</b>
Constant	.450	.045	10.000	.060	.351	.550		
Partnerships for planning M&E	.014	.046	.293	.770	-.078	.105	Data is homoscedastic	
Data utilization for M&E	-.189	.076	-2.472	.075	-.343	-.035	Data is homoscedastic	
Human capacity for M&E	-.157	.065	-2.394	.818	-.310	-.003	Data is homoscedastic	
Routine program monitoring	.097	.065	1.484	.540	-.039	.233	Data is homoscedastic	
Leadership competencies	.003	.041	.068	.946	-.089	.095	Data is homoscedastic	

\* Note: standard error is HC4 varian.

\*Dependent Var: Sustainability of agricultural projects

**Table 4.9: Statistical significance for Breusch-Pagan and Koenker test**

---

Breusch-Pagan and Koenker test statistics and sig-values -----		
	LM	Sig
BP	9.537	.089
Koenker	9.639	.086

---

Null hypothesis: heteroskedasticity not present (homoscedasticity).

If sig-value less than 0.05, reject the null hypothesis.

Note: Breusch-Pagan test is a large sample test and assumes the residuals to be normally distributed.

The null hypothesis in Breusch-pagan test states that data is homoscedastic while alternative hypothesis states that data is heteroskedastic. The test for the model using Breusch-pagan had a significant value of 0.089 while Koenker test had a significant value 0.086 both of which was  $>0.05$  confirming that the model is homoscedastic. Table 4.7 shows significant values of Breusch-Pagan for individual predictor variables as regressed with outcome variable.

#### **4.4.4 Control of Type I Error and Type II Error**

For statistical findings to be valid, a researcher has to control Type I and Type II errors which occur due to the wrong interpretation of results during tests of various statistics. Type I error occurs when the null hypothesis is rejected when it was supposed to be accepted. The type I error is also known as the false positive error. In other words, it falsely infers the existence of a phenomenon that does not exist while Type II error occurs when the null hypothesis is accepted when it was supposed to be rejected. Type I and Type II error are inversely related in that, if the researcher decreased the chances of making type I error then the chances of making type II error would increase, therefore, the researcher endeavored to strike a balance between making both types of error. This was made by using 0.05 as the minimum accepted error, it means that if null hypothesis is true the researcher would reject 5 out of 100 trials. Reducing significance level from 0.05 to 0.01 would only avoid type I error but would also increase the chances of making type II error (Larry, 2013).

#### **4.4.5 Analysis of Likert-Type Data**

The interpretation of research findings by use of Likert Scale determine the accuracy of results. In the use of an interview schedule in this study, six of the sections comprised of items in a Likert type scale format using a scale of SD – Strongly Disagree; D – Disagree; N – Neutral; A – Agree; and SA – Strongly Agree as recommended by Alan (2001). The items in the Likert Scale were both confirmatory and negation statements. The items that were phrased in negation were done so to keep both the respondents and research assistant alert while responding to the research instruments and posing the statements, however, during the data analysis by use of SPSS, the scale was reversed for the negatively phased statements to ensure uniformity in computation of both descriptive and inferential analysis. Sustainability of agricultural projects funded by NGOs had ten (10) Likert items, partnerships for planning M&E had eleven (10), data utilization for M&E had eleven (10) Likert item, human capacity for M&E had seven (10), routine programme monitoring had 10 while leadership competencies had 10 items of Likert nature. Frauke et al. (2008) argue that when a questionnaire is too lengthy, the response rate is low and the quality of the responses is compromised. An endeavor by the researcher to increase response rate was the use of five (5) well trained research assistants for data collection through interview schedule tool. Frauke et al. (2008) propose that ten (10) objectively constructed items for each research variable in a Likert type scale are sufficient to measure a desired construct where mathematical modelling is involved in data analysis thus necessitating the need for coalescing indicators of various variables.

In the study on equidistance of Likert-type scales and validation of inferential methods using experiments and simulations, Lantz (2013) indicates that Likert-type data are often assumed to be equidistant by applied researchers so that they can use parametric methods to analyse the data. Since the equidistance assumption is rarely tested, Lantz (2013) argues that the validity of parametric analyses of Likert-type data is often unclear and that the preferred statistical method to analyse Likert-type data depends on the nature of their non-equidistance as well as their skewness. Carifio and Rocco (2007) stated that Likert Scales as opposed to single Likert response format items produce interval data. In addition, during

analysis of Likert-type data, therefore in this study Strongly Disagree (SD)  $1 < SD < 1.8$ ; Disagree (D)  $1.8 < D < 2.6$ ; Neutral (N)  $2.6 < N < 3.4$ ; Agree (A)  $3.4 < A < 4.2$ ; and Strongly Agree (SA)  $4.2 < SA < 5.0$ . This scale gave an equidistance of 0.8. This weighting criteria of responses of Likert-type data advanced by Carifio and Rocco (2007) were followed in data analysis in this study in the interpretation of results obtained by use of Likert scale. The same scale was used successfully by (Nganga 2014), (Seboru et al 2016), (Obare et al 2016) and (Kikwatha, 2018)

#### **4.5 Sustainability of agricultural projects funded by NGOs**

This was the outcome variable of the study as informed by the existing empirical literature and the related theories, the following indicators were considered to measure sustainability of agricultural projects: Project financial viability after donor pull-out, sustainment of staff capability after donor pull-out, sustaining community acceptance of project after donor pull out, availability of project sustainability strategies, sustainment of project results after donor pull-out, beneficiary capacity development after donor pull-out, and farming system surviving in long term in a changing economic context. To measure sustainability of agricultural projects indicators provided, ten items (10) were developed in section B of the questionnaire. Data from interview schedules were collected and analyzed and results triangulated with the results from interview guides. The respondents were asked to rate the statements on the scale of 5 in which 1 denoted strongly disagree, 2 disagree 3 neutral 4 agree and 5 strongly agree. The following scoring was also used: (SD:  $1 < SD < 1.8$ ), (D:  $1.8 < D < 2.6$ ), (N:  $2.6 < N < 3.4$ ), (A:  $3.4 < A < 4.2$ ) and (SA:  $4.2 < SA < 5.0$ ). The mentioned scales give an equidistance of 0.8. Results are presented in table 4.10

**Table 4.10: Distribution of responses on the sustainability of agricultural projects funded by NGOs**

<i>Items</i>	<i>N</i>	<i>Mean</i>	<i>Standard deviation</i>
4a <i>The organization has strategies to retain financial viability of projects after donor pull-out</i>	137	1.9270	1.15450
4b <i>After donor pull-out, the organization have effective strategies to retain the staff skills obtained from the project</i>	137	3.3869	1.20201
4c <i>The organization have effective strategies to maintain community acceptance of projects after donor pull out</i>	137	3.5036	1.02988
4d <i>The organization has project Sustainability strategies</i>	137	2.8467	1.33885
4e <i>There are strategies to retain project results after donor pull out</i>	137	3.6350	1.34425
4f <i>After project termination, the organization has effective strategies to retain beneficiary skills required for their capacity empowerment.</i>	137	2.3869	1.23222
4g <i>The organization has strategies to ensure farming systems of beneficiaries survives in long term despite changing economic context</i>	137	2.0584	0.88090
4h <i>The organization has effective strategies to ensure project sustainability</i>	137	1.9708	1.25406
4i <i>Beneficiaries' farming systems survives in long term despite changing economic context</i>	137	1.6277	1.09818
4j <i>The organization has effective strategies to retain financial viability of projects after donor pull-out</i>	137	1.3650	1.04231

Table 4.10 shows ten items that measure sustainability of agricultural projects, the table presented means and standard deviations. Item 4a sought to establish the extent to which organizations possessed strategies to retain financial viability of projects after donor pull-out. This results had a mean of 1.9270 and standard deviation of 1.15450. The mean shows that there was general disagreement by the participants that organizations had strategies to retain financial viability of projects after donor pull-out, which means that organizations did not have strategies to retain financial viability of projects after donor pull-out. The same results had data values or scores with small variance from the mean as shown by a small standard deviation of 1.15450 which means that data is not highly spread out from the mean. This indicates that there was consensus in this result among the participants because



of the consistency of responses from participants. This result was supported by the words of one of the project managers who said the following:

*“.....The organization solely depends on the donor funds to implement any activity... When donor funds are unavailable, then we can only wait upon the outcomes from the outputs already achieved....no new activities can be undertaken after donor pull out.....”*

This qualitative result provides more evidence on lack of project sustainability which agrees with the work of (Oino, Towett, Kirui, & Luvega, 2015) which indicated that majority of agricultural projects have generally been unsuccessful to bring sustainable benefits to the target groups. This research agrees with a research conducted by (EKBOM, KNUTSSON, & OVUKA, 2001) which stated that farmers' ability and willingness to invest in sustainable land management practices are hampered by the limited access to capital.

Item 4b sought to establish whether organizations had effective strategies after donor pull-out to retain the skills that the staff obtained from the project. Therefore, the result had a mean of had a mean of 3.3869 and standard deviation of 1.20201. The mean shows that there was general agreement by the participants that organizations had effective strategies to retain the staff skills obtained from the project after donor pull-out. Participants agreed that organizations had effective strategies to retain the staff skills obtained from the project after donor pull-out although the mean was on the lowest limit. The same results had data values or scores with a big variance from the mean as shown by a large standard deviation of 1.20201 which means that data is highly spread out from the mean. This indicates that there was no complete consensus in this result among the participants because of the lack of consistency of responses from participants. Further analysis from a project manager in an open ended response stated the following:

*“The only way project staff can retain the skills obtained from previous project in this organization is through implementation of similar projects... After-all, they have been implementing projects with similar strategies for years now, which I think should not only retain but also improve their skills. Otherwise, as an organization, we do not have specific strategies to ensure skill retention or improvement.*

This result agrees with the quantitative data on one part when the participant said that skills can be retained through implementation of similar project. However, lack of consistency in the quantitative data as shown by a large standard deviation can be supported by the quantitative data when the project managers declared that the organization did not have specific strategies to ensure skill retention and improvement. Item 4c sought to establish the effectiveness of strategies that maintain community acceptance of projects after donor pull out. Therefore, the result had a mean of 3.5036 and standard deviation of 1.02988. The mean showed that there was general agreement by the participants that organizations had effective strategies that maintains community acceptance of projects after donor pull out. The same results had data values or scores with a small variance from the mean as shown by a small standard deviation of 1.02988 which means that data was not spread out from the mean. This indicates that there was high consensus in this result among the participants because of consistency of responses from participants.

Item 4d sought to establish whether organizations had project sustainability strategies. This results has a mean of 2.8467 and standard deviation of 1.33885. The mean showed that participants were of neutral opinion about organizations having project sustainability strategies. The same results had data values or scores with a big variance from the mean as shown by a large standard deviation of 1.33885 which means that data is highly spread out from the mean. This indicates that there was no complete consensus in this result among the participants because of the lack of consistency of responses from participants. Researcher was interested in determining the distribution of responses in terms of frequencies. It was found that out of 137 participants, 68 said that organizations did not have project sustainability strategies 10 were of neutral opinion while 59 said that

organizations had project sustainability strategies. From this results, it can be noted that even though the mean suggested a neutral opinion, majority of the respondents did not believe that organizations had project sustainability strategies. When asked about sustainability of agricultural projects, one of the project managers said the following:

*“.....We have a lot of good strategies to ensure that projects are sustained even after the exit of donors, however, this are just on papers....the strategies are never implemented...the strategies are simply documented because it's a requirement by funding agencies during application for grants...”*

This qualitative result clarifies the quantitative data which, with low consistency of results, found that organizations did not have project sustainability strategies. Qualitative result clarified that the lack of consistency in the participants responses might have occurred due availability of documented project sustainability strategies which were ineffective. The qualitative result states that strategies were only present on papers but the strategies were never utilized which might cause participants to have varied opinion. This result agrees with the work of (Oino, Towett, Kirui, & Luvega, 2015) which stated that although numerous projects highlight fundamentals of sustainability in their proposal stage, the actual implementation still seems to lack emphasis on sustainability.

Item 4e sought to establish availability of strategies to retain project results after donor pull out. This results had a mean 3.6350 and standard deviation of 1.34425. The mean showed that participants generally agreed that organizations had strategies to retain project results after donor pull out. The same results had data values or scores with a big variance from the mean as shown by a large standard deviation of 1.34425. Which means that data is highly spread out from the mean. This indicates that even though there was general agreement with the statement, there was no complete consensus that strategies to retain project results were available after donor pull out. When asked whether or not results are still realized even after donor pull out, one of the project managers said the following:

*“.....Despite having good strategies on paper to ensure that projects results are sustained even after the exit of donors, sustainability of project results is never attained...the end of projects simply means the end results tracking. After all, there are no funds for tracking results after project has ended”*

This qualitative result clarifies the quantitative information, while quantitative result found that there were strategies to retain project results after donor pull out, qualitative results found that project results are never sustained after donor exit. Qualitative results also gave an in-depth understanding of what might be the reason behind project manager's opinion on lack of sustainment of result by saying that there are no funds for tracking results after project has ended and that end of project means end of result tracking. Qualitative results also inform us that strategies to retain project results after donor pull out are just on papers but not implemented upon, this explains why item 4e had a high mean of 3.6350. Just like item 4d which also found that project sustainability strategies were also only documented on papers due to donor requirements but never implemented upon. It can also be said that project manager's opinion which was also shared by other project managers represents variety of opinions as shown by large standard deviation of 1.34425.

This result agrees with the work (Kikwatha, Kyalo, Mulwa, & Nyonje, 2018) which also found that Majority 147(78.2%) agreed with the statement that dairy goat project can continue without external financial and technical support, the result had a mean score (M) = 3.97 and a standard deviation (STD) = 0.620 indicating that dairy goat project can continue without external financial and technical support. However, this result differed from the FGD result as the participants indicated that they would require financial and technical support from donors and the government for the project to continue successfully. Government officials interviewed indicated that without donor funding, the project may not be sustainable since the government financial allocation to dairy goat production sector is insufficient and cannot adequately support the projects.

Item 4f sought to establish whether organization has effective strategies to retain beneficiary skills required for the capacity empowerment after donor pull out. This results

has a mean 2.3869 of and standard deviation of 1.23222. The mean showed that there was general disagreement by the participants that organizations had strategies to retain beneficiary skills required for their capacity empowerment after project termination. This shows that organizations did not have effective strategies to retain beneficiary skills required for the capacity empowerment after donor pull out. This result did not have consistency as the responses were spread away from the mean as shown in the larger value of standard deviation.

Item 4g sought to establish availability of effective strategies to ensure farming systems of beneficiaries survives in long term. This results had a mean 2.0584 of and standard deviation of 0.88090. The mean showed that participants generally disagreed that organization had effective strategies to ensure farming systems of beneficiaries survives in long term. The same result had a very small standard deviation which shows that dataset was close to mean and not spread out indicating consensus because of consistency in participant responses. Item 4h sought to establish whether or not the organizations had effective strategies to ensure project sustainability. This results had a mean of 1.9708 and standard deviation of 1.25406. The mean showed that there was general disagreement by the participants that organization had effective strategies to ensure project sustainability. The same result had a small standard deviation which shows that dataset was close to mean and not spread out hence consensus among respondents. This results affirms results for item 4d on whether or not organizations had project sustainability strategies.

Item 4i sought to establish whether or not beneficiaries' farming systems survives in long term despite changing economic context. This results had a mean of 1.6277 and standard deviation of 1.04231. The mean showed that there was general disagreement by the participants that beneficiaries' farming systems survives in long term despite changing economic context. The same result had a small standard deviation which shows that dataset was close to mean and not spread out hence a consensus on this item.

Item 4j sought to establish whether or not organization had effective strategies to retain financial viability of projects after donor pull-out. This results had a mean of 1.3650 and

standard deviation of 1.04231. The mean showed that there was general disagreement by the participants that organization has effective strategies to retain financial viability of projects after donor pull-out. Participants therefore believed that organizations do not have effective strategies to retain financial viability of projects after donor pull-out. The same result had a small standard deviation meaning that there was a consensus among respondents when responding to this item.

Researcher further sought to establish the general mean using actual scores that ranged from 50 indicating strongly agree and 10 indicating strongly disagree when each values attached to each response were multiplied with the number of total items. The general mean for all items in table 4.10 was found to be 24.7080 with a standard deviation of 4.30998. The value of general mean showed that there was an overall disagreement by the participants with the most of the items that measure sustainability of agricultural projects. The implication here is that agricultural projects were not sustained. The mean had a small standard deviation which shows a consensus among participants on this issue. Results of the interview guides supported this finding in that most of the key informant participants emphasized on lack of project sustainment when asked about their take on the sustainability of agricultural projects in the organization. Participants were convinced that project sustainability was elusive in the organization. Main gaps noted by interview guide participants were: That finances were highly strained therefore finance resource were only budgeted for until the terminal end of the project and not post project, high employee turnover which worked against efforts meant to maintain skilled staff, glaring lack of project sustainability strategies, and noticeable absence of effective strategies to retain beneficiary skills. My finding on sustainability agrees with the work of (Oino, Towett, Kirui, & Luvega, 2015) which stated that project sustainability is a major challenge not only in Kenya, but also in many developing countries. Most projects implemented at huge amounts often tend to experience difficulties with sustainability. Donors such as the World Bank, DFID, USAID and other bilateral aid agencies have been expressing concerns on project sustainability, while the trend with implementation of projects is showing significant improvement, post-implementation sustainability is rather disappointing with very few projects being sustained.

This research result also confirms the statement of the problem which stated that majority of agricultural projects have generally been unsuccessful to bring sustainable benefits to the target groups, and even though numerous projects highlight fundamentals of sustainability in their proposal stage, the actual implementation still seems to lack emphasis on sustainability (Oino, Towett, Kirui, & Luvega, 2015).

A study conducted by (Kikwatha, Kyalo, Mulwa, & Nyonje, 2018) also investigated project sustainability, and in its findings: The study found a mean score for sustainability as 3.2521 and standard error 0.3072. The measure for sustainability was therefore 3.25 which was neutral opinion in the Likert scale implying that there was the uncertainty about sustainability of dairy goat projects. The same study findings by Kikwatha (2018) was supported by Focus Group Discussions (FGD) which found that participants expressed a mixed reaction when asked if the dairy goat project has been sustainable and has impacted positively on their lives. While study by (Kikwatha, Kyalo, Mulwa, & Nyonje, 2018) found a mixed reaction and uncertainty on project sustainability, this research on the other hand found total lack of project sustainability.

Consequently, while thinking of project sustainability, Oino, (2015) noted that three things must be born in mind; the community, project results and external assistance. A project is sustainable if the community/beneficiaries are capable on their own without the assistance of outside development partners, to continue producing results for their benefit for as long as their problem still exists. This study shows that community was not capable on their own without the assistance of outside development partners which implied absence of sustainability, this creates a social economic problem in our societies, it makes communities depend of outside assistance instead of solving problems by themselves. Lack of strategies to ensure farming systems of beneficiaries survives in long term after donor pull-out is a precursor to myriad of both environmental and social economic hitches and as noted by Scottish Environment Protection Agency, (2002), sustainability is depicted as three-legged stool consisting of the environment, the economy, and society as the legs. This model treats each of the three pillars as separate and equal entities and if any leg is less important (shorter) or missing the stool was be unstable. However, if all three legs are

the same length (each pillar being given equal weight), the result would be a balanced stool that would support sustainable development.

#### **4.6 Partnerships for planning M&E and sustainability of agricultural projects**

This section analyzed the first objective of the study and determined the descriptive statistics on partnerships for planning M&E, correlation between partnerships for planning M&E and sustainability of agricultural projects, and regression of partnerships for planning M&E and sustainability of agricultural projects.

##### **4.6.1 Partnerships for planning M&E**

Partnerships for planning M&E was an independent variable drawn from objective one of the study. The study sought to establish the opinion of the respondent on the utilization of partnerships for planning M&E as a component of M&E system. Ten items drawn from the questionnaires were analyzed and reported in terms of means and standard deviation. The respondents were asked to rate the statements on the scale of 5 in which 1 denoted strongly disagree, 2 disagree 3 neutral 4 agree and 5 strongly agree. The following scoring was also used: (SD:  $1 < SD < 1.8$ ), (D:  $1.8 < D < 2.6$ ), (N:  $2.6 < N < 3.4$ ), (A:  $3.4 < A < 4.2$ ) and (SA:  $4.2 < SA < 5.0$ ). The mentioned scales give an equidistance of 0.8.

The result are presented in table 4.11



**Table 4.11: Distribution of responses on the partnerships for planning M&E**

	<b>N</b>	<b>Mean</b>	<b>SD</b>
<b>5a</b> <i>There is M&amp;E technical assistance from partners</i>	<b>137</b>	3.5255	.97075
<b>5b</b> <i>Technical assistance from partners is not effectively utilized by the staff <b>R</b></i>	<b>137</b>	2.0438	1.22995
<b>5c</b> <i>M&amp;E Partners provides much needed support towards M&amp;E tools development</i>	<b>137</b>	3.8321	.96687
<b>5d</b> <i>My organization effectively utilizes M&amp;E tools support from partners</i>	<b>137</b>	2.0803	.76752
<b>5e</b> <i>The organization uses partnerships to fund for M&amp;E activities</i>	<b>137</b>	2.1825	1.30169
<b>5f</b> <i>Funding provided through partnerships towards M&amp;E activities is utilized efficiently</i>	<b>137</b>	1.2774	.63859
<b>5g</b> <i>The organization has a favorable culture on partnerships</i>	<b>137</b>	3.6058	1.17797
<b>5h</b> <i>The organization culture for partnerships is effective</i>	<b>137</b>	2.0876	1.13419
<b>5i</b> <i>The organization has an effective M&amp;E partnerships strategies</i>	<b>137</b>	3.0547	0.18768
<b>5j</b> <i>There exists an effective communication system for M&amp;E partners as a partnerships strategies</i>	<b>137</b>	1.9562	.51261

**R:** The scale of the item was reversed during analysis

Table 4.11 shows ten items that measure partnerships for planning M&E, the table presented means and standard deviations. Item 5a sought to establish the extent to which respondents received M&E technical assistance from partners. The mean score was 3.5255 while the standard deviation was 0.97075. The mean showed that organizations received M&E technical assistance from partners. The result had a small standard deviation which means that dataset for this item was close to the mean and not spread out. The standard deviation implied that participants did not have varied opinion rather a consensus on the issue. This is shown by the consistency of responses towards this item. All project managers agreed that technical assistance from M&E partners was available therefore supporting the quantitative result (M=3.5255, SDV= 0.97075), they also emphasized the importance of technical assistance from M&E partners on the sustainability of agricultural projects. One of the project managers in an open ended response stated the following:

*“....Our partners have always provided us with M&E assistance without fail, they have stood with us from beginning....”*

This qualitative result provides more evidence showing that partners provided M&E technical assistance.

In this study, Okwu and Ejembi (2005), reported that capacity building farmers helps understand and practice the skills required in the adoption of technology and fills the deficit situation in the knowledge and skill level of the practicing farmers as well as the availability of appropriate applicable information, the utilization of which makes the farmers better practitioners. Studies have cited lack of technical capacity among participants as a major reason for the low output of fish ponds in Kenya. The lack has been observed at all levels, from the lowest-level extension agent through university levels (Veverica, et al, 2000. The implication of item 5a is that provision of technical assistance from partners will work in favor of sustainability of agricultural projects which is supported by project manager’s assertions on the importance of technical assistance from M&E partners on sustainability of agricultural projects.

Item 5b sought to establish the extent to which technical assistance from partners was effectively utilized by the staff. This item had been stated negatively for the purposes of keeping the participants alert but the item was reversed to be a positive statement during analysis. The mean score was 2.0438 while the standard deviation was 1.22995. The mean showed that there was general disagreement by the participants on effective utilization of technical assistance from partners. This means that, despite the availability of M&E technical support, participants felt that the assistance from partners was not utilized effectively. The result had a small standard deviation which means that dataset for this item was close to the mean and not spread out. The standard deviation implied that participants did not have varied opinion rather a consensus on the issue. This is shown by the consistency of responses towards this item. This results shows that despite organizations getting M&E assistance from partners, this assistance was not effectively utilized. As noted in item 5a, which implied that technical assistance from M&E partners was important in

the sustainability of agricultural projects, therefore, the researcher concluded in item 5b that lack of effective utilization of M&E assistance from partners might negatively affect sustainability of agricultural project.

Item 5c sought to establish the extent to which M&E partners provided much needed support towards M&E tools development. The mean score was 3.8321 while the standard deviation was 0.96687. The mean showed that there was general agreement by the participants about M&E partners providing much needed support towards M&E tools development. The result had a small standard deviation which means that dataset for this item was close to the mean and not spread out. The standard deviation implied that participants did not have varied opinion rather a consensus on the issue. This is shown by the consistency of responses towards this item.

All project managers agreed that support towards M&E tools development from M&E partners was available therefore supporting the quantitative result (M=3.8321, SDV=0.96687), they also emphasized the importance of this support from partners on the sustainability of agricultural projects. One of the project managers in an open ended response stated the following:

*“...Our partners have always provided us with M&E assistance without fail, they have stood with us from beginning....they provide us with standardized M&E tools .....They train us on how to use the tools.....”*

This qualitative result provides more evidence showing that partners provided M&E assistance in tool development.

A study conducted by Schacter (2000) stated that donors are often willing to finance and support training for capacity and institutional development, they also share lessons of best practice. As part of the donor effort to support local capacity in developing countries, donors are also moving to create development networks— new computer on-line networks and participatory communities that share expertise and information. Also, Okwu and

Ejembi (2005), reported that capacity building helps understand and practice the skills required in the adoption of technology and fills the deficit situation in the knowledge and skill level. The implication of item 5c is that support towards M&E tools development from M&E partners will work in favor of sustainability of agricultural projects which is supported by project manager's assertions on the importance of this support on sustainability of agricultural projects.

Item 5d sought to establish the extent to which organization effectively utilizes M&E tools support from partners. The mean score was 2.0803 while the standard deviation was 0.76752. The mean showed that there was general disagreement by the participants about organization effectively utilizing M&E tools support from partners. The result had a small standard deviation which means that dataset for this item was close to the mean and not spread out. The standard deviation implied that participants did not have varied opinion rather a consensus on the issue. This is shown by the consistency of responses towards this item. The result shows that despite availability of M&E support towards M&E tools development from partners, participants felt that the assistance was not effectively utilized by the staff in the organization. Further analysis from a project manager in an open ended response stated the following:

*“...Our partner provides us with standardized M&E tools ....they train us on how to use the tools, however, I don't feel that there is good utilization of this support by my staff...probably my staff need to be involved more in the development of M&E tools so as to achieve maximum utilization of those same tools...”*

This qualitative result provides more evidence showing that lack of effective utilization of M&E tool development support from partners.

A study by Schacter (2000) emphasized that donors should try to harmonize their evaluation requirements relative to recipient countries. Lack of harmonizing data collection requirements to suit developing countries was mentioned by a project manager who said that staff needed to be involved more in M&E tool development so as to achieve maximum utilization of those same tools. Lack of involvement in M&E tool development and

eventual lack of effective utilization of M&E tool development support from partners might negatively affect sustainability of agricultural project.

Item 5e sought to establish the extent to which the organization uses partnerships to fund for M&E activities. The mean score was 2.1825 while the standard deviation was 1.30169 the mean showed that there was general disagreement by the participants about organizations using partnerships to fund for M&E activities. Item 5f sought to establish the extent to which the funding provided through partnerships towards M&E activities is utilized efficiently. The mean score was 1.2774 while the standard deviation was 0.63859. The mean showed that there was general disagreement by the participants on the effective utilization of funds provided through partnerships towards M&E activities. The result had a small standard deviation which means that there was consensus by participants when responding to this item.

Item 5g sought to establish the extent to which the organization has a favorable culture on partnerships. The results had a mean score was 3.6058 while the standard deviation was 1.17797. This mean showed that there was general agreement by the participants that organizations had favorable culture on partnerships. Small standard deviation meant that there was consensus by participants when responding to this item. Item 5h sought to establish the extent to which the organization culture for partnerships is effective. The mean score was 2.0876 while the standard deviation was 1.13419. This mean showed that there was general disagreement by the participants about effectiveness of organizational culture on partnerships. The result had a small standard deviation which meant that there was consensus by participants when responding to this item.

Item 5i sought to establish the extent to which the organization had an effective M&E partnerships strategies. The mean score was 2.7299 while the standard deviation was 1.49756. This mean showed that participants were of neutral opinion when asked about availability of effective of M&E partnerships strategies. The result had a large standard deviation which meant that there was no consensus by participants when responding to this item. Researcher was interested in determining the frequency distribution. The analysis of

frequency showed that majority of respondents believed that organizations did not have an effective M&E partnerships strategies with a frequency of 66, while 14 were neutral and 57 saying that organization actually had an effective M&E partnerships strategies. Project managers expressed mixed reaction when asked about the status of effective M&E partnerships strategies in the organization. The mixed reaction from project manager supported the quantitative result ( $M=2.7299$ ,  $SDV= 1.49756$ ), project managers also emphasized on the importance of M&E partnerships strategies in the organization; they said that effective partnership strategies are a pre-requisite for the sustainability of agricultural projects.

Item 5j sought to establish availability of communication system for M&E partners as a partnerships strategies. The mean score was 1.9562 while the standard deviation was 0.51261. This mean showed that there was general disagreement by the participants on availability of communication system for M&E partners as a partnerships strategie. The result had a small standard deviation which means that dataset for this item was close to the mean and not spread out and that there is consensus on the issue. A study conducted by (IFAD 2002 and UNPF 2002) stated that “Plan for communication as part of your M&E system from the outset”. The same study noted that a good communication strategy is essential for disseminating information and sharing it with key stakeholders. Results-based information should be shared with all internal and external stakeholders and interested parties. “Active follow-up is necessary to implement recommendations . . . and to incorporate lessons learned in future decision-making processes . . . The more stakeholders are involved in planning the next steps, the more likely they are to follow through on implementing evaluation recommendations.”

When asked about the challenges that organizations face in partnerships for planning M&E, one of the project managers said the following:

*“....One of the greatest challenges we face as an organization is lack of M&E policies and guideline that define the criteria for partnership with our stakeholders...We do not have strategies that define our M&E partnerships, we only use the strategies that are donor born and dictated upon by donors.”*

Researcher further sought to establish the general mean using actual scores that ranged from 50 indicating strongly agree and 10 indicating strongly disagree when each value attached to each response were multiplied with the number of total items in table 4.11. The general mean for all items was 26.1460 and a general standard deviation of 4.52370. The mean had a relatively small standard deviation meaning that there was consensus among the participants on responding to this item. The value of general mean showed that there was an overall disagreement by the participants with the most of the items that measure partnership for planning M&E. This implies that organizations did not utilize partnerships for planning M&E as a component of M&E system. A study conducted by (Fakoya et al 2001) stated that lack of stakeholder's participation in M&E policy has been pointed out as a main impediment to commercial fish farming projects. Additionally, a study by Codd (2011), stated that stakeholder participation in M&E process assesses what works and what doesn't and in essence make amends for improvement of projects. The same study also noted that engagement of locals helps build stakeholder capacity to handle their issues. In their studies, they observed that stakeholder capacities can be enhanced by employing local languages when pursuing evaluation practices and then utilizing scientific tools to extend the evaluation findings from the local level to wider areas. The studies further revealed that participatory processes are a means of reducing tensions among participants otherwise responsible for resource-based conflicts. As a consequence, various stakeholder end up learning to work together towards a common objective. This discussions implies that partnerships for planning M&E was important therefore an implication that failure to utilize partnerships for planning M&E might affect sustainability of agricultural projects negatively.

#### 4.6.1.1 Descriptive analysis of the influence of partnerships for planning M&E on sustainability of agricultural projects funded by NGOs

Despite poor utilization of partnerships for planning M&E as a component of monitoring and evaluation system, researcher was also interested in determining the beliefs and opinions of participants on the influence of partnerships for planning M&E on sustainability of agricultural projects. They were asked to select the number that best represents their opinion using 5-point scale. Results are tabulated in table 4.12

**Table 4.12: Distribution of responses on the influence of partnerships for planning M&E on sustainability of agricultural projects**

	<i>N</i>	<i>Mean</i>	<i>SD</i>
<b>5.1a</b> <i>Technical assistance from M&amp;E partners helps sustain agricultural projects that are funded by NGOs</i>	<b>137</b>	3.8832	1.18858
<b>5.1b</b> <i>Use of partnerships to fund M&amp;E activities helps sustain agricultural projects that are funded by NGOs</i>	<b>137</b>	3.8686	1.18084
<b>5.1c</b> <i>Organizational culture on partnerships helps sustain agricultural projects that are funded by NGOs</i>	<b>137</b>	4.5182	.50150
<b>5.1d</b> <i>Effective partnerships strategies helps sustain agricultural projects that are funded by NGOs</i>	<b>137</b>	4.5255	.50118

Table 4.12 shows distribution of responses on the influence of partnerships for planning M&E on the sustainability of agricultural projects. The items had a general mean of 16.7956 and a general standard deviation of 2.47380. This shows that there was general agreement by the participants that partnerships for planning M&E influences sustainability of agricultural projects in terms of helping sustain agricultural projects. This result is supported by individual items. Item **5.1a** sought to establish whether or not technical assistance from M&E partners was help sustain agricultural projects that are funded by NGOs, this item had mean of 3.8832 which implies an agreement with the statement. The mean had a small standard deviation of 1.18858 which implies consensus with the issue among participants. Item **5.1b** sought to establish whether or not use of partnerships to



fund M&E activities was help sustain agricultural projects that are funded by NGOs, this item had mean of 3.8686 which implies an agreement. The mean had a large standard deviation of 1.18858 which implies lack of consensus with the issue among participants

Item5.1c sought to determine whether organizational culture on partnerships helps sustain agricultural projects and item 5.1d sought to determine whether effective partnerships strategies helps sustain agricultural projects. The two items had a mean of 4.5182 and 4.5255 respectively which implied that the participants strongly agreed with the statements. This items had small standard deviations of 0.50150 and 0.50118 respectively which mean a consensus among participants when responding to this items.

#### **4.6.2 Relationship between partnerships for planning M&E and sustainability of agricultural projects**

The study sought to establish the relationship between partnership for planning M&E and the sustainability of agricultural projects. The study also tested the null hypothesis there no significant relationship between partnership for planning M&E and the sustainability of agricultural projects. Both correlation index (r) and p-value were computed as shown and presented as shown in table 4.13

**Table 4.13: Correlations between partnerships for planning M&E and sustainability of agricultural projects.**

		Partnerships for planning M&E	Sustainability of agricultural projects
Partnerships for planning M&E	Pearson Correlation	1	.743
	Sig. (2-tailed)		.036
	N	137	137
Sustainability of agricultural projects	Pearson Correlation	.743	1
	Sig. (2-tailed)	.036	
	N	137	137

Table 4.13 shows a correlation index  $r = 0.743$ . This shows a strong positive correlation between partnership for planning M&E and sustainability of agricultural projects. This implied that the more the organization embraced partnerships for planning M&E the more agricultural projects were sustained. Further analysis sought to test null hypothesis

*H<sub>0</sub>: There is no significant relationship between partnership for planning M&E and sustainability of agricultural projects*

The p-values was found to be  $p = 0.036$  at 0.05 level of significant. This led to rejection of null hypothesis that stated: Partnership for planning M&E has no significant relationship with sustainability of agricultural projects. The alternative hypothesis was adopted. In a further analysis, one of the project managers responding to an open ended questions said the following:

*“...For any organization to achieve project sustainability, stakeholder engagement is key.....partnerships in monitoring and evaluation is unavoidable when sustainability of projects is the end product.....”*

This qualitative result supported the quantitative result which found a strong relationship between partnerships for planning M&E and sustainability of agricultural projects. This result agrees with the work of Conlin and Stirrat, (2008) which stated that partnerships for M&E was important for sustainability of agricultural projects because it attempts to include a range of stakeholders to develop new methods of measuring sustainability, which improves projects in terms of sustainability. Further, Katz and Sara (1997) found that the community-based approach significantly increased sustainability. The analysis found that there exist a strong linkage between participation of the community members and sustainability of the projects. Sustainability was achieved owing to the fact that community members were able to access information, capacity build at all levels, trained in operations and maintenance, control over funds, and good quality construction. Study by Katz and Sara (1997) was supported by Tulder et al., (2014) which stated that implementation of sustainability considerations in organizations has traditionally been

discussed as a top-down process, in which external pressure mounts up and organizations react by addressing sustainability in their strategies.

#### 4.6.3: Regression analysis of partnerships for planning M&E on sustainability of agricultural projects

The study also sought to establish how much partnerships for planning M&E explained variation in the sustainability of agricultural project through regression analysis. The model and the key that used was as follows:

$$y = \alpha + \beta_1 X_1 + \varepsilon$$

y= Sustainability of agricultural projects

a=constant (Y-intercept)

$\beta_1$ = Beta coefficient

$X_1$ = Partnerships for planning M&E

e= error term

This was presented in tables 4.14

**Table 4.14: Model Summary for partnership for M&E and sustainability of agricultural projects.**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.743 <sup>a</sup>	.553	.539	.84261	2.322

a. Predictors: (Constant), Partnerships for planning M&E

b. Dependent Variable: Sustainability of agricultural projects

Table 4.14 shows a Pearson r of 0.743 which indicates a positive correlation exhibited between the various bivariate variables implying that the more the organization embraced partnerships for planning M&E the more agricultural projects were sustained. This confirms the correlations value in table 4.13. The results also shows an  $R^2$  of 0.553 which shows that 55.3% of the variability of the response variable which was sustainability of agricultural projects funded by NGOs was accounted for by predictor variable which was partnerships for planning M&E.

$$R^2 = \frac{\varepsilon (Estimate - Mean)^2}{\varepsilon (Actual - Mean)^2} = \text{Regression Sum of Squares} / \text{Total Sum of Squares}$$

**Table 4.15: ANOVA table for partnership for planning M&E and sustainability of agricultural projects**

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regress on	700.245	1	700.245	3.725	.036
	Residual	19.589	135	188.00		
	Total	1265,504	136			

a. Dependent Variable: Sustainability of agricultural projects

b. Predictors: (Constant), Partnerships for planning M&E

Table 4.15 shows an F-statistic of 3.725 with a p-value of 0.036. This is reported as  $F = (1,135) = 3.725, p = 0.36, R^2 = 0.553$ . It shows that the regression model hence the variability that was explained was statistically significant. Since the calculated p-value is less than 0.05 the null hypothesis was rejected.

The model ( $\gamma = \alpha + \beta_1\chi_1 + \varepsilon$ ) was found to be fit since the predictor variable accounted for 55.3% of the variability of outcome variable and which was statistically significant.

**Table 4.16: Coefficient table for partnership for M&E and sustainability of agricultural projects**

Model	Unstandardized Coefficients		Standardized Coefficients	T	Sig.
	B	Std. Error	Beta		
(Constant)	16.194	.111		19.717	.000
1 Partnerships for planning M&E	9.040	.046	.743	.852	.036

a. Dependent Variable: Sustainability of agricultural projects

Table 4.16 works by substituting the beta value as well as the constant term, the proceeding regression equation model was as follows:

$$Y = 16.194 + 9.040 \chi_1$$

The results in table 4.16 shows that a unit increase in the value of partnerships for planning M&E increased the value of sustainability of agricultural projects by 9.040 times holding other variables constant, the units totaled to 25.234 units for a unit increase in the value of partnerships for planning M&E. This was above average number in terms of units comparing with a total number of units which was 50 from the general mean for all items that was calculated in table 4.11. This contribution was also statistically significant with a p-value of 0.036. The results agrees with work of Chouinard and Cousins, (2013), which noted that participatory evaluation is particularly relevant because of the following reasons: Firstly, participatory evaluation has been shown to be particularly potent in fostering learning about programs and the contexts within which they operate this means that partners can adopt the best cultures that suit the implementation process. Secondly, participatory monitoring and evaluation provides an indirect approach to capacity building which includes technical support and fund mobilization. To the extent that local actors, program community members and stakeholders are involved in the co-production of

evaluation knowledge they stand to benefit significantly. Such benefits are often framed as ‘process use’ ( Cousins 2007; Patton 2008).

This research also agrees with Kimweli, (2013) who also stated that participatory monitoring and evaluation in food security projects contributes to the success of food security projects. Also this research agrees with Ababa (2013), as discussed in (Oino, Towett, Kirui, & Luvega, 2015) who stated that despite development aid to Kenya rising steadily supporting several projects all geared towards development, some of the projects have, however, been successful and little evidence is available on the true impact of funded programs on the lives of the poor in Kenya. The study states that one of the most critical obstacles is the extent to which the projects are able to be sustained or persist despite the exit of donors.

As Kusek and Rist (2004) stated, more and more partnerships are being formed to achieve development goals. Partnerships may be formed at the international and multilateral, regional, country, and governmental levels. Whatever the case, the same results-based monitoring system can be applied to partnership efforts, given scarce resources and ambitious development objectives, development partners need to leverage resources to achieve the desired goal. Therefore, the means and strategies was be set by multiple partners. One must look beyond one’s own organizational unit when considering available inputs. Partnerships may be created elsewhere in one’s own organization or even with other organizations inside or outside the government. When resources are cut or diminished, governments and organizations may need—or be forced to enter into—partnerships with others to reach goals that may be similar. Collaborations can include the formation of partnerships with the private sector, NGOs, and the international donor community. By combining resources, outcomes are more achievable—even during times of input constraints. Failure to utilize partnerships for planning M&E might also have influence project sustainability because, like Kusek and Rist, (2004) notes that there is an interaction between means and strategies (inputs, activities, and outputs) and outcome targets (pathway to sustainability of agricultural projects). Targets are set according to what the means and strategies potentially can yield.

Views from interview guide were in support of feedback from questionnaire. In her own words one of the respondents said the following

*“ Involving stakeholders in monitoring and evaluation process provides direct benefit to the organization in terms of resource mobilization, it also enhances learning from one another hence building capacity, this will eventually translate to project sustainability*

*The challenge that organizations face is overlooking the role of stakeholder involvement in monitoring and evaluation process at project design stage”*

#### **4.7 Data utilization for monitoring and evaluation and sustainability of agricultural projects**

This section analyzed the second objective of the study and determined the descriptive statistics on data utilization for monitoring and evaluation, correlation between data utilization for monitoring and evaluation and sustainability of agricultural projects, and regression of data utilization for monitoring and evaluation and sustainability of agricultural projects.

##### **4.7.1 Data utilization for monitoring and evaluation**

Data utilization for monitoring and evaluation was an independent variable drawn from objective two of the study. The study sought to establish the opinion of the respondents on data utilization for monitoring and evaluation as a component of M&E system. Ten items drawn from the questionnaires were analyzed and reported in terms of means and standard deviation. The respondents were asked to rate the statements on the scale of 5 in which 1 denoted strongly disagree, 2 disagree 3 neutral 4 agree and 5 strongly agree. The following scoring was also used: (SD:  $1 < SD < 1.8$ ), (D:  $1.8 < D < 2.6$ ), (N:  $2.6 < N < 3.4$ ), (A:  $3.4 < A < 4.2$ ) and (SA:  $4.2 < SA < 5.0$ ). The mentioned scales give an equidistance of 0.8. The result is presented in table 4.17.

**Table 4.17: Distribution of responses on the data utilization for M&E**

		<i>N</i>	<i>Mean</i>	<i>Std. Deviation</i>
<i>6a</i>	<i>The organization uses of data to plan for future projects through learning</i>	137	2.8686	1.07661
<i>6b</i>	<i>The use of data to plan for future projects is NOT in line with M&amp;E system requirements (R)</i>	137	2.7445	1.17592
<i>6c</i>	<i>The use of data to plan for future projects is NOT in line with donor requirements (R)</i>	137	3.9489	1.11356
<i>6d</i>	<i>The use of data to plan for future projects is in line with beneficiary expectations</i>	137	1.6131	0.90949
<i>6e</i>	<i>The use of data for decision making is in line with M&amp;E system requirements</i>	137	2.5912	1.06104
<i>6f</i>	<i>The use of data for decision making is in line with donor requirements</i>	137	3.5401	0.11153
<i>6g</i>	<i>The use of data for decision making is in line with beneficiary expectations</i>	137	1.7664	0.99456
<i>6h</i>	<i>The use of data for decision making is timely</i>	137	2.2263	1.20656
<i>6i</i>	<i>The organization has a data sharing policy</i>	137	3.6861	1.10315
<i>6j</i>	<i>The organization has an effective data sharing system</i>	137	2.6569	1.11433

**R:** The scale of the item was reversed during analysis

Table 4.17 shows ten items that measure data utilization for M&E, the table presented means and standard deviations. Item 6a sought to establish the extent to which organizations used data to plan for future projects through learning. The responses had a mean score of 2.8686 with a standard deviation of 1.07661. The mean showed that participants were of neutral opinion when asked about organizations use data to plan for future projects. The result had a relatively large standard deviation which means that data was spread away to the mean, implying that participants had varied opinion rather a consensus on the issue which is shown by lack of consistency in responses provided for by participants on this item. Researcher was still interested in finding out more on distribution of responses on this item, this called for frequency testing. The test showed that out of 137 participants that respondent to this item, a total of 68 participants said that organizations did not use data to plan for future projects, 28 were not sure, while a total of 41 participants said that organizations actually used data to plan for future projects. The frequency distribution



shows that even though the mean showed a general neutral opinion, most of the responses were skewed towards disagreeing with the statement.

Project managers responding to open ended questions were of the opinion that organizations do not use data to plan for future projects through learning. This provides more information to on the issue. The qualitative result supported the frequency results where majority of participants said organizations does not use data to plan for future projects through learning. One of the project managers in an open ended response stated the following:

*“...We collect a lot of data, we generate rich data which is a good thing in monitoring and evaluation, the problem is that the data rarely informs future projects...”*

This qualitative result provides more evidence on whether or not organizations used data to plan for future projects through learning. The results affirmed that even though data is collected, this data is rarely utilized to inform future projects through learning.

The work of UNDP (2002) stated that the use of M&E findings can promote knowledge and learning in governments and organizations. “Learning has been described as a continuous dynamic process of investigation where the key elements are experience, knowledge, access and relevance. Learning helps to test systematically the validity, relevance and progress of the development hypotheses. Marie & Higgins (2001) explains that while relevant and timely information allows managers to make accurate decisions, irrelevant information makes decision making difficult, adds to confusion, and affects the success of the organization. Therefore it is crucial that managers are aware of the information they require, how to acquire it and to maximize the use in order to survive and prosper in today's information-intensive environment. It can be concluded that failure to learn from data can be detrimental to the success of a project and therefore, sustainability of agricultural projects might have been negatively affected by organizations failure to learn from collected data so as to improve future projects in terms of sustainability.

Item 6b was the second item which sought to establish the extent to which the use of data to plan for future projects was in line with M&E system. This item was negatively phrased to ensure that the respondents were alert while responding to the items in the research instrument. However, during the analysis of data, the scale was reversed to ensure uniformity in computation of means and standard deviations. The mean score was 2.7445 while the standard deviation was 1.17592. The mean showed that participants were of neutral opinion when asked if the use of data to plan for future projects was in line with M&E system. The result had a relatively large standard deviation which means that data was spread away to the mean, implying that participants had varied opinion rather a consensus on the issue which is shown by lack of consistency in responses provided for by participants on this item. Researcher was still interested in finding out more on distribution of responses on this item, this called for frequency testing. The test showed that out of 137 participants that responded to this item, 71 participants said that organizations use of data to plan for future projects was not in line with M&E system while a total of 39 participants said that the use of data to plan for future projects was actually in line with M&E system. The frequency distribution shows that even though the mean showed a general neutral opinion, most of the responses were skewed towards disagreeing with the statement. Therefore, result concludes that sustainability of agricultural projects might also have been negatively affected by organizations failure to use data to plan for future projects and failure to align the use of data with M&E system requirements. This result reasons with a study carried out by Thomson (2010) which noted that while NGOs feel immense pressure to devote time and resources to satisfying donors' reporting requirements, many of them will only do so if they believe it will influence their ability to secure future funding.

Item 6c sought to establish the extent to which the use of data to plan for future projects is in line with donor requirements. This item was reversely scored to ensure that the respondent were attentive while responding to the items in the research instrument. However, during the analysis of data, the scale was reversed through transformative tool in the SPSS to ensure uniformity in computation of means and standard deviations. This was the third item that the researcher used to measure data utilization for monitoring and

evaluation. Respondents were asked to rate in the scale of five how much they agreed or disagreed with the statement that the use of data to plan for future projects is in line with donor requirements. The responses had a mean score of 3.9489 while the standard deviation was 1.11356. This mean showed that there was general agreement by the participants that the use of data to plan for future projects was in line with donor requirements with a relatively small standard deviation which meant that there was consensus by participants when responding to this item because of the consistency of the responses. This result agrees with a study carried out by Thomson (2010) which noted that while NGOs feel immense pressure to devote time and resources to satisfying donors' reporting requirements, many of them will only do so if they believe it will influence their ability to secure future funding

Item 6d sought to establish the extent to which the use of data to plan for future projects is in line with beneficiary expectations. The responses had a mean score of 1.6131 while the standard deviation was 0.90949. This result indicates a general disagreement by participants that use of data to plan for future projects is in line with beneficiary expectations. This means that participants thought that use of data to plan for future projects is not in line with beneficiary expectations. The result had a small standard deviation which implied that there was consensus by participants when responding to this item because of the consistency of the responses. Further analysis from one of the project manager in an open ended response stated the following:

*“... We get entangled between donor requirements and beneficiary requirements in project implementation. So, as an organization, we tend to do what donors require because they fund us...”*

This qualitative result provides more evidence on the use of data to plan for future projects and whether it is in line with donor or beneficiary requirements. The result affirmed that organizations would rather use data to plan for future projects and abide by donor requirements at the expense of beneficiary requirements. This result is supported by the work of Ebrahim (2003) and Rodriguez Escudeiro (2014) which established that many

NGOs have a multiple-donor funding structure, which comes with multiple and sometimes diverse or incompatible donor requirements. Often, the donor funding organization has drastically different objectives than the NGO. This creates complications for NGOs that are dependent on funding and therefore must meet donors' requirements, even if they contrast their own approaches. This is a particularly significant problem for small organizations, whose resources are already stretched thin. Thomson (2010) on the other hand writes how this dependence influences organizations' outcome measurements: "For most nonprofits that are not engaged in outcome measurement but are highly dependent on resources from the funder, new mandates are likely to lead them to begin measuring outcomes even when prior resource constraints prevented them from doing so". An example of this is the use of participatory techniques. Many donors require participatory techniques but by requiring other demanding accountability reports, NGOs cannot devote themselves to meeting any one requirement whole-heartedly. Typically, when this happens, requirements that are less quantifiable, like community participation, get cut first. Dixon and McGregor (2011) and Rodriguez Escudeiro (2014) states that a gap exists between the way aid is allocated and delivered and the principles of grassroots and participatory approaches. This discussions shows that failure to meet beneficiaries' requirements can be detrimental to the success of a project. Therefore, the researcher concludes that failure to use data to plan for future projects in accordance to beneficiary expectations might negatively influence sustainability of agricultural projects.

Item 6e sought to establish the extent to which the use of data for decision making is in line with M&E system requirements. The responses had a mean score was 2.5912 while the standard deviation was 1.06104. The mean shows that there was general disagreement with the statement. This shows that use of data for decision making was not in line with M&E system requirements. Small standard deviation shows consensus. Item 6f sought to establish the extent to which the use of data for decision making is in line with donor requirements. The responses had a mean score was 3.5401 while the standard deviation was 0.11153. The mean showed that there was general agreement by the participants that the use of data for decision making was in line with donor requirements with a very small

standard deviation as shown by consistency in the participants' responses which meant that there was consensus among participants when responding to this item.

Item 6g sought to establish the extent to which the use of data for decision making is in line with beneficiary expectations. The responses had a mean score was 1.7664 while the standard deviation was 0.99456. The mean showed that participants generally disagreed that the use of data for decision making was in line with beneficiary expectation. The result had a very small standard deviation as shown by consistency in the participants' responses which meant that there was consensus among participants when responding to this item. This results was supported by the words of one of the project manager who said the following:

*“....as an organization, we tend to do what donors require of us because they fund us...our decisions are solely guided by our donors.....”*

This result is supported by the work of Ebrahim (2003) and Rodriguez Escudeiro (2014) which established that many NGOs have a multiple-donor funding structure, which comes with multiple and sometimes diverse or incompatible donor requirements. Often, the donor funding organization has drastically different objectives than the NGO. This creates complications for NGOs that are dependent on funding and therefore must meet donors' requirements, even if they contrast their own approaches. Therefore, result concludes that sustainability of agricultural projects might also have been negatively affected by organizations failure use of data for decision making that are in line with beneficiary expectations.

Item 6h sought to establish the extent to which the use of data for decision making was timely. The responses had a mean score was 2.2263 while the standard deviation was 1.20656. The mean showed that participants generally disagreed that the use of data for decision making was timely. Item 6i sought to establish whether organization had a data sharing policy. The responses had a mean score was 3.6861 while the standard deviation was 1.10315. The mean showed that participants generally agreed that the organizations

had organization had a data sharing policy. Item 6j sought to establish the extent to which the organization had an effective data sharing system. The responses had a mean score was 2.6569 while the standard deviation was 1.11433. The mean showed that participants were of neutral opinion when asked about availability of an effective data sharing system. The result had a relatively large standard deviation which means that data was spread away to the mean, implying that participants had varied opinion rather a consensus on the issue which is shown by lack of consistency in responses provided for by participants on this item. Researcher was still interested in finding out more on distribution of responses on this item, this called for frequency testing. The test showed that out of 137 participants that responded to this item, 80 participants said that organizations did not have effective data sharing system while 33 said that organizations actually had have effective data sharing system. The frequency distribution shows that even though the mean showed a general neutral opinion, most of the responses were skewed towards disagreeing with the statement meaning that organizations do not have an effective data sharing system. Therefore, result concludes that sustainability of agricultural projects might also have been negatively affected by organizations failure to have an effective data sharing system

Results in table 4.17 had a general mean for all items of 24.571 and a general standard deviation of 4.71348. These items had the highest value of 50 (5x10) when values attached to each response were multiplied with the number of total items. The value of general mean showed that there was an overall disagreement by the participants with most of the items that measure data utilization for M&E. This implies a poor application of data utilization for M&E as a component of M&E system. A study conducted by Sayyed (2012) found that data dissemination and use was important in projects. This result was supported by a study conducted by (Mutekhele, Rambo, Ongati, & Nyonje, 2018) which found that it was agreeable to say that sharing information about the project to stakeholders increases their ownership and appreciation of the project. This implies that data utilization for M&E is important to projects and failure to utilize data in M&E could negatively influence the sustainability of agricultural projects.

#### 4.7.1.1 Descriptive analysis of the influence of the data utilization for monitoring and evaluation on sustainability of agricultural projects funded by NGOs

The results from table 4.17 showed that majority of the respondents did not agree that organizations had a well-established M&E system in terms of data utilization for monitoring and evaluation. Despite poor utilization of data utilization for monitoring and evaluation, researcher was also interested in determining the beliefs and opinions of participants on the influence of data utilization for monitoring and evaluation on sustainability of agricultural projects. They were asked to select the number that best represents their opinion using 5-point scale. Each construct that measured data utilization for monitoring and evaluation formed a research item. Results are tabulated in table 4.18

**Table 4.18: Distribution of responses on the influence of data utilization for M&E on sustainability of agricultural projects**

	<i>N</i>	<i>Mean</i>	<i>SD</i>	<i>Maximum</i>	<i>Minimum</i>
<b>6.1a</b> <i>Use of data for planning helps sustain agricultural projects that are funded by NGOs</i>	<b>137</b>	3.2555	1.04339	<b>5</b>	<b>1</b>
<b>6.1b</b> <i>Use of data for decision making helps sustain agricultural projects that are funded by NGOs</i>	<b>137</b>	3.3358	1.05912	<b>5</b>	<b>1</b>
<b>6.1c</b> <i>Data sharing with stakeholders helps sustain agricultural projects that are funded by NGOs</i>	<b>137</b>	3.3942	1.12038	<b>5</b>	<b>4</b>

Item 6.1a sought to establish whether or not use of data for planning helps sustain agricultural projects, this item had mean of 3.2555 with a standard deviation of 1.04339. The mean shows that participants were unsure on whether or not data utilization for M&E helps in the sustainability of agricultural projects. This result had a relatively large standard deviation which indicates that participants did not show consistency in their responses or they did not have complete consensus when responding to this. The researcher was still interested in the distribution of responses on this item. This called for frequency testing. Frequency test showed that out of 137 participants, 27 did not agree that data utilization for M&E influences sustainability of agricultural projects in terms of helping sustain agricultural projects, 67 were not sure while 47 said that data utilization for M&E helps sustain agricultural projects. The frequency test showed that responses were not skewed to either agree or disagree but neutrality with more participants agreeing that data utilization for M&E helps sustain agricultural projects than those ones that disagreed.

Item 6.1b sought to establish whether or not use of data for decision making helps sustain agricultural projects, the item had mean of 3.3358 and a standard deviation of 1.05912. The mean shows that participants were unsure on whether or not use of data for decision making helps sustain agricultural projects. This result had a relatively large standard deviation which indicates that participants did not show consistency in their responses or they did not have complete consensus when responding to this item. The researcher was still interested in the distribution of responses on this item. This called for testing of frequency. Frequency test showed that out of 137 participants, 23 did not agree that use of data for decision making helps sustain agricultural projects, 56 were not sure while 58 said that use of data for decision making actually helps sustain agricultural projects. The frequency test shows that despite having general neutrality as shown in the mean analysis, the distribution of responses were skewed to agree that use of data for decision making helps sustain agricultural projects.

Item 6.1c sought to establish whether or not data sharing with stakeholders help sustain agricultural projects. The result had a mean of 3.3942 with a standard deviation of 1.12038. The mean shows that participants were also unsure on whether or not data sharing with



stakeholders help sustain agricultural projects. Despite uncertainty among the participants on this item, it is worth noting that a study conducted by (Mutekhele, Rambo, Ongati, & Nyonje, 2018) found that it was agreeable to say that sharing information about the project to stakeholders increases their ownership and appreciation of the project. This implies that data utilization for M&E is important to projects and failure to utilize data in M&E could negatively influence the sustainability of agricultural projects.

Researcher went ahead to determine the general mean and general standard deviation for table 4.18 which was testing the distribution of responses on the influence of data utilization for M&E on the sustainability of agricultural projects. The general mean for the items was computed using actual scores that ranged from 15 indicating strongly agree and 3 indicating strongly disagree when each value attached to each response were multiplied with the number of total items in table 4.12. The items had a general mean of 9.9854 and general standard deviation of 3.16689. This shows that there was general uncertainty among respondents if data utilization for M&E influences sustainability of agricultural projects in terms of helping sustain it. The general standard deviation was large which indicates that values were far or were spread away from the mean, therefore, there was no consensus among the participants when responding. This results shows that participants in this study, were unsure whether or not data utilization for M&E influences sustainability of agricultural projects in terms of helping sustain it.

To understand more about the relationship between data utilization for M&E and sustainability of agricultural projects, the researcher went further to compute correlation

#### **4.7.2 Relationship between data utilization for monitoring and evaluation and sustainability of agricultural projects**

The study sought to establish the relationship between data utilization for M&E and the sustainability of agricultural projects. The study also tested the null hypothesis that there is no significant relationship between data utilization for M&E and the sustainability of agricultural projects. Both correlation index ( $r$ ) and  $p$ -value were computed as shown and presented as shown in table 4.19

**Table 4.19: Correlation between data utilization and sustainability of agricultural projects**

		<b>Correlations</b>	
		Sustainability of agricultural projects	Data utilization for M&E
Sustainability of agricultural projects	Pearson Correlation	1	.198
	Sig. (2-tailed)		.120
	N	137	137
Data utilization for M&E	Pearson Correlation	.198	1
	Sig. (2-tailed)	.020	
	N	137	137

\*. Correlation is significant at the 0.05 level (2-tailed).

Table 4.19 shows a correlation index  $r = 0.198$ . This shows a weak positive correlation between data utilization for M&E and sustainability of agricultural projects. This implied that the more the organization embraced data utilization for M&E, the more agricultural projects were sustained. Further analysis sought to test null hypothesis:

**H<sub>0</sub>:** there is no significant relationship between data utilization for M&E and sustainability of agricultural projects

The p-values was found to be  $p = 0.120$  at 0.05 level of significant. This led to failure to reject the null hypothesis. The alternative hypothesis was therefore not adopted. The results in table 4.19 therefore shows a the weak relationship that was found between data utilization for M&E and sustainability of agricultural projects and could not be generalized to the target population. The results in table 4.19 explains the descriptive analysis results in table 4.18 which found a neutral results on the influence of data utilization for M&E and sustainability of agricultural projects. The small positive correlation of  $r = 0.198$  that cannot be inferred as shown in table 4.19 explains the neutral descriptive results in table 4.18. In

a further analysis, one of the project managers responding to open ended questions said the following:

*“...Utilization of data is critical in projects performance, moreover, sustainability of any project will also require more and more data use and effective data utilization strategies. It is the data that will inform all stakeholders including the community about what should be done, data use is therefore a pre-requisite to project sustainability.....”*

The qualitative results did not support the quantitative result. While the quantitative result found no significant relationship between data utilization for M&E and sustainability of agricultural projects, qualitative result emphasized that data use is a pre-requisite to project sustainability. The qualitative results also sheds more light on the descriptive results on table 4.18 where despite finding a general uncertainty to the influence of data utilization for M&E on the sustainability of agricultural projects, the general standard deviation was large which indicated that values were far or were spread away from the mean, which indicated that there was no consensus among the participants when responding to this item. The project manager’s comment is an instance of a varied opinions that was pointed out by large general standard deviation of 3.16689 in table 4.18, The project manager’s comment agrees that data utilization actually helps sustain agricultural projects, looking deeper into the descriptive analysis of table 4.18, the value of general mean 9.9854 was larger than 9.000 (neutral point), indicating that despite general uncertainty, there were more participants in agreeing response than in disagree responses.

#### **4.7.3: Regression analysis of data utilization for M&E on sustainability of agricultural projects**

The study also sought to establish how much data utilization for M&E explained variation in the sustainability of agricultural project through regression analysis. The model and the key that used was as follows:

$$y = \alpha + \beta_2 x_2 + \varepsilon$$

y= Sustainability of agricultural projects

a=constant (Y-intercept)

$\beta_2$ = Beta coefficient

X<sub>2</sub>= Data utilization for M&E

e= error term

This was presented in tables 4.20

**Table 4.20: Model Summary for data utilization for M&E and sustainability of agricultural projects**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.198 <sup>a</sup>	.039	.032	3.00095

a. Predictors: (Constant), Data utilization for M&E

Table 4.20 shows a Pearson r of 0.198 which indicates a small positive correlation exhibited between the various bivariate variables implying that the more the organizations embraced data utilization for M&E the more agricultural projects were sustained. This confirms the correlations value in table 4.19. The results also shows an  $R^2$  of 0.039 which means that 3.9% of the variability of the response variable which was sustainability of agricultural was accounted for by data utilization for M&E as a component of monitoring and evaluation system.  $R^2$  value is given by the following equation.

$$R^2 = \frac{\varepsilon (Estimate - Mean)^2}{\varepsilon (Actual - Mean)^2} = \text{Regression Sum of Squares} / \text{Total Sum of Squares}$$

**Table 4.21: ANOVA table for data utilization for M&E and sustainability of agricultural projects**

Model	Sum of Squares	ANOVA <sup>a</sup>			Sig.
		Df	Mean Square	F	
1 Regression	49.737	1	49.737	0.523	.120
Residual	1215.766	135	9.006		
Total	1265.504	136			

a. Dependent Variable: Sustainability of agricultural projects  
b. Predictors: (Constant), Data utilization for M&E

Table 4.21 shows an F-statistic of 0.523 with a p-value of 0.120. This is reported as  $F = (1,135) = 0.523, p = 0.120, R^2 = 0.039$ . It shows that the regression model hence the variability that was explained for was not statistically significant since the calculated p-value was  $> 0.05$  therefore the null hypothesis which states that there is no significant relationship between data utilization for M&E and sustainability of agricultural projects was not rejected as shown in table 4.19. The model,  $\gamma = \alpha + \beta_2\chi_2 + \varepsilon$ , was not found to be fit since the predictor variable accounted for only 3.9% of the variability of outcome variable and which was not statistically significant.

**Table 4.22: Coefficients ANOVA table for data utilization for M&E and sustainability of agricultural projects**

Model		Coefficients			T	Sig.
		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta		
1	(Constant)	24.900	1.968		12.652	.000
	Data utilization for M&E	.141	.060	.198	2.350	.120

a. Dependent Variable: Sustainability of agricultural projects

Table 4.22 works by substituting the beta value as well as the constant term, the proceeding regression equation model was as follows:

$$Y = 24.900 + 0.141x_2$$

The results in table 4.22 shows that a unit increase in the value of data utilization for M&E increased the value of sustainability of agricultural projects by 0.141 times holding other variables constant totaling to 25.041 units for a unit increase in the value of data utilization for M&E. This was not high number of units considering the total number of units was 50 from the general mean for all items that was calculated. This contribution was also not statistically significant with a p-value of 0.120. Kusek and Rist, (2004) identified use of data for planning, use of data for decision making and data sharing with stakeholders and important measures of data utilization. In this research, it was found that descriptive analysis did not show if data utilization helped sustain agricultural projects this was supported by inferential analysis which pointed a very small positive relationship between data utilization for M&E and sustainability of agricultural projects. This small relationship was not statistically significant. This study result indicated that organizations did not embrace monitoring and evaluation system in terms of data utilization for M&E. This implies that there was still big need to enhance, embrace and utilize use of data for planning, use of data for decision making and data sharing with stakeholders to ensure effectiveness of on data utilization for M&E since as Kusek and Rist (2014) stated that sharing and comparing results findings with development partners is also beneficial on a number of levels, this statement supports a small correlation between data utilization for M&E and sustainability of agricultural projects as shown in table 4.19.

The result did not emphasize the importance of data utilization for M&E as a significant predictor of sustainability, Kusek and Rist (2014) on the other hand emphasized the importance of data utilization on improvement of projects by establishing that M&E systems provide important feedback about the progress, as well as the success or failure, of projects, programs, and policies throughout their respective cycles. These systems constitute a powerful, continuous public management tool that decision-makers can use to

improve performance, and demonstrate accountability and transparency with respect to results. The researcher therefore concluded this finding by stating that even though data utilization for M&E was not a significant predictor, sustainability improved with increased utilization of data for M&E, therefore, as Kusek and Rist state, this is still an important factor as far as project implementation is concerned.

Despite inferential analysis showing that data utilization don't directly sustain agricultural projects, with the results showing a very small positive relationship between data utilization for M&E and sustainability of agricultural projects which was not statistically significant, views from interview guide were of different direction. In his own words one of the respondents said the following:

*“The main purpose of the M&E system is not simply to produce and share useful and timely information, but to ensure that the information gets the appropriate users to manage and guide resources and intervention which will eventually sustain projects. Therefore, good data is a key foundation to sustainability of agricultural projects*

*The challenge we have is that we have too much needless data which is not organized and most of the data is that is shared is not used to solve problems”*

#### **4.8 Human capacity for monitoring and evaluation and sustainability of agricultural projects.**

This section analyzed the third objective of the study and determined the descriptive statistics on human capacity for monitoring and evaluation, correlation between human capacity for monitoring and evaluation and sustainability of agricultural projects, and regression of human capacity for monitoring and evaluation and sustainability of agricultural projects.

##### **4.8.1 Human capacity for monitoring and evaluation**

Human capacity for monitoring and evaluation was an independent variable drawn from objective three of the study. The study sought to establish the opinion of the respondents on human capacity for monitoring and evaluation as a component of M&E system. Ten items drawn from the questionnaires were analyzed and reported in terms of means and standard deviation. The respondents were asked to rate the statements on the scale of 5 in which 1 denoted strongly disagree, 2 disagree 3 neutral 4 agree and 5 strongly agree. The following scoring was also used: (SD:  $1 < SD < 1.8$ ), (D:  $1.8 < D < 2.6$ ), (N:  $2.6 < N < 3.4$ ), (A:  $3.4 < A < 4.2$ ) and (SA:  $4.2 < SA < 5.0$ ). The mentioned scales give an equidistance of 0.8. The result are presented in table 4.23



**Table 4.23: Distribution of responses on human capacity for monitoring and evaluation**

		<i>N</i>	<i>Mean</i>	<i>Std. Deviation</i>
7a	<i>Human resource employs M&amp;E staff with relevant qualification for M&amp;E positions.</i>	137	2.0657	1.20784
7b	<i>Project M&amp;E staff have excellent knowledge on M&amp;E concepts</i>	137	3.0438	0.88175
7c	<i>My organization have M&amp;E staff with relevant professional M&amp;E qualification</i>	137	1.7445	1.13778
7d	<i>Project M&amp;E staff have excellent hands-on skills required in the implementation of M&amp;E</i>	137	2.7591	0.87888
7e	<i>The organization utilizes technical working group to enhance M&amp;E experience</i>	137	3.9197	1.07141
7f	<i>There are frequent M&amp;E trainings provided for by the organization</i>	137	2.1314	1.14928
7g	<i>My organization encourages the staff for M&amp;E Off-job training</i>	137	1.2409	.57555
7h	<i>My organization encourages the staff for M&amp;E On job training</i>	137	3.3723	1.11149
7i	<i>M&amp;E staff have sufficient M&amp;E experience</i>	137	2.5474	1.21855
7j	<i>My organization effectively utilizes staffs M&amp;E experience</i>	137	2.2336	1.39465

Table 4.23 shows ten items that measure human capacity for M&E, the table presented means and standard deviations. Item 7a sought to determine whether human resource employs M&E staff with relevant qualification for M&E positions. The responses had a mean of 2.0657 and a standard deviation of 1.20784. The mean showed that there was general disagreement by the participants that human resource employs M&E staff with relevant qualification for M&E positions. Participants believed that human resource did not employ M&E staff with relevant qualification for M&E positions. The mean had a small standard deviation which shows a consistency in the participants' responses meaning that there was consensus among participants when responding to this item.

In a study done in Kenya on human capacity by White (2013) on monitoring and evaluation best practices in development, it indicated that institutions encounter a number of

challenges when implementing or managing M&E activities, one being insufficient M&E capacity where M&E staff usually advises more than one project at a time, and have a regional or sectorial assignment with a vast portfolio. Furthermore, Ramesh, (2002), noted that taking on the M&E work of too many individual projects overextends limited M&E capacity and leads to rapid burnout of M&E staff whereby high burnout and turnover rates make recruitment of skilled M&E staff difficult, and limits the organizational expertise available to support M&E development. Mibey (2011) study on factors affecting implementation of monitoring and evaluation programs in *kazikwakijana* project, recommends that capacity building should be added as a major component of the project across the country (Kenya), and this calls for enhanced investment in training and human resource development in the crucial technical area of monitoring and evaluation. This indicates that recruitment of skilled M&E staff is important an implication that failure recruitment of skilled M&E staff might negatively influence sustainability of agricultural projects.

Item 7b sought to establish whether M&E staff possessed excellent knowledge on M&E concepts. The responses had a mean of 3.0438 and a standard deviation of 0.88175. The mean showed that there was general neutral opinion by the participants that M&E staff possessed excellent knowledge on M&E concepts. Participants neither agreed nor disagreed that M&E staff did possessed excellent knowledge on M&E concepts. Though the mean had a relatively large standard deviation as shown by inconsistency in the participants' responses which meant that there was little consensus among participants when responding to this item. Researcher went further to determine whether more distribution of responses on this item. This called for computation of frequencies to find out where the majority of the participants said. Frequency distribution showed that out 137 participants that responded to this item, 45 said that M&E staff did not possess excellent knowledge on M&E concepts, 46 were neutral, while 46 said that M&E staff actually possessed excellent knowledge on M&E concepts. The frequency distribution show that despite general neutrality among participants on this item, 46 participants, which is a similar number to total neutral responses was skewed towards agreeing that M&E staff had

excellent knowledge on M&E concepts. Further analysis from one of the respondents said the following:

*“.....complete M&E capability is seen lacking among many individuals who apply for M&E jobs and even those who manage to get those jobs don't entirely prove capable, but we always hope they will learn on job .....it calls for continuous M&E training....”*

This results relates with the work of Gorgens,(2010) who noted that understanding the skills needed and the capacity of people involved in the M&E system and addressing capacity gaps through structured capacity development programs is at the heart of the M&E system. The same results also noted that the lack of capacity in low-income countries is one of the main constraints to achieving the Millennium Development Goals. Researcher therefore concluded that failure to possess M&E concepts might have a negative influence on sustainability of agricultural projects therefore, more should be done to map and make sure that M&E staff have the required skills. According to (Gosling & Edwards, 2013) there is a constant demand for training in planning, monitoring, review, evaluation and impact assessment for both program staff and partners in projects, Arcury(2017). Also noted that skills for numeracy, literacy, interviewing and monitoring in qualitative and quantitative methods, for management information systems were necessary.

Item 7c sought to establish the extent to which the organization had M&E staff with relevant professional M&E qualification. The responses had a mean score of 1.7445 with a standard deviation of 1.13778. The mean showed that there was general disagreement by the participants that organization had M&E staff with relevant professional M&E qualification. This shows that participants believed that organization did not have M&E staff with relevant professional M&E qualification. The mean had a very small standard deviation as shown by consistency in the participants' responses which meant that there was very high consensus among participants when responding to this item. When responding to challenges and issues on human capacity for M&E one of the project managers said the following.

*“Majority of employment seekers for M&E jobs and even our M&E staff have academic qualifications that are unrelated to M&E, most of them have ideas of M&E from a single course-unit pursued at school ....very few have pursued a professional paper to equip them with necessary M&E hands on skills ....”*

Item 7d sought to establish the extent to which the project M&E staff had excellent hands-on skills required in the implementation of M&E. The response had a mean score 2.7591 while the standard deviation was 0.87888. The mean showed that participants were of neutral opinion when asked about M&E staff having excellent hands-on skills required in the implementation of M&E. The result a very small standard deviation which means that data was not spread away to the mean, implying that participants did not have varied opinion rather a consensus on the issue which could be seen in the consistency in responses provided for by participants on this item.

Researcher was still interested in finding out more on distribution of responses on this item, this called for frequency testing. The test showed that out of 137 participants that respondent to this item, a total of 73 participants said that M&E staff did not have excellent hands-on skills required in the implementation of projects, a total of 40 participants said that M&E staff had excellent hands-on skills required in the implementation of projects while 24 participants were neutral. This distribution of responses also shows that responses were skewed towards disagreeing, meaning that M&E staff did not have excellent hands-on skills required in the implementation of M&E. This result is also supported by the words of one of the project managers who said the following:

*“.....Our M&E staff have academic qualifications that are unrelated to M&E, most of them have ideas of M&E from a single course-unit pursued at school ....very few have pursued a professional paper to equip them with necessary M&E hands-on skills ....”*

This results relates with the work of Gorgens, (2010) which noted that lack of M&E capacity in low-income countries is one of the main constraints to achieving the Millennium Development Goals. Researcher therefore concluded that lack of hands-on skills required in the implementation of projects might have a negative influence on sustainability of agricultural projects therefore; more should be done to equip M&E staff with required skills.

Item 7e sought to establish whether organizations utilized technical working group to enhance M&E experience. The response had a mean score of 3.9197 and a standard deviation of 1.07141. The mean showed that there was a general agreement by participants that organizations actually utilized technical working group to enhance M&E experience. The result had a large standard deviation which means that data was spread away from the mean, implying that participants had varied opinion rather a consensus on the issue which could be seen in the inconsistency in responses provided for by participants on this item.

Item 7f sought to establish whether organizations provided frequent M&E trainings. The response had a mean score of 2.1314 and a standard deviation of 1.14928. The mean showed that there was a general disagreement by participants that organizations provided frequent M&E trainings. The result had a small standard deviation which means that data was not spread away to the mean, implying that participants did not have varied opinion rather a consensus on the issue which could be seen in the consistency in responses provided for by participants on this item

Wysocki&McGary, (2013), noted that regardless of how experienced individual members are, once a team to implement a project has been identified, training and capacity building for M&E reporting is important. This, it has been observed, enhances understanding of the project deliverables, reporting requirements and builds the team together. This is also supported by Gorgens&Kusek, (2013) who stated that generally, everybody involved in project implementation is also involved in the implementation of M&E, including partners, and should receive training. Training of implementers in M&E is deliberately participatory

to ensure that those responsible for implementing and using the system are familiar with its design, intent, focus, and how to use the M&E tools. This implies that training of project implementers is important and Lack of training provision might negatively influence sustainability of agricultural projects.

Item 7g sought to establish the extent to which the organization encourages the staff for an M&E off-job training. The responses had a mean score was *1.2409* while the standard deviation was *0.57555*. The mean showed that there was a general disagreement by participants who believes that organizations does not encourage the staff for an M&E off-job training. The result had a small standard deviation which means that data was not spread away to the mean, implying that participants did not have varied opinion rather a consensus on the issue which could be seen in the consistency in responses provided for by participants on this item

Item 7h sought to establish the extent to which the organization encourages the staff for an M&E on-job training. The responses had a mean score was *3.3723* while the standard deviation was *1.11149*. The mean showed that participants were of neutral opinion when asked whether organization encourages the staff for an M&E on-job training. The result had a relatively large standard deviation which means that data was spread away to the mean, implying that participants had varied opinion rather a consensus on the issue which is shown by lack of consistency in responses provided for by participants on this item. Researcher was still interested in finding out more on distribution of responses on this item, this called for frequency testing. The test showed that out of 137 participants that responded to this item, 30 participants said that organization does not encourage the staff for an M&E on-job training while a total of 88 participants which was the majority said that organization encourages the staff for an M&E on-job training. The frequency distribution shows that even though the mean showed a general neutral opinion, most of the responses were skewed towards agreeing that organizations actually encourages the staff for an M&E on-job training.

Item 7i sought to establish whether M&E staff have sufficient M&E experience. The response had a mean score of 2.5474 and a standard deviation of 1.21855. The mean showed that there was a general disagreement by participants that M&E staff have sufficient M&E experience. This shows that participants believed that M&E staff do not have sufficient M&E experience. The result had a large standard deviation which means that data was spread away from the mean, implying that participants had varied opinion rather a consensus on the issue which could be seen in the inconsistency in responses provided for by participants on this item. Item 7j sought to establish whether organizations effectively utilizes staffs M&E experience. The response had a mean score of 2.2336 and a standard deviation of 1.39465. The mean showed that there was a general disagreement by participants that organizations effectively utilizes staffs M&E experience. This shows that participants believed that organizations did not effectively utilize staffs M&E experience. The result had a large standard deviation which means that data was spread away from the mean, implying that participants had varied opinion rather a consensus on the issue which could be seen in the inconsistency in responses provided for by participants on this item.

Researcher further sought to establish the general mean using actual scores that ranged from 50 (5x10) indicating strongly agree and 10 (1x10) indicating strongly disagree when each values attached to each response were multiplied with the number of total items. The general mean for all items in table 4.23 was found to be 25.0584 with a standard deviation of 3.97930. The value of general mean showed that there was an overall neutral opinion by the participants about the utilization human capacity for M&E. The mean had a small standard deviation which shows a consensus among participants on this issue. Results of the interview guides emphasized that there was lack of keen attention on M&E knowledge to the staff. Project managers said that majority of job seekers for M&E jobs and even the M&E staff had academic qualifications that are unrelated to M&E, most of them have ideas of M&E from a single course-unit pursued at school, that very few have pursued a professional paper to equip them with necessary M&E hands on skills.

In a study done in Kenya on human capacity by White (2013) on monitoring and evaluation best practices in development, it indicated that institutions encounter a number of challenges when implementing or managing M&E activities, one being insufficient M&E capacity where M&E staff usually advises more than one project at a time, and have a regional or sectorial assignment with a vast portfolio.

Furthermore, Ramesh, (2002), noted that taking on the M&E work of too many individual projects overextends limited M&E capacity and leads to rapid burnout of M&E staff whereby high burnout and turnover rates make recruitment of skilled M&E staff difficult, and limits the organizational expertise available to support M&E development. Mibey (2011) study on factors affecting implementation of monitoring and evaluation programs in *kazikwakijana* project, recommends that capacity building should be added as a major component of the project across the country (Kenya), and this calls for enhanced investment in training and human resource development in the crucial technical area of monitoring and evaluation.

As noted by Gorgens&Kusek, (2013), the lack of monitoring and evaluation human capacity in low-income countries is one of the main constraints to achieving the Millennium Development Goals (the now sustainable development goals). Yet, this study reflects the first and the second sustainable development goals (SDG) which is end of extreme poverty, including absolute income poverty (\$1.25 or less per day) and end hunger, achieve food security and improved nutrition, and promoting sustainable agriculture. Ending extreme poverty, including absolute income poverty (\$1.25 or less per day) is measured by among others the percentage of population living below a country's poverty line while ending hunger, achieving food security and improved nutrition, and promoting sustainable agriculture is measured by among others, crop yield gap (actual yield as % of attainable yield). This implies that human capacity for M&E is important in the sustainability of agricultural projects.



#### 4.8.1.1 Descriptive analysis of the influence of human capacity for monitoring and evaluation on sustainability of agricultural projects funded by NGOs

The results from table 4.23 showed a neutral opinion by the respondents on items that measured if organizations had a well-established M&E system in terms of human capacity for monitoring and evaluation. Despite lack utilization of human capacity for monitoring and evaluation, researcher was also interested in determining the beliefs and opinions of participants on the influence of human capacity for monitoring and evaluation on sustainability of agricultural projects. They were asked to select the number that best represents their opinion using 5-point scale. Each construct that measured human capacity for monitoring and evaluation formed a research item. Results are tabulated in table 4.24

**Table 4.24: Distribution of responses on the influence of human capacity for M&E on sustainability of agricultural projects**

		<i>N</i>	<i>Mean</i>	<i>SD</i>	<i>Maximum</i>	<i>Minimum</i>
<b>7.1a</b>	Possession of high M&E qualifications help sustain agricultural projects	<b>137</b>	2.6496	1.07506	<b>5</b>	<b>1</b>
<b>7.1b</b>	Frequent M&E trainings helps sustain agricultural projects	<b>137</b>	3.5985	1.13410	<b>5</b>	<b>1</b>
<b>7.1c</b>	M&E experience helps sustain agricultural project	<b>137</b>	4.2117	0.71157	<b>5</b>	<b>4</b>

Table 4.24 shows means and standard deviation for items that determine whether human capacity for M&E influences sustainability of agricultural projects. Item 7.1a sought to establish whether or not having high M&E qualifications helps sustain agricultural projects funded by NGOs, this item had mean of 2.6496 which shows a neutral response and a standard deviation of 1.07506. This shows that participant were neutral when asked if

having high M&E qualifications helps sustain agricultural projects funded by NGOs. Item 7.1b sought to establish whether or not frequent M&E trainings helps sustain agricultural projects, the item had mean of 3.5985 which shows an agreement. The mean had a standard deviation of 1.13410. This result shows that participants were in agreement that frequent M&E training helped sustain agricultural projects. Item 7.1c Sought to establish whether or not M&E experience helped sustain agricultural projects and had a mean of 4.2117 which means agreement. It implied that participants agreed that M&E experience helped sustain agricultural projects funded by NGOs. The items had a general mean 10.4599 and standard deviation of 1.85113. This shows that majority of the respondents were not sure whether or not that human capacity for M&E influences sustainability of agricultural projects in terms of sustaining it. The result had a large standard deviation showing that participants were not in complete consensus when responding to this item. The results shows that despite the importance of human capacity for M&E as brought out in table 4.23, participants were still unsure if it helps sustain agricultural projects. More analysis to determine the relationship between human capacity for monitoring and evaluation and sustainability of agricultural projects is tabulated in table 4.27

**Table 4.25: Distribution of responses on M&E staff academic qualification**

7k	Which of the following academic qualifications do you have?	F	%
	PhD	0	0
	Masters	0	0
	Degree	2	15
	Diploma	7	54
	Certificate	4	31
	Total	13	100%

The researcher went ahead to ask M&E officers if they possessed an academic qualification. Out of 13 M&E staff that was selected for the study, none had PhD, none had masters while only 2(15%) had a degree,7(54%) had diploma while 4(31%) had certificates. This implies that majority of the M&E personnel were diploma holders.

**Table 4.26: Distribution of dichotomous responses on academic and professional qualification**

	Measurement Item	YES	%	NO	%
7l	I have a professional certificate in M&E?	1	8	12	92
7m	Have you had any M&E training by AMREF, KIM, MEASURE evaluation, and global health eLearning center	2	15	11	85
7n	I belong to an M&E professional Body for example ESK	0	0	13	100
7o	I belong to a Community of Practice (CoP)	1	8	12	92

The researcher also went ahead to ask M&E officers if they possessed professional qualification. Out of 13(100%) only 1(8%) had acquired a professional certificate while 12(92%) did not have the professional qualification. When asked if they had any training by AMREF, KIM, MEASURE evaluation, and global health eLearning center, only 2(15%) said yes while 11(85%) said no. When asked if they belong to an M&E professional Body for example Evaluation society of Kenya, all 13(100%) M&E staff said no. and when asked if they belonged to a community of practice (CoP), only 1(8%) said yes while 12(92%) said no. This results shows that M&E staff were not in constant improvement of their skills. This result agrees with the work of (Mutekhele, Rambo, Ongati, & Nyonje, 2018) which found that 37(35.6%) of committee members had attended an M&E Course while 67(64.4%) had not attended any M&E course. It found that majority of the committee members had not attended any course in M&E implying that committee members lacked the capacity for M&E hence poor performance of educational building infrastructural projects.

M&E skills has been proved to be important by Gosling & Edwards, (2013) who noted that there was a constant demand for training in planning, monitoring, review, evaluation and impact assessment for both program staff and partners in projects, the same study noted that skills for numeracy, literacy, interviewing and monitoring in qualitative and

quantitative methods, for management information systems are necessary for participatory monitoring and evaluation. Also, Davidson, (2014) noted that staff need to be trained not only on collecting descriptive information about a program, product, or any other entity but also on using something called “values” to determine what information and to draw explicitly evaluation inferences from the data, that is, inferences that say something about the quality, value or importance of something. This implies that human capacity for M&E is important in the sustainability of agricultural projects.

#### **4.8.2 Relationship between human capacity for monitoring and evaluation and sustainability of agricultural projects**

The study sought to establish the relationship between human capacity for M&E and sustainability of agricultural projects. The study also tested the null hypothesis that there is no significant relationship between human capacity for M&E and the sustainability of agricultural projects. Both correlation index ( $r$ ) and p-value were computed as shown and presented as shown in table 4.27

**Table 4.27: Correlations of Human capacity for M&E for M&E and sustainability of agricultural projects funded by NGOs**

		<b>Correlations</b>	
		Human capacity for M&E	Sustainability of agricultural projects
Human capacity for M&E	Pearson Correlation	1	.115
	Sig. (2-tailed)		.179 <sup>b</sup>
	N	137	137
Sustainability of agricultural projects	Pearson Correlation	.115	1
	Sig. (2-tailed)	.179 <sup>b</sup>	
	N	137	137

Table 4.27 shows a correlation index  $r = 0.115$ . This shows a small positive correlation between human capacity for M&E and sustainability of agricultural projects. This implied that the more the organization embraced human capacity for M&E the more agricultural projects were sustained. Further analysis sought to test null hypothesis:

H<sub>0</sub>: There is no significant relationship between human capacity for M&E and sustainability of agricultural projects

The p-values was found to be  $p = 0.179$  at 0.05 level of significant. This led to a fail to reject null hypothesis that human capacity for M&E has no significant relationship with sustainability of agricultural projects.

### 4.8.3: Regression analysis of human capacity for M&E on sustainability of agricultural projects

The study also sought to establish how much human capacity for M&E explained variation in the sustainability of agricultural project through regression analysis. The model and the key that used was as follows:

$$y = \alpha + \beta X + \varepsilon$$

y= Sustainability of agricultural projects  
 a=constant (Y-intercept)  
 $\beta$ = Beta coefficient  
 X= Human capacity for M&E  
 e= error term

This was presented in tables 4.28

**Table 4.28: Model Summary for human capacity for M&E and sustainability of agricultural projects**

Model	R	R Square	Model Summary	
			Adjusted R Square	Std. Error of the Estimate
1	.115 <sup>a</sup>	.013	.006	3.69768

a. Predictors: (Constant), Human capacity for M&E

Table 4.28 shows a Pearson r of 0.115<sup>a</sup> which indicates a small positive correlation exhibited between the various bivariate variables implying that the more the organizations embraced human capacity for M&E the more agricultural projects were sustained. This confirms the correlations value in table 4.27. The results also shows an  $R^2$  of 0.013 which means that 1.3 % of the variability of the response variable which was sustainability of agricultural projects was accounted for by human capacity for M&E as a component of monitoring and evaluation system. This is a small value for  $R^2$  therefore it's insignificant.  $R^2$  value is given by the following equation.

$$R^2 = \frac{\varepsilon (Estimate - Mean)^2}{\varepsilon (Actual - Mean)^2} = \text{Regression Sum of Squares} / \text{Total Sum of Squares}$$

**Table 4.29: ANOVA table for human capacity for M&E and sustainability of agricultural projects**

ANOVA <sup>a</sup>						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	24.912	1	24.912	1.822	.179 <sup>b</sup>
	Residual	1845.828	135	13.673		
	Total	1870.740	136			

a. Dependent Variable: Sustainability of agricultural projects  
b. Predictors: (Constant), Human capacity for M&E

Table 4.29 shows an F-statistic of 1.822 with a p-value of 0.179<sup>b</sup>.  $F = (1,135) = 1.822$ ,  $p = 0.179$ ,  $R^2 = 0.013$ . It shows that the regression model hence the variability that was explained for was not statistically significant since the calculated p-value was  $> 0.05$  therefore the null hypothesis which states that there is no significant relationship between human capacity for M&E and sustainability of agricultural projects was not rejected. The model  $\gamma = \alpha + \beta_1 X_1 + \beta_2 X_2 + \varepsilon$  was not found to be fit since the predictor variable accounted for only 1.3% of the variability of outcome variable and which was not statistically significant

**Table 4.30: Coefficients table for human capacity for M&E and sustainability of agricultural projects**

Coefficients <sup>a</sup>						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	24.396	2.022		12.068	.000
	Human capacity for M&E	.108	.080	.115	1.350	.179

a. Dependent Variable: Sustainability of agricultural projects

Table 4.30 works by substituting the beta value as well as the constant term, the proceeding regression equation model was as follows:

$$Y = 24.396 + 0.108\chi_3$$

The results in table 4.30 shows that a unit increase in the value of human capacity for M&E increased the value of sustainability of agricultural projects by 0.108 times holding other variables constant totaling to 24.504 units for a unit increase in the value of human capacity for M&E. This was not high number of units considering the total number of units was 50 from the general mean for all items that was calculated. This contribution was also not statistically significant with a p-value of 0.179. Despite correlation and regression analysis showing lack of generalization that human capacity for M&E influences sustainability of agricultural projects, views from interview guide were of different direction. One of the projects managers said the following:

*“Staff capacity in terms of relevant skills for M&E system is at the heart of the project sustainability.....it requires M&E fundamental skills for anyone to know what to do in order to improve chances of project sustainability..... Lack of capacity in my organization is one of the main constraints to achieving the sustainability of agricultural project”*

Another project manager said the following

*“We have limited budget to hire M&E experts with good experience and when we get a good M&E person then it’s difficult to maintain them so we are suffering from frequent M&E employee turnovers”*

Different scholars have emphasized the importance of human capacity for M&E, for instance, a study conducted by UNDP, (2009) established that M&E staff should be skilled in identifying good practices, capacity development needs of junior staff and stakeholders



regarding M&E; as well as assessing the relevance of M&E frameworks regularly, based on emerging development priorities and changing contexts. In view of this, most organizations and government departments should often recruit specialists to guide M&E activities. More still, Lacey (2005) notes that human resource capacity for effective M&E systems also require appropriate policies and standards, which clarify roles, responsibilities, and accountabilities. Also, a study conducted by Gosling & Edwards, (2013) noted that there was a constant demand for training in planning, monitoring, review, evaluation and impact assessment for both program staff and partners in projects. The study also noted that skills for numeracy, literacy, interviewing and monitoring in qualitative and quantitative methods, for management information systems are necessary for participatory monitoring and evaluation. Davidson, (2014) noted that staff need to be trained not only on collecting descriptive information about a program, product, or any other entity but also on using something called “values” to determine what information and to draw explicitly evaluation inferences from the data, that is inferences that say something about the quality, value or importance of something.

The results in the third objective concludes that even though inferential results indicated that human capacity for M&E do not directly help sustain of agricultural projects, while descriptive analysis was neutral on the issue, it is still important to have M&E staff who have the required skills and knowledge on M&E. This argument is supported by qualitative result that emphasized the importance of M&E skills in project implementation.

#### 4.9 Routine program monitoring and sustainability of agricultural projects.

This section analyzed the fourth objective of the study and determined the descriptive statistics on routine program monitoring, correlation between routine program monitoring and sustainability of agricultural projects, and regression of routine program monitoring and sustainability of agricultural projects.

##### 4.9.1 Routine program monitoring

Routine program monitoring was an independent variable drawn from objective four of the study. The study sought to establish the opinion of the respondents on routine program monitoring as a component of M&E system. Ten items drawn from the questionnaires were analyzed and reported in terms of means and standard deviation. The respondents were asked to rate the statements on the scale of 5 in which 1 denoted strongly disagree, 2 disagree 3 neutral 4 agree and 5 strongly agree. The following scoring was also used: (SD:  $1 < SD < 1.8$ ), (D:  $1.8 < D < 2.6$ ), (N:  $2.6 < N < 3.4$ ), (A:  $3.4 < A < 4.2$ ) and (SA:  $4.2 < SA < 5.0$ ). The mentioned scales give an equidistance of 0.8.

The result are presented in table 4.31

**Table 4.31: Distribution of responses on routine program monitoring**

	<i>N</i>	<i>Mean</i>	<i>Std. Deviation</i>
<i>8a Monitoring system used to report project progress is well defined</i>	<i>137</i>	<i>3.3066</i>	<i>1.21608</i>
<i>8b Monitoring is used to alert project managers of project deviations</i>	<i>137</i>	<i>3.2993</i>	<i>1.14638</i>
<i>8c Project progress is reported frequently</i>	<i>137</i>	<i>3.5401</i>	<i>1.25449</i>
<i>8d Alerting project managers of project deviations is important</i>	<i>137</i>	<i>4.2701</i>	<i>1.12134</i>
<i>8e Project managers takes necessary actions to avert project deviations</i>	<i>137</i>	<i>2.1971</i>	<i>1.20562</i>
<i>8f The organization monitors project impacts</i>	<i>137</i>	<i>2.0876</i>	<i>1.20949</i>
<i>8g The organization uses outcome monitoring to gauge the achievement of results</i>	<i>137</i>	<i>2.2190</i>	<i>1.23500</i>
<i>8h The organization monitors project outputs regularly</i>	<i>137</i>	<i>4.0584</i>	<i>1.24715</i>
<i>8i Organizational monitoring strategies are effective</i>	<i>137</i>	<i>2.0146</i>	<i>1.26017</i>
<i>8j Frequent monitoring of results is important</i>	<i>137</i>	<i>4.2409</i>	<i>.98164</i>

Table 4.31 shows ten items that measure routine program monitoring, the table presented means and standard deviations.

Item 8a sought to establish whether monitoring system used to report project progress was well defined in the organization. This item had a mean of 3.3066 and standard deviation of 1.21608. The mean showed that participants were of neutral opinion when asked about availability of a well-defined monitoring system used to report project progress. The result a large standard deviation which means that data was spread away to the mean, implying that participants had varied opinion rather a consensus on the issue which could be seen in the inconsistency in responses provided for by participants on this item. Researcher was still interested in finding out more on distribution of responses on this item, which called for frequency testing. The test showed that out of 137 participants that respondent to this item, a total of 36 participants said that there was no well-defined monitoring system used to report project progress, then 73 of the participants which was majority said that a well-defined monitoring system used to report project progress was available. This result indicates that despite having a general neutral opinion on the item, majority of responses were skewed towards agreeing that there was a well-defined monitoring system used to report project progress.

Results from interview guide as responded by project managers supported the quantitative result. There was a general mixed responses from key informants when they were asked to comment on the status of monitoring as used to track project progress. They also emphasized the importance of routine monitoring on the sustainability of agricultural projects. One of the project managers in an open ended response stated the following:

*“Indeed we have a well spelt out monitoring system in our organization.....We would not have an idea of project progress without monitoring. It is an important management tool to enable us takes proper action as we track the results..... The problem is the use of collected data, sometimes it is not put to right use”*

This qualitative result provides more insight on item 8a. It informs that monitoring system was available however how the data is used after collection is the challenge. A study conducted by (Zairi, 2005) stated that routine program monitoring generally meant to be aware of the state of a system, to observe a situation for any changes which may occur over time, using a monitor or measuring device of some sort, this emphasizes the importance of monitoring. Khan, (2003) stated that monitoring was an essential process of organizational basic support system that could provide valuable information on the ongoing operations of the organization and on relevant program issues for the management, particularly the program development officers to make accurate and timely decisions.

Item 8b sought to establish whether monitoring was used to alert project managers of project deviations. The item had a mean of 3.2993 and standard deviation of 1.14638. The mean showed that participants were of neutral opinion when asked whether monitoring was used to alert project managers of project deviations. The result a large standard deviation which means that data was spread away to the mean, implying that participants had varied opinion rather a consensus on the issue which could be seen in the inconsistency in responses provided for by participants on this item. Researcher went further to find more on distribution of responses on this item, which called for frequency testing. The test showed that out of 137 participants that responded to this item, a total of 35 participants said that monitoring was not used to alert project managers of project deviations then 75 of the participants which was majority said that a monitoring was used to alert project managers of project deviations. The result indicates that despite having a general neutral opinion on the item, majority of responses were skewed towards agreeing that monitoring was indeed used to alert project managers of project deviations

Results from interview guide as responded by project managers emphasized the importance of having a monitoring system in the organization so as to understand project progress. However, the project managers said that there was a huge challenge in the use or utilization of the collected data, consequently data is not put to right use. As reported by Khan, (2003) monitoring is an essential process of organizational basic support system that could provide valuable information on the ongoing operations of the organization and on relevant

program issues for the management, particularly the program development officers to make accurate and timely decisions. This implies that the use of monitoring to alert project managers of project deviations is important for the sustainability.

Item 8c sought to establish whether project progress was reported frequently. This item had a mean of 3.5401 and standard deviation of 1.25449. The mean showed that there was a general agreement by participants that project progress was reported frequently although the result had a large standard deviation which means that data was spread away to the mean, implying that participants had varied opinion rather a consensus on the issue which could be seen in the inconsistency in responses provided for by participants on this item.

Item 8d sought to establish whether alerting project managers of project deviations is important. The item had a mean of 4.2701 and standard deviation of 1.12134. The mean showed that there was a general agreement by participants that alerting project managers of project deviations was important. The result had a small standard deviation which means that data was not spread away to the mean, implying that participants did not have varied opinion rather a consensus on the issue which could be seen in the inconsistency in responses provided for by participants on this item.

Item 8e sought to establish whether project managers take necessary actions to avert project deviations. The item had a mean of 2.1971 and standard deviation of 1.20562. The mean showed that project managers did not take necessary actions to avert project deviations. The result had a small standard deviation which means that there was a consensus on this issue. Item 8f sought to establish if the organization monitors project impacts. The item had a mean of 2.0876 and standard deviation of 1.20949. The means shows that organizations did not monitor impacts. The small standard deviation shows that participants had a consensus on this item. Item 8g sought to establish whether organization uses outcome monitoring to gauge the achievement of results. The item had a mean of 2.2190 and standard deviation of 1.23500. The mean shows that outcome monitoring was not used to gauge achievements of results. Large standard deviation shows that participants did not have consensus on this item.

Item 8h sought to establish if the organization monitors project outputs regularly. The item had a mean of 4.0584 and standard deviation of 1.24715. The mean shows that outputs were monitored regularly. Item 8i sought to establish whether organizational monitoring strategies are effective. The item had a mean of 2.0146 and standard deviation of 1.26017. The mean shows that organizational monitoring strategies were not effective. The mean had a small standard deviation which shows a consensus among participant when responding to this item.

Item 8j sought to establish whether frequent monitoring of results is important for the stability of M&E system. The item had a mean of 4.2409 and standard deviation of .98164. The mean showed that frequent monitoring of results was important for the stability of M&E system. The mean has a very small standard deviation implying that there was a consensus among participants when responding to this item. The general mean score for all items was 31.2336 with general standard deviation of 4.82984. The implication of this mean score and standard deviation in respect to the study is that there was general agreement in opinion among participants that organizations utilized monitoring and evaluation system in terms of routine program monitoring. This means that routine monitoring was utilized.

The results from interview guides supported the quantitative results, by agreeing that organization indeed utilized monitoring as required. Project managers were convinced that organizational monitoring system was in good condition, the only challenge that was expressed by project managers concerning monitoring is the utilization of collected data to make corrective measures. It was said that data collected from monitoring was rarely used to make project improvements. Researcher therefore concluded by noting that data collection without proper use is useless and waste of important resources, just like Patton (2008), who argued that monitoring and evaluation can be strong in terms of design and methodology however if the results are not utilized, it remains a bad evaluation.

Consequently, the researcher implies that, even though monitoring was conducted, lack of utilization of monitoring data to make corrective measures might negatively influence sustainability of agricultural projects. This implication agrees with the work of Kontinen and Robinson (2010) which noted that when monitoring faces various challenges, its effectiveness is at stake hence impacting on the project success. Project success in this regard according to Nuguti (2009) is impact, capacity development and project sustainability.

#### **4.9.1.1 Descriptive analysis of routine program monitoring and sustainability of agricultural projects funded by NGOs**

Researcher was also interested in determining the beliefs and opinions of participants on the influence of routine program monitoring on sustainability of agricultural projects. They were asked to select the number that best represents their opinion using 5-point scale. Each construct that measured routine program monitoring formed a research item. Results are tabulated in table 4.32

**Table 4.32: Distribution of responses on the influence of routine program monitoring on sustainability of agricultural projects**

	<i>N</i>	<i>Mean</i>	<i>SD</i>
<b>8.1a</b> <i>Use of monitoring to track project progress help sustain agricultural projects</i>	<b>137</b>	4.2336	1.38406
<b>8.1b</b> <i>monitoring of impact helps sustain agricultural projects</i>	<b>137</b>	3.0876	1.17244
<b>8.1c</b> <i>monitoring of outcome helps sustain agricultural projects</i>	<b>137</b>	3.1679	1.24007
<b>8.1d</b> <i>monitoring of output helps sustain agricultural project</i>	<b>137</b>	2.7737	1.03606
<b>8.1e</b> <i>Effective monitoring strategies helps sustain agricultural projects</i>	<b>137</b>	4.2117	1.01046

Table 4.32 shows the descriptive analysis for the influence of routine program monitoring on the sustainability of agricultural projects. The items had a general mean of 17.4745 and general standard deviation of 3.81190. This shows lack of certainty by the participants whether or not that routine program monitoring helps sustain agricultural projects. Item 8.1a sought to establish whether or not use of monitoring to track project progress helps to sustain agricultural projects. The item had a mean of 4.2336 and standard deviation of 1.38406 which implied that participants agreed that use of monitoring to track project progress helps sustain agricultural projects. Item 8.1b sought to establish whether or not monitoring of impact helps sustain agricultural projects, the item had a mean of 3.0876 and standard deviation of 1.1724 which implied that participants were not sure whether or not monitoring of impact helps sustain agricultural projects. Item 8.1c sought to establish whether or not monitoring of outcome helps sustain agricultural projects by NGOs, the item had a mean of 3.1679 and standard deviation of 1.24007 which implied that participants were also not sure if monitoring of outcome helps sustain agricultural projects. Item 8.1d sought to establish whether or not monitoring of output helps sustain agricultural projects that are funded by NGOs, the item had a mean of 2.7737 and standard deviation of 1.03606 which implied that participants were of neutral opinion on whether or not monitoring of output helps sustain agricultural projects. Item 8.1e sought to establish whether or not effective monitoring strategies help sustain agricultural projects that are funded by NGOs, the item had a mean of 4.2117 and standard deviation of 1.01046 which implied that participants agreed that effective monitoring strategies help sustain agricultural projects. To understand more on the relationship between routine program monitoring and sustainability of agricultural projects, researcher went ahead to determine the correlation and regression.

#### **4.9.2 Relationship between routine program monitoring and sustainability of agricultural projects**

The study sought to establish the relationship between routine program monitoring and sustainability of agricultural projects. The study also tested the null hypothesis that there is no significant relationship between routine program monitoring and the sustainability of



agricultural projects. Both correlation index (r) and p-value were computed as shown and presented as shown in table 4.33

**Table 4.33: Correlations between routine program monitoring and sustainability of agricultural projects**

		<b>Correlations</b>	
		Sustainability of agricultural projects	Routine program monitoring
Sustainability of agricultural projects	Pearson Correlation	1	.059
	Sig. (2-tailed)		.491
	N	137	137
Routine program monitoring	Pearson Correlation	.059	1
	Sig. (2-tailed)	.491	
	N	137	137

Table 4.33 shows a correlation index  $r= 0.059$ . This shows a very weak positive correlation between routine program monitoring and sustainability of agricultural projects. Further, the analysis sought to test null hypothesis:

H0: There is no significant relationship between routine program monitoring and sustainability of agricultural projects

The p-values was found to be  $p=0.491$  at 0.05 level of significant. This led to a fail to reject null hypothesis that routine program monitoring has no significant relationship with sustainability of agricultural projects.

#### **4.9.3: Regression analysis of routine program monitoring on sustainability of agricultural projects**

The study also sought to establish how much routine program monitoring explained variation in the sustainability of agricultural project through regression analysis. The model and the key that used was as follows:

$$y = \alpha + \beta X + \varepsilon$$

y= Sustainability of agricultural projects  
 a=constant (Y-intercept)  
 β= Beta coefficient  
 X= Routine program monitoring  
 e= error term

This was presented in tables 4.33

**Table 4.34: Model Summary for routine program monitoring and sustainability of agricultural projects**

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.059 <sup>a</sup>	.004	-.004	3.71600

a. Predictors: (Constant), Routine program monitoring

Table 4.34 shows a Pearson r of 0.059<sup>a</sup> which indicates a very weak positive correlation exhibited between the various bivariate variables. This confirms the correlations value in table 4.33. The results also shows an  $R^2$  of 0.004 which means that 0.4% of the variability of the response variable which was sustainability of agricultural projects was accounted for by routine program monitoring as a component of monitoring and evaluation system. This is a very small value for  $R^2$  therefore it's insignificant.  $R^2$  value is given by the following equation.

$$R^2 = \frac{\varepsilon (Estimate - Mean)^2}{\varepsilon (Actual - Mean)^2} = \text{Regression Sum of Squares / Total Sum of Squares}$$

**Table 4.35: ANOVA table for routine program monitoring and sustainability of agricultural projects**

		ANOVA <sup>a</sup>				
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	6.574	1	6.574	.476	.491 <sup>b</sup>
	Residual	1864.167	135	13.809		
	Total	1870.740	136			

a. Dependent Variable: Sustainability of agricultural projects  
b. Predictors: (Constant), Routine program monitoring

Table 4.35 shows an F-statistic of 0.476 with a p-value of 0.491<sup>b</sup>. This is reported as  $F = (1,135) = 0.476, p = 0.491, R^2 = .004$ . It shows that the regression model hence the variability that was explained for was not statistically significant since the calculated p-value was  $> 0.05$  therefore the null hypothesis which states that there is no significant relationship between routine program monitoring and sustainability of agricultural projects was not rejected. The model  $\gamma = \alpha + \beta\chi^4 + \varepsilon$  was not found to be fit since the predictor variable accounted for only 0.4% of the variability of outcome variable and which was not statistically significant.

**Table 4.36: Coefficients between routine program monitoring and sustainability of agricultural projects**

		Coefficients <sup>a</sup>			t	Sig.
Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta		
1	(Constant)	23.123	2.085		11.090	.000
	Routine program monitoring	.046	.066	.059	.690	.491

a. Dependent Variable: sustainability of agricultural projects

Table 4.36 works by substituting the beta value as well as the constant term, the proceeding regression equation model was as follows:

$$Y = 23.123 + .046\chi^4$$

The results in table 4.36 shows that a unit increase in the value of routine program monitoring increased the value of sustainability of agricultural projects by 0.046 times holding other variables constant totaling to 23.583 units for a unit increase in the value of routine program monitoring. This was not high number of units considering the total number of units was 50 from the general mean for all items that was calculated. This contribution was also not statistically significant with a p-value of 0.491.

Inferential analysis pointed to a weak positive relationship between routine program monitoring and sustainability of agricultural projects that could not be inferred due to large error level. Descriptive analysis showed a neutral result on the same. The views of one project manager regarding routine programme monitoring was as follows:

*“Frequent monitoring is crucial in the project implementation, however, it’s more informative on accountability issues..... monitoring of programmes does not guarantee project sustainability but it’s one of the means to it..... sustainability of agricultural projects require more than just frequent monitoring of programmes ”*

This qualitative result agrees with quantitative inferential results in supporting the fact that monitoring of programmes does not guarantee project sustainability, however, project manager goes ahead to state that monitoring of programmes is one of the means to sustainability of agricultural projects.

Cecil (2012) studied the influence of routine program monitoring on performance of educational projects and asserted that time to time monitoring platforms should be organized during the cycle of project implementation to enhance stakeholder involvement, noting that my first objective found that partnerships for planning M&E significantly

influenced sustainability of agricultural projects, routine program monitoring is therefore important aspect in sustainability of agricultural projects as it enhances stakeholder involvement. The study by Cecil (2012) found the following: Inferential statistical analysis showed that a positive correlation of ( $r = 0.856$ ,  $p < 0.05$ ) exists between Routine Programme Monitoring and Performance of educational building infrastructural projects while regression showed that Routine Programme Monitoring ( $F = 320.41$ ,  $p < 0.05$ ) significantly determines ( $R^2 = 0.7334$ ) the performance of the projects with an effect size ( $\beta = 0.856$ ,  $p < 0.05$ ). The findings therefore rejected the  $H_0$ , and the study concluded that Routine Programme Monitoring significantly influences the performance of educational building infrastructural projects in Bungoma county. Trying to link project performance to project sustainability, researcher acknowledges study conducted by Woodwork and Kelvin, (2006) as cited in the work of in the work of (Mutekhele, Rambo, Ongati, & Nyonje, 2018) which concluded that routine programme monitoring enhances performance of building infrastructural projects in Bungoma County. This however is not the case when this research measured sustainability of agricultural projects. Consequently, researcher can imply that since monitoring enhances performance, then performance is a means to project sustainability because project has to first have good performance before we can think of sustainability, though it is not a guarantee that good project performance will directly lead to project sustainability. This is evidence that routine programme monitoring is important even though it did not significantly influence sustainability of agricultural projects.

#### 4.10 Combined influence of monitoring and evaluation system and sustainability of agricultural projects

To analyze inferential data for research objective five (5), an enter-model of multiple regression was used. Regression model: Sustainability of agricultural projects funded by NGO = f (Monitoring and evaluation system, random error)

$$y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \dots \beta_n X_n$$

- y= Sustainability of agricultural projects
- $\beta_0$ =constant (Y-intercept)
- $\beta_4$ = Beta coefficient
- X1=Partnership for planning M&E
- X2=Data utilization for M&E
- X3=Human capacity for M&E
- X4= Routine program monitoring
- e= error term

Sustainability of agricultural projects =  $\beta_0 + \beta_1$ \*partnerships for planning M&E +  $\beta_2$ \* data utilization for M&E +  $\beta_3$ \*human capacity for M&E +  $\beta_4$ \*routine program monitoring + Model error. The hypothesis and the regression model for this objective were as follows:

*H0: There is no significant relationship between the combined M&E system and sustainability of agricultural projects..*

**Table 4.37: Model Summary of monitoring and evaluation system on sustainability of agricultural project**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.759 <sup>a</sup>	.576	.565	3.01829

a. Predictors: (Constant), Routine program monitoring, Data utilization for M&E, Partnerships for planning M&E, Human capacity for M&E

Table 4.37 is a model summary which includes information about the quantity of variance that is explained by the predictor variables. The first statistic, R, is the multiple correlation coefficients between all of the predictor variables and the dependent variable (sustainability

of agricultural projects funded by NGOs). In this model, the value is 0.759, which indicates that there is a high deal of variance shared by the a combined influence of M&E system (partnership for planning M&E, data utilization for M&E, human capacity for M&E and routine program monitoring) on the sustainability of agricultural projects funded by NGOs . The second statistic, R2 (R-square) measures the proportion of the variation in the dependent variable (sustainability of agricultural projects funded by NGOs) that was explained by variations in the independent variables (monitoring and evaluation system). In this example, the "R-Square" tell us that 57.6% of the variation (and not the variance) was explained.

**Table 4.38: ANOVA of monitoring and evaluation system on sustainability of agricultural project**

Model	Sum of Squares	Df	Mean Square	F	Sig.
1					
Regression	729.562	4	729.562	3.983	.048 <sup>b</sup>
Residual	1202.531	132			
Total	1265.504	136			

a. Dependent Variable: Sustainability of agricultural projects  
b. Predictors: (Constant), Routine program monitoring, Data utilization for M&E, Partnerships for planning M&E, Human capacity for M&E

Table 4.38 shows an F-statistic of 3.983 with a p-value of 0.048. This is reported as  $F = (4,132) = 3.983, p = 0.048, R^2 = 0.576$ . It shows that the regression model hence the variability that was explained for was statistically significant since the calculated p-value was  $< 0.05$  therefore the null hypothesis which states that there is no significant relationship between the combined M&E system and sustainability of agricultural projects was rejected. The model on the influence of combined M&E system on sustainability of agricultural projects was found to be fit since the predictor variable accounted for only 57.6% of the variability of outcome variable and which was statistically significant

**Table 4.39: Coefficients of monitoring and evaluation system on sustainability of agricultural project**

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
	(Constant)	23.260	3.047	7.634	.000
1	Partnerships for planning M&E	12.303	.061	.004	.049
	Data utilization for M&E	7.146	.068	.206	2.143
	Human capacity for M&E	2.013	.097	.013	.129
	Routine program monitoring	.067	.058	.106	1.157

a. Dependent Variable: Sustainability of agricultural projects

Table 4.39 in the standard regression output provides information about the effects of individual predictor variables. The standardized coefficient for partnership for planning M&E was 12.303, which indicates that for a unit increase in partnership for planning M&E in the combined nature, sustainability of agricultural projects increased by 12.303 which was statistically significant with a p-value of 0.031. In the first model (partnership for planning M&E and sustainability of agricultural projects), this predictor variable had a significant influence on sustainability of agricultural projects with a beta of 13.040 and a p-value of 0.036. The second predictor showed that a unit increase in data utilization for M&E, in the combined nature with other components of M&E system increased sustainability of agricultural projects by 7.146, this contribution had a p-value of 0.004 which means that the contribution of this predictor variable to the variability of outcome variable in a joint form was statistically significant. In model one, (data utilization for M&E and sustainability of agricultural projects ) data utilization for M&E had a beta of 0.141 and a p-value of 0.120 which means that it did not statistically contribute to the changes in outcome variable. The third predictor showed that a unit increase in human capacity for M&E in the combined nature increased sustainability of agricultural projects funded by NGOs by 2.013 with a p-value of 0.098 which means that contributions of human capacity



for M&E in joint form was higher than its contribution individually, however, it was still not statistically significant. In model one, (human capacity for M&E and sustainability of agricultural projects) human capacity for M&E had beta of 0.108 and p-value of 0.179 which means that it was still not statistically significant with the outcome variable, lastly, a unit increase in routine program monitoring in the combined nature increased sustainability of agricultural projects by 0.067 with a p-value of 0.249 which means that the contribution was not statistically significant.

This is the same case with model one (Routine program monitoring and sustainability of agricultural projects ) where routine program monitoring had a beta of 0.048 and a p-value of 0.491. Generally, the joint influence of monitoring and evaluation system improved the percentage of variability of sustainability of agricultural projects that was explained for. Also, it enhanced the contribution of data utilization for M&E on sustainability of agricultural project to be statistically significant.

#### **4.11 Leadership competencies and sustainability of agricultural projects.**

This section analyzed the sixth objective of the study and determined the descriptive statistics on leadership competencies, correlation between leadership competencies and sustainability of agricultural projects, and regression of leadership competencies and sustainability of agricultural projects.

##### **4.11.1 Leadership competencies**

Leadership competencies was an independent variable drawn from objective six of the study. The study sought to establish the opinion of the respondents on leadership competencies as a component of M&E system. Ten items drawn from the questionnaires were analyzed and reported in terms of means and standard deviation. The respondents were asked to rate the statements on the scale of 5 in which 1 denoted strongly disagree, 2 disagree 3 neutral 4 agree and 5 strongly agree. The result are presented in table 4.40

**Table 4.40: Distribution of responses on leadership competencies by NGOs.**

		N	Mean	Std. Deviation
9a	Leaders in my organization have ability to plan	137	4.1095	1.08924
9b	Leaders in my organization have ability to organize <b>R</b>	137	3.9635	1.05307
9c	Leaders in my organization have ability to motivate their subordinate staff <b>R</b>	137	3.9854	1.13750
9d	leader in my organization have ability to control their subordinate staff	137	3.8759	1.20321
9e	Leaders in my organization have ability inspire their subordinate staff	137	3.3212	1.24224
9f	Leaders in my organization builds confidence of their subordinate staff	137	3.4599	1.20669
9g	Leader in my organization recognizes their subordinate staff	137	3.5328	1.29508
9h	Leaders in my organization appreciates their subordinate staff	137	3.5328	1.15715
9i	Leaders in my organization encourages subordinate staff to be creative	137	3.5109	1.20121
9j	Leaders in my organization delegates work effectively	137	3.3285	1.09215

**R:** The scale of the item was reversed during analysis

Table 4.40 shows ten items that measure leadership competencies, the table presented means and standard deviations. Item 9a sought to establish whether leaders had ability to plan. The item had a mean of 4.1095 and standard deviation of 1.08924. The mean showed that leaders had ability to plan. The result had a small standard deviation which means that there was a consensus on the issue which. Item 9b sought to establish whether leaders in the organization had ability to organize. This item had a mean of 3.9635 and standard deviation of 1.05307. This item was negatively phrased to ensure that the respondent were alert while responding to the items in the research instrument. However, during the analysis of data, the scale was reversed to ensure uniformity in computation of means and standard deviations. The mean showed that leaders in the organization had ability to organize. A small standard deviation implied that there was a consensus on the issue which

Item 9c sought to establish whether leaders have ability to motivate their subordinate staff. This item had a mean of 3.9854 and standard deviation of 1.13750. This item was

negatively phrased to ensure that the respondent were alert while responding to the items in the research instrument. However, during the analysis of data, the scale was reversed to ensure uniformity in computation of means and standard deviations. The mean showed that leaders indeed had ability to motivate their subordinate staff. A small standard deviation implied that there was a consensus on the issue. Item 9d sought to establish whether leaders have ability to control their subordinate staff. The item had a mean of 3.8759 and standard deviation of 1.20321. The mean showed that leaders indeed had ability to control their subordinate staff. A large standard deviation implied that there was no consensus on the issue

Item 9e sought to establish if leaders have ability inspire their subordinate staff. The item had a mean of 3.3212 and standard deviation of 1.24224. The mean showed a neutral opinion among the participants with a large standard deviation which implied that there was no consensus on the issue. Item 9f sought to establish whether leaders builds confidence of their subordinate staff. The item had a mean of 3.4599 and standard deviation of 1.20669. The mean showed that leaders actually builds confidence of their subordinate staff. The mean had a large standard deviation which implied that there was no consensus on the issue. Item 9g sought to establish whether leaders in organization recognizes their subordinate staff. The item had a mean of 3.5328 and standard deviation of 1.29508. The mean showed that leaders actually recognizes their subordinate staff. The mean had a large standard deviation which implied that there was no consensus on the issue

Item 9h sought to establish if leaders in appreciates their subordinate staff. The item had a mean of 3.5328 and standard deviation of 1.15715. The mean showed that leaders actually appreciates their subordinate staff. The mean had a large standard deviation which implied that there was no consensus on the issue. Item 9i sought to establish if leaders encourages subordinate staff to be creative. The item had a mean of 3.5109 and standard deviation of 1.20121. The mean showed that leaders encourages subordinate staff to be creative. The mean had a large standard deviation which implied that there was no consensus on the issue

Item 9j sought to establish whether leaders in my organization delegates work effectively. The item had a mean of 3.3285 and standard deviation of 1.09215. The mean showed neutral opinion among the participants on whether or not leaders in organization delegates work effectively. The mean had a large standard deviation which implied that there was no consensus on the issue. The general mean score for all items was 36.62043 with general standard deviation of 4.94251. The implication of this mean score and standard deviation in respect to the study is that there was general neutral opinion among participants on whether or not organizations had competent leadership. The majority of the participants' opinion however was skewed towards agreeing that leaders were competent. According to this analysis, organizations had leaders with most characteristics of a competent leader.

#### **4.11.2: Descriptive analysis for the influence of leadership competencies on sustainability of agricultural projects funded by NGOs**

The results from table 4.40 showed that majority of the respondents agreed that organizations had competent leaders. Researcher was interested in determining the beliefs and opinions of participants on the influence of leadership competencies on sustainability of agricultural projects funded by NGOs. They were asked to select the number that best represents their opinion using 5-point scale. Each construct that measured partnership for planning M&E formed a research item. Results are tabulated in table 4.41

**Table 4.41: Distribution of responses on the influence of leadership competencies on sustainability of agricultural projects**

		<b>N</b>	<b>Mean</b>	<b>SD</b>
<b>9.1a</b>	Ability of leaders to plan helps sustain agricultural projects	<b>137</b>	4.0584	1.10989
<b>9.1b</b>	Ability to organize helps sustain agricultural projects	<b>137</b>	4.0146	1.09131
<b>9.1c</b>	Ability of leaders to build confidence to the staff helps sustain agricultural projects	<b>137</b>	3.9781	1.13414
<b>9.1d</b>	Ability of leaders to appreciate the staff helps sustain agricultural projects	<b>137</b>	4.0219	1.14061
<b>9.1e</b>	Ability of leaders to encourages the staff helps sustain agricultural projects	<b>137</b>	4.0511	1.10694
<b>9.1f</b>	Ability of leaders to delegate helps sustain agricultural projects	<b>137</b>	3.9635	1.06694
<b>9.1g</b>	Ability of leaders to recognize the staff helps sustain agricultural projects	<b>137</b>	3.8540	1.16657
<b>9.1h</b>	Ability of leaders to control the staff helps sustain agricultural projects	<b>137</b>	3.9489	1.10028
<b>9.1i</b>	Ability of leaders to motivate the staff helps sustain agricultural projects	<b>137</b>	3.9270	1.08895
<b>9.1i</b>	<i>Ability of leaders to inspire the staff helps sustain agricultural projects</i>	<b>137</b>	3.4571	0.08895

Table 4.41 had a general mean of 42.3504 and standard deviation of 9.52210. This result shows a general agreement among participants that leadership competencies helps sustain agricultural projects. Items 9.1a to 9.1j had their means above 3.4 which means agree.

#### 4.11.2: Relationship between leadership competencies and sustainability of agricultural projects

The study sought to establish the relationship between leadership competencies and sustainability of agricultural projects. The study also tested the null hypothesis that there is no significant relationship between leadership competencies and the sustainability of agricultural projects. Both correlation index ( $r$ ) and  $p$ -value were computed as shown and presented as shown in table 4.42

**Table 4.42: Correlations between leadership competencies and sustainability of agricultural projects**

		<b>Correlations</b>	
		Sustainability of agricultural projects	Leadership competencies
Sustainability of agricultural projects	Pearson Correlation	1	.311
	Sig. (2-tailed)		.039
	N	137	137
Leadership competencies	Pearson Correlation	.311	1
	Sig. (2-tailed)	.039	
	N	137	137

Table 4.42 shows a correlation index  $r = 0.311$ . This shows a moderate positive correlation between leadership competencies and sustainability of agricultural projects. This implied that the more the organization embraced leadership competencies the more agricultural projects were sustained. Further analysis sought to test null hypothesis:

*H<sub>0</sub>: There is no significant relationship between leadership competencies and sustainability of agricultural projects*

The  $p$ -values was found to be  $p = .039$  at 0.05 level of significant. This led to rejecting of null hypothesis that leadership competencies has no significant relationship with

sustainability of agricultural projects and concluded that there is a significant relationship between leadership competencies and sustainability of agricultural projects.

**4.11.3: Regression analysis of leadership competencies and sustainability of agricultural projects**

The study also sought to establish how much leadership competencies explained variation in the sustainability of agricultural project through regression analysis. The model and the key that used was as follows:

$$y = \alpha + \beta X + \varepsilon$$

- y= Sustainability of agricultural projects
- a=constant (Y-intercept)
- β= Beta coefficient
- X= Leadership competencies
- e= error term

**Table 4.43: Model Summary for leadership competencies and sustainability of agricultural projects**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.311	.097	.095	3.05135

a. Predictors: (Constant), Leadership competencies

Table 4.43 shows a Pearson r of 0.311 which indicates a moderate positive correlation exhibited between the various bivariate variables. This confirms the correlations value in table 4.42. The results also shows an  $R^2$  of 0.097 which means that 9.7 % of the variability of the response variable which was sustainability of agricultural projects was accounted for by leadership competencies as a component of monitoring and evaluation system. The  $R^2$  value is given by the following equation.

$$R^2 = \frac{\sum (\text{Estimate} - \text{Mean})^2}{\sum (\text{Actual} - \text{Mean})^2} = \text{Regression Sum of Squares} / \text{Total Sum of Squares}$$

**Table 4.44: ANOVA table for leadership competencies and sustainability of agricultural projects**

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	122.286	1	122.286	3.919	.039 <sup>b</sup>
	Residual	1256.948	135			
	Total	1265.504	136			

a. Dependent Variable: Sustainability of agricultural projects

b. Predictors: (Constant), Leadership competencies

Table 4.44 shows an F-statistic of 3.919 with a p-value of 0.039. This is reported as  $F = (1,135) = 3.919, p = 0.039, R^2 = 0.097$ . It shows that the regression model hence the variability that was explained for was statistically significant since the calculated p-value was  $< 0.05$  therefore the null hypothesis which states that there is no significant relationship between leadership competencies and sustainability of agricultural projects was rejected. This means that there is statistically significant relationship between leadership competencies and sustainability of agricultural projects The model  $\gamma = \alpha + \beta_1x_1 + \beta_2x_2 + \epsilon$  was found to be fit since the predictor variable accounted for only 9.7% of the variability of outcome variable and which was also statistically significant.

**Table 4.45: Coefficients table for leadership competencies and sustainability of agricultural projects**

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	18.654	1.751		10.651	.000
	Leadership competencies	2.049	.051	.311	.959	.039

a. Dependent Variable: Sustainability of agricultural projects



Table 4.45 works by substituting the beta value as well as the constant term, the proceeding regression equation model was as follows:

$$Y = 18.654 + 2.049\chi_6$$

The results in table 4.45 shows that a unit increase in the value of leadership competencies increased the value of sustainability of agricultural projects by 2.049 times holding other variables constant totaling to 20.703 units for a unit increase in the value of leadership competencies. This contribution was statistically significant with a p-value of 0.039. Both descriptive and inferential analysis pointed to a positive relationship between leadership competencies and sustainability of agricultural projects that could be inferred to the larger population. The views of a project manager regarding leadership competencies and sustainability of agricultural projects agreed with the results of this section. One of them said the following:

*“Having competent leaders in terms of the knowhow and ability to handle people is a priority in my organization, It is leadership capability that will foster project sustainability and it is leadership incompetence and will lead to project failure”*

#### **4.12 Moderation influence of leadership competencies on the relationship between monitoring and evaluation system and sustainability of agricultural projects funded by NGOs**

Leadership competencies was identified in this study not only as a predictor variable that was used to predict sustainability of agricultural projects but also as a moderating variable. This was the seventh objective of the study.

Hierarchical multiple regression model was used to establish the simultaneous Influence of monitoring and evaluation system and leadership competencies on sustainability of agricultural projects funded by NGOs, since the model showed how much of the Variance

in the dependent variable was explained when independent and moderating variable were theorized to simultaneously influence it.

Based on Aiken and West (1991) the relationship between monitoring and evaluation system and leadership competencies on sustainability of agricultural projects was developed into linear regression model as follows.

$$Y_j = \beta_0 + \beta_i X_i + \beta_{mi} X_m + \epsilon_i$$

Where:  $Y_j$ - The dependent variable (sustainability of agricultural projects)

$\beta_0$ - Population's regression constant

$\beta_i$  ( $i = 1, 2, \dots, n$ ) are the population's regression coefficients for each independent variable  $X_i$  – The potential predictors

$\beta_{mi}$  - regression coefficient of the moderating variable

$X_{mi}$ - Moderating variable  $\epsilon$  -is the Model error variable. (Leadership competencies)

Sustainability of agricultural projects funded by NGOs =  $\beta_0 + \beta_i$  monitoring and evaluation system +  $\beta_{mi}$  leadership competencies + Model error. This relationship was assumed to hold for all observations ( $i = 1, 2, \dots, n$ ). The inclusion of a random error,  $\epsilon_i$ , was necessary because other unspecified variables also affected sustainability of agricultural projects. This model assumes that for each value of the predictor, there was a group of response values and that these dependent values were normally distributed and was continuous. Based on the five hypothesis generated the following model apply for each;

*Hypothesis 1: There is no significant relationship between partnership for planning M&E and sustainability of agricultural projects.*

Sustainability of agricultural projects funded by NGOs =  $f$  (partnership for planning M&E, random error)

$$Y_j = \beta_0 + \beta_1 X_1 + \epsilon_i$$

*Hypothesis 2: There is no significant relationship between data utilization for M&E and sustainability of agricultural projects.*

Sustainability of agricultural projects funded by NGOs =  $f$  (data utilization for M&E, random error)

$$Y_j = \beta_0 + \beta_2 X_2 + \epsilon_i$$

*Hypothesis 3: There is no significant relationship between human capacity for M&E and sustainability of agricultural projects.*

Sustainability of agricultural projects funded by NGOs =  $f$  (human capacity for M&E, random error)

$$Y_j = \beta_0 + \beta_3 X_3 + \epsilon_i$$

*Hypothesis 4: There is no significant relationship between routine program monitoring and sustainability of agricultural projects.*

Sustainability of agricultural projects funded by NGOs =  $f$  (routine program monitoring, random error)

$$Y_j = \beta_0 + \beta_4 X_4 + \epsilon_i$$

*Hypothesis 7: There is no significant moderating influence of leadership competencies on the relationship between monitoring and evaluation system and sustainability of agricultural projects.*

Sustainability of agricultural projects =  $f$  (Monitoring and evaluation system, leadership competencies, random error)

$$Y_j = \beta_0 + \beta_1 X_1 + \beta_{m1} X_{mi} + \beta_2 X_2 + \beta_{m2} X_{m2} + \beta_3 X_3 + \beta_{m3} X_{m3} + \beta_4 X_4 + \beta_{m4} X_{m4} + \beta_6 X_6 + \beta_{m6} X_{m6} + \epsilon_i$$

**Table 4.46: model summary of monitoring and evaluation system, leadership competencies and sustainability of agricultural project**

<b>Model Summary</b>									
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	R Square Change	F Change	df1	df2	Sig. F Change
1	.759 <sup>a</sup>	.576	.565	3.01829	.576	1.728	4	132	.048 <sup>b</sup>
2	.808 <sup>b</sup>	.652	.622	3.01440	.076	2.357	1	132	.001

a. Predictors: (Constant), Routine program monitoring, Data utilization for M&E, Partnerships for planning M&E

b. Predictors: (Constant), Routine program monitoring, Data utilization for M&E, Partnerships for planning M&E, Leadership competencies

Table 4.46 is a model summary of monitoring and evaluation system, leadership competencies and sustainability of agricultural project. The table has r, r-squared, adjusted r-squared, r-squared change, F- values and significant levels. The second model added partnerships for planning M&E, data utilization for M&E, human capacity for M&E and routine program monitoring. The model had an r of 0.759 associated with monitoring and evaluation system and an r-squared 0.576. This means that 57.6% of the variability in outcome variable (sustainability of agricultural projects) was explained by predictor variable (monitoring and evaluation system) the model was statistically significant as shown by an F of 9.357 and p-value of .048 which is < 0.05. The third model added

leadership competencies as a moderator variable between monitoring and evaluation system and sustainability of agricultural projects. Researcher was interested in finding out whether or not leadership competencies increased or decreased the influence of monitoring and evaluation system on sustainability of agricultural projects. The model had r-value of 0.808. This was a strong multiple correlation value. The model had an r-squared of 0.652 which meant that 65.2% of the variability in sustainability of agricultural projects was explained for by monitoring and evaluation system and leadership competencies. This gave rise to an r-squared change of 0.076. This means that leadership competencies as a moderator added into the model 7.6% of the variability in the outcome variable (sustainability of agricultural projects.). This was a high contribution of leadership competencies in influencing how monitoring and evaluation system influences sustainability of agricultural projects.

**Table 4.47: ANOVA of monitoring and evaluation system, leadership competencies and sustainability of agricultural project**

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	729.562	4	729.562	3.983	.048 <sup>b</sup>
	Residual	1202.531	132			
	Total	1265.504	136			
2	Regression	825.562	4	825.562	4.857	.001
	Residual	1199.435	132			
	Total	1265.504	136			

a. Dependent Variable: Sustainability of agricultural projects  
b. Predictors: (Constant), Routine program monitoring, Data utilization for M&E, Partnerships for planning M&E  
c. Predictors: (Constant), Routine program monitoring, Data utilization for M&E, Partnerships for planning M&E, Leadership competencies

Model three had an F-value of 4.857 with a p-value of 001 which means that the model was fit and that the variability of the outcome variable that was explained by combination

of monitoring and evaluation system and leadership competencies was statistically significant.

**Table 4.48: Coefficients of monitoring and evaluation system, leadership competencies and sustainability of agricultural project**

Model		Unstandardized Coefficients		T	Sig.
		B	Std. Error		
2	(Constant)	13.260	3.047	7.634	.000
	Partnerships for planning M&E	12.303	.061	.049	.031
	Data utilization for M&E	7.146	.068	2.143	.004
	Human capacity for M&E	2.013	.097	.129	.098
	Routine program monitoring	.067	.058	1.157	.249
3	(Constant)	13.985	3.357	6.688	.000
	Partnerships for planning M&E	12.452	.062	.154	.001
	Data utilization for M&E	9.147	.068	2.149	.033
	Human capacity for M&E	4.003	.101	.029	.007
	Routine program monitoring	5.057	.060	.946	.006
	Leadership competencies	5.032	.055	.582	.000

a. Dependent Variable: Sustainability of agricultural projects

Researcher was also interested in finding out the contribution of each variable in model three. The results showed that a unit increase in partnerships for planning M&E increased the sustainability of agricultural projects by 15.303 with a p-value of 0.001; a unit increase in data utilization for M&E increased the sustainability of agricultural projects by 9.147 with a p-value of 0.033; unit increase in human capacity for M&E increased the sustainability of agricultural projects by 4.003 with a p-value of 0.007; unit increase in routine program monitoring increased the sustainability of agricultural projects by 5.057 with a p-value of 0.006; and a unit increase in leadership competencies increased the sustainability of agricultural projects by 5.032 with a p-value of .000. This shows that the contributions of all the components of monitoring and evaluation system on sustainability of agricultural projects was statistically significant when leadership competencies was added in the model.

## **CHAPTER FIVE**

### **SUMMARY OF FINDINGS, CONCLUSIONS AND RECOMMENDATIONS**

#### **5.1 Introduction**

This chapter presents summary of findings, conclusions and recommendations. In the summary of findings, the results and remarks for each of the hypothesis in the study were presented for the four research objectives. The conclusions presented in this section were guided by the research objectives and informed by the findings, analysis, interpretation and discussions in the study. Based on the conclusions made, the contribution of the study to knowledge was examined. Recommendations based on the results for policy and practice and for methodology as well as suggestions for further research were made.

In the testing of the hypotheses in the study, Pearson's Product Moment Correlation, linear regression and enter method Multiple Regression analysis were used. In total, seven (7) hypotheses were formulated and tested in the study. In the first model which involved testing the influence of individual predictor variables: partnerships of planning M&E, data utilization for M&E, human capacity for M&E, routine program monitoring and leadership competencies on the sustainability of agricultural projects only two (2) predictor variable (partnership for planning M&E and leadership competencies) was statistically significant hence null hypothesis was rejected. In the second model which was a multiple regression testing the influence of joint influence of all four (4) variable: partnerships of planning M&E, data utilization for M&E, human capacity for M&E routine program monitoring on the sustainability of agricultural projects, two (2) predictor variables were statistically significant: partnership for planning M&E and data utilization for M&E. in the third model which included a moderating variable (leadership competencies), all the predictor variables were statistically significant with sustainability of agricultural projects.. In testing this hypothesis, levels of significance of F statistics and Pearson's Product Moment Correlation were considered since these relationships were linear. Where  $p < 0.05$ , the null hypothesis was rejected and it was concluded that a correlation model existed implying a significant relationship was established between the variables under consideration. For the strength of the established relationships, r values were considered while interpreting results. Where r



$< 0.1$ , the relationship was considered too weak to be statistically significant. For  $0.1 < r < 0.3$ , the relationship was considered weak; for  $0.3 < r < 0.5$ , the relationship was considered moderate; and for  $0.5 < r < 1.0$ , the relationship was considered strong. The positive or negative sign of the 'r' values denoted the direction of the relationship under investigation.

## **5.2 Summary of findings**

### **5.2.1 Sustainability of agricultural projects funded by NGOs**

This was the outcome variable of the study. General mean was computed using actual scores that ranged from 50 indicating strongly agree and 10 indicating strongly disagree when each values attached to each response were multiplied with the number of total items. The general mean for all item in table 4.10 was found to be 24.7080 with a standard deviation of 4.30998. The value of general mean showed that there was an overall disagreement by the participants with the most of the items that measure sustainability of agricultural projects. The implication here is that agricultural projects were not sustained. The mean had a small standard deviation which shows a consensus among participants on this issue. Results of the interview guides supported this finding in that most of the key informant participants emphasized on lack of project sustainment when asked about their take on the sustainability of agricultural projects in the organization. Participants were convinced that project sustainability was elusive in the organization. Main gaps noted by interview guide participants were: That finances were highly strained therefore finance resource were only budgeted for until the terminal end of the project and not post project, high employee turnover which worked against efforts meant to maintain skilled staff, glaring lack of project sustainability strategies, and noticeable absence of effective strategies to retain beneficiary skills.

### **5.2.2: Partnerships for planning M&E and sustainability of agricultural projects**

On partnerships for planning M&E, researcher sought to establish the general mean using actual scores that ranged from 50 indicating strongly agree and 10 indicating strongly disagree when each value attached to each response were multiplied with the number of total items in table 4.11. The general mean for all items was 26.1460 and a general standard deviation of 4.52370. The mean had a relatively small standard

deviation meaning that there was consensus among the participants on responding to this item. The value of general mean showed that there was an overall disagreement by the participants with the most of the items that measure partnership for planning M&E. This implies that organizations did not utilize partnerships for planning M&E as a component of M&E system. When asked about the challenges that organizations face in partnerships for planning M&E, one of the project managers said that the greatest challenges they face as an organization is lack of M&E policies and guideline that define the criteria for partnership with our stakeholders and lack of strategies that define M&E partnerships, and that the organization only use the strategies that are donor born and dictated upon by donors. When asked about the influence of partnerships for planning M&E on sustainability of agricultural projects. The items had a general mean of 16.7956 and a general standard deviation of 2.47380. This shows that there was general agreement by the participants that partnerships for planning M&E influences sustainability of agricultural projects in terms of helping sustain agricultural projects. The results were supported by results in table 4.13 that showed a correlation index  $r=0.743$ . This indicated a strong positive correlation between partnership for planning M&E and sustainability of agricultural projects. This means that the more the organization embraced partnerships for planning M&E the more agricultural projects were sustained. The p-values was found to be  $p=0.036$  at 0.05 level of significant. This led to rejection of null hypothesis that stated: Partnership for planning M&E has no significant relationship with sustainability of agricultural projects. The results also had an  $R^2$  of 0.553 which shows that 55.3% shows that a unit increase in the value of partnerships for planning M&E increased the value of sustainability of agricultural projects by 9.040 times holding other variables constant, the units totaled to 25.234 units for a unit increase in the value of partnerships for planning M&E.

### **5.2.3: Data utilization for monitoring and evaluation and sustainability of agricultural projects**

Results in table 4.17 had a general mean for all items of 24.571 and a general standard deviation of 4.71348. These items had the highest value of 50 when values attached to each response were multiplied with the number of total items. The value of general mean showed

that there was an overall disagreement by the participants with most of the items that measure data utilization for M&E. This implies a poor application of data utilization for M&E as a component of M&E system. When asked about the influence of data utilization for monitoring and evaluation on sustainability of agricultural projects. The general mean for the items was computed using actual scores that ranged from 15 indicating strongly agree and 3 indicating strongly disagree when each value attached to each response were multiplied with the number of total items in table 4.12. The items had a general mean of 9.9854 and general standard deviation of 3.16689. This shows that there was general uncertainty among respondents if data utilization for M&E influences sustainability of agricultural projects in terms of helping sustain it. Further analysis in table table 4.19 shows a correlation index  $r = 0.198$  which indicated a weak positive correlation between data utilization for M&E and sustainability of agricultural projects. This implied that the more the organization embraced data utilization for M&E, also, the p-values was found to be  $p = 0.120$  at 0.05 level of significant. This led to failure to reject the null hypothesis. The alternative hypothesis was therefore not adopted. The results also showed an  $R^2$  of 0.039 which means that 3.9% of the variability of the response variable which was sustainability of agricultural was accounted for by data utilization for M&E as a component of monitoring and evaluation system. Table 4.21 shows an F-statistic of 0.523 with a p-value of 0.120. This is reported as  $F = (1,135) = 0.523, p = 0.120, R^2 = 0.039$ . It showed that the regression model hence the variability that was explained for was not statistically significant since the calculated p-value was  $> 0.05$ . The results in table 4.22 also showed that a unit increase in the value of data utilization for M&E increased the value of sustainability of agricultural projects by 0.141 times holding other variables constant totaling to 25.041 units for a unit increase in the value of data utilization for M&E.

#### **5.2.4: Human capacity for monitoring and evaluation and sustainability of agricultural projects.**

This was the third objective of the study. General mean was computed using actual scores that ranged from 50 indicating strongly agree and 10 indicating strongly disagree when each values attached to each response were multiplied with the number of total items. The general mean for all items in table 4.23 was found to be 23.6131 with a standard deviation

of 3.09708. The value of general mean showed that there was an overall disagreement by the participants with the most of the items that measure human capacity for M&E. This indicates that organizations did not pay much attention to the importance of human capacity for M&E as a component of M&E system. The mean had a small standard deviation which shows a consensus among participants on this issue. Results of the interview guides supported this finding in that most of the key informant participants emphasized the lack of attention on M&E knowledge to the staff. Project managers said that majority of job seekers for M&E jobs and even the M&E staff had academic qualifications that are unrelated to M&E, most of them have ideas of M&E from a single unit pursued at school, that very few have pursued a professional paper to equip them with necessary M&E hands on skills. Descriptive analysis also showed that participants were unsure whether or not human capacity for M&E influences sustainability of agricultural projects in terms of sustaining it with a general mean of 10.4599 and standard deviation of 1.85113. Further analysis showed a correlation index of  $r = 0.115$  and a p-values of  $p = 0.179$  at 0.05 level of significant. This led to a fail to reject null hypothesis that human capacity for M&E has no significant relationship with sustainability of agricultural projects. The results also shows an  $R^2$  of 0.005 which means that 0.5 % of the variability of the response variable which was sustainability of agricultural projects was accounted for by human capacity for M&E as a component of monitoring and evaluation system. Table 4.29 shows an F-statistic of 1.822 with a p-value of 0.179. This was reported as  $F = (1,135) = 1.822, p = 0.179, R^2 = 0.005$ . It shows that the regression model hence the variability that was explained for was not statistically significant since the calculated p-value was  $> 0.05$

The model  $\gamma = \alpha + \beta_3\chi_3 + \varepsilon$  was not found to be fit since the predictor variable accounted for only 0.5% of the variability of outcome variable and which was not statistically significant. The results in table 4.30 shows that a unit increase in the value of human capacity for M&E increased the value of sustainability of agricultural projects by 0.069 times holding other variables constant totaling to 22.061 units for a unit increase in the value of human capacity for M&E. This was not high number of units considering the total number of units was 50 from the general mean for all items that was calculated.

### **5.2.5: Routine program monitoring and sustainability of agricultural projects.**

The general mean score for all items that measured routine program monitoring was 31.2336 with general standard deviation of 4.82984. The implication of this mean score and standard deviation in respect to the study is that there was general neutral opinion among participants on whether or not organizations utilizes monitoring and evaluation system in terms of routine program monitoring. However, results from interview guides had general agreement that organization conducted monitoring as required. Project managers were convinced that organizational monitoring system was in good condition, the only challenge that was expressed by project managers concerning monitoring is the utilization of collected data to make corrective measures. It was said that data collected from monitoring was rarely used to make project improvements. Researcher therefore concluded by noting that data collection without proper use is useless and waste of important resources. Table 4.33 showed a correlation index  $r = 0.059$  with a p-value of  $p = 0.491$  at 0.05 level of significant. This led to a fail to reject null hypothesis that routine program monitoring has no significant relationship with sustainability of agricultural projects. The results also shows an  $R^2$  of 0.004 which means that 0.4 % of the variability of the response variable which was sustainability of agricultural projects was accounted for by routine program monitoring as a component of monitoring and evaluation system. Table 4.35 shows an F-statistic of 0.476 with a p-value of 0.491. This is reported as  $F = (1,135) = 0.476, p = 0.491, R^2 = .004$ . It shows that the regression model hence the variability that was explained for was not statistically significant since the calculated p-value was  $> 0.05$  therefore the null hypothesis which states that there is no significant relationship between routine program monitoring and sustainability of agricultural projects was not rejected. The model  $\gamma = \alpha + \beta_4 \chi_4 + \varepsilon$  was not found to be fit. The results in table 4.36 shows that a unit increase in the value of routine program monitoring increased the value of sustainability of agricultural projects by 0.048 times holding other variables constant totaling to 18.876 units for a unit increase in the value of routine program monitoring.

### **5.2.6: Combined influence of monitoring and evaluation system and sustainability of agricultural projects**

Table 4.38 showed an F-statistic of 3.983 with a p-value of 0.048. This was reported as  $F = (4,132) = 3.983, p = 0.048, R^2 = 0.576$ . It indicated that the regression model hence the variability that was explained for was statistically significant since the calculated p-value was  $< 0.05$  therefore the null hypothesis which states that there is no significant relationship between the combined M&E system and sustainability of agricultural projects was rejected. The model on the influence of combined M&E system on sustainability of agricultural projects was found to be fit since the predictor variable accounted for only 57.6% of the variability of outcome variable and which was statistically significant.

### **5.2.7: Leadership competencies**

The general mean score for all items was 36.62043 with general standard deviation of 4.94251. The implication of this mean score and standard deviation in respect to the study is that there was general neutral opinion among participants on whether or not organizations had competent leadership. The majority of the participants' opinion however was skewed towards agreeing that leaders were competent. The same variables had a correlation index  $r = 0.311$  with a p-values of  $p = .039$  at 0.05 level of significant. This led to rejecting of null hypothesis that leadership competencies has no significant relationship with sustainability of agricultural projects. The results also showed an  $R^2$  of 0.097 which means that 9.7 % of the variability of the response variable which was sustainability of agricultural projects was accounted for by leadership competencies as a component of monitoring and evaluation system. The  $R^2$  value is given by the following equation. Model  $\gamma = \alpha + \beta\chi_6 + \varepsilon$  was found to be fit since the predictor variable accounted for only 9.7% of the variability of outcome variable and which was also statistically significant. The results in table 4.45 showed that a unit increase in the value of leadership competencies increased the value of sustainability of agricultural projects by 2.049 times holding other variables constant totaling to 20.703 units for a unit increase in the value of leadership competencies.

### **5.2.8: Moderation influence of leadership competencies on the relationship between monitoring and evaluation system and sustainability of agricultural projects funded by NGOs**

While combined influence of monitoring and evaluation system on sustainability of agricultural projects (model two) had an  $r$  of 0.759 associated with and an  $r$ -squared 57.6%. The third model added leadership competencies as a moderator variable between monitoring and evaluation system and sustainability of agricultural projects. The model had  $r$ -value of 0.808. This was a strong multiple correlation value. The model had an  $r$ -squared of 0.652 which meant that 65.2% of the variability in sustainability of agricultural projects was explained for by monitoring and evaluation system and leadership competencies. This gave rise to an  $r$ -squared change of 0.076. This means that leadership competencies as a moderator added into the model 7.6% of the variability in the outcome variable (sustainability of agricultural projects.). This was a high contribution of leadership competencies in influencing how monitoring and evaluation system influences sustainability of agricultural projects.

**Table 5.1: Summary of hypothesis tests and findings**

	<b>Research Objective</b>	<b>Hypothesis</b>	<b>Results</b>	<b>Table</b>	<b>H0 Remarks</b>
<b>1</b>	To establish the extent to which partnerships for planning M&E influence sustainability of agricultural projects funded by Non-governmental organizations in Bungoma County, Kenya	<b>H0:</b> There is no significant relationship between partnerships for planning M&E and sustainability of agricultural projects funded by NGOs	<b>Model 1</b> r = 0.743 R-squared=55.3% Beta =13.040 (p=0.036) F (1,135) = 3.725 (p=0.036)	4.17 4.18 4.19	Rejected
			<b>Model 2</b> r = 0.759 <sup>a</sup> R-squared=57.6% Beta =12.303 (p=.031 <sup>b</sup> ) p = .048 <sup>b</sup> < 0.05 F (4,132) = 3.983	4.39 4.40 4.41	Rejected
			<b>Model 3</b> r = .808 <sup>b</sup> R-squared= 65.2% R-squared change=7.6%(P=.001) Beta =12.452 (p = .001) F (4,132) = 4.857 (P=0.001)	4.49 4.50 4.51	Rejected
<b>2</b>	To determine the extent to which data utilization for M&E influence sustainability of agricultural projects funded by Non-governmental organizations in Bungoma County, Kenya	<b>H0:</b> There is no significant relationship between data utilization for M&E and sustainability of agricultural projects funded by Non-governmental organizations in Bungoma County, Kenya.	<b>Model 1</b> r = 0.198 R-squared=3.9% Beta =0.141 ((P=0.120)) F (1,135) = 0.523(P=0.120)	4.23 4.24 4.25	Failed to reject
			<b>Model 2</b> r = 0.759 R-squared=57.6% Beta =7.146 (P=0.004) F (4,132) = 3.983	4.39 4.40 4.41	Reject
			<b>Model 3</b> r = .808( P=0.001) R-squared= 65.2% R-squared change=7.6%(P=.001) Beta =9.147 (p = 0.033) F (4,132) = 4.857 (P=0.001)	4.49 4.50 4.51	Reject
<b>3</b>	To assess how human capacity for M&E	<b>H0:</b> There is no significant relationship between	<b>Model 1</b> r = 0.115 <sup>a</sup> R-squared=1.3 %	4.31 4.32 4.33	Failed to reject



	influence sustainability of agricultural projects funded by Non-governmental organizations in Bungoma County, Kenya	human capacity for M&E and sustainability of agricultural projects funded by Non-governmental organizations in Bungoma County, Kenya.	Beta =0.108 (P=0.179) F (1,135) = 1.822		
			<b>Model 2</b> r = 0.759 R-squared=57.6% Beta =2.013 (P=0.098) F (4,132) = 3.983	4.39 4.40 4.41	Failed to reject
			<b>Model 3</b> r = .808( P=0.001) R-squared= 65.2% R-squared change=7.6%(P=.001) Beta =4.003 (p = 0.007) F (4,132) = 4.857 (P=0.001)	4.49 4.50 4.51	Reject
<b>4</b>	To examine the extent to which routine programme monitoring influence sustainability of agricultural projects funded by Non-governmental organizations in Bungoma County, Kenya	<b>H0:</b> There is no significant relationship between routine programme monitoring and sustainability of agricultural projects funded by Non-governmental organizations in Bungoma County, Kenya.	<b>Model 1</b> r = 0.059 R-squared=.04% Beta =.046 (P=0.491) F (1,135) = 0.476 (P=0.491)		Failed to reject
			<b>Model 2</b> r = 0.759 R-squared=57.6% Beta =0.069(P=0.249) F (4,132) = 3.983	4.39 4.40 4.41	Failed to reject
			<b>Model 3</b> r = 0.808( P=0.001) R-squared= 65.2% R-squared change=7.6%(P=.001) Beta =5.057 (p = 0.006) F (4,132) = 4.857 (P=0.001)	4.49 4.50 4.51	Reject
<b>6</b>	To assess how leadership competencies influence sustainability of agricultural projects funded by Non-governmental organizations in Bungoma County, Kenya.	<b>H0:</b> There is no significant relationship between leadership competencies and sustainability of agricultural projects funded by Non-governmental organizations in Bungoma County, Kenya.	<b>Model 1</b> r = 0.311 R-squared=9.7% Beta =2.049 (P=0.039) F (4,132) = 3.919 (P=0.039)	4.45 4.46 4.47	Reject
			<b>Model 3</b> r = 808( P=0.001) R-squared= 65.2% R-squared change=7.6%(P=.001) Beta =5.032 (p = 0.006) F (4,132) = 4.857 (P=0.000)	4.49 4.50 4.51	Reject

### **5.3 Conclusion**

This section presents the conclusions made in the study. Research objective one in this study was to examine the extent to which partnerships for planning M&E influence sustainability of agricultural projects. Partnership for planning M&E was measured by the following indicators: availability of technical assistance from M&E partners, use of partnerships to fund M&E activities, organizational culture on partnerships and availability of partnerships strategies.

The results this section showed that organizations did not fully utilize partnerships for planning M&E. This is seen where the items that measure partnerships for planning M&E had a small general mean score of 26.1460 and a general standard deviation of 4.52370 as shown in table 4.11. The value of general mean showed that there was an overall disagreement by the participants with most of the items that measure partnerships for planning M&E. This implies a poor utilization of partnerships for planning M&E as a component of M&E system. The results from table 4.11 shows that respondents did not agree that organizations had a well-established M&E system in terms of partnerships for planning M&E.

Despite low utilization of partnerships for planning M&E, majority of the respondents agreed that partnerships for planning M&E influences sustainability of agricultural projects in terms of helping sustain agricultural projects (Results for item 5.1a to 5.1d). Both descriptive and inferential analysis pointed to a positive relationship between partnerships for planning M&E and sustainability of agricultural projects. This shows that majority of the respondents agreed that partnerships for planning M&E influences sustainability of agricultural projects. The correlation in this test was statistically significant showing that results could be generalized to the study population

Research objective two in this study was to examine the extent to which data utilization for monitoring and evaluation influence sustainability of agricultural projects. In this research, descriptive analysis showed poor application of data utilization for M&E as a component of M&E system. On the other hand, inferential analysis pointed a very weak positive relationship between data utilization for M&E and sustainability of agricultural projects. This small relationship was not statistically significant. Interviews conducted in this study indicated that organizations did not fully embrace monitoring and evaluation system in terms of data utilization for M&E. The analysis showed that organization did not effectively use data to plan for future projects, the results also showed that the use of data to plan for future projects was not in line with M&E system requirements, that the use of data to plan for future projects was not in line with beneficiary expectations, that the use of data for decision making was in not line with M&E system requirements, that the use of data for decision making was not in line with beneficiary expectations, that the use of data for decision making was not timely and that the organization did not have an effective data sharing system. All those items had a mean less than 2.6.

Research objective three in this study was to examine the extent to which human capacity for monitoring and evaluation influence sustainability of agricultural projects funded by NGOs. The indicators for the study were the following: M&E qualifications, M&E training and M&E experience. The study established that organizations did not fully embrace monitoring and evaluation system in terms of human capacity for M&E, this is shown by neutral opinion found by general mean for items that measure human capacity for M&E. On possession of professional qualification out of 13(100%) only 1(8%) had acquired a professional certificate. When asked if they had any training by AMREF, KIM, MEASURE evaluation, and global health eLearning center, on 2(15%) said yes while 11(85%) did not have. All M&E officers 13(100%) M&E did not belong to evaluation society of Kenya and only one belonged to a Community of Practice (CoP). The results in this section implies that there is still big need to enhance, embrace and utilize use of human capacity for M&E in terms of employing M&E staff with relevant experience and organize frequent M&E training. Descriptive Analysis showed that respondents were not sure whether or not human capacity for M&E led to sustainment of agricultural projects funded

by NGOs. On the other hand, inferential analysis pointed to a weak positive relationship between human capacity for M&E for M&E and sustainability of agricultural projects that was not statistically significant. This means that an increase in utilization of human capacity for M&E improved prospects of sustainability of agricultural projects however, this increase might have happened by chance and that the increase cannot be generalized to the population.

Research objective four in this study examined the extent to which routine program monitoring influence sustainability of agricultural projects funded by NGOs. The indicators used for this variable were: Monitoring used to track project progress, impact monitoring, outcome monitoring, output monitoring, and availability of monitoring strategies. Results in this section indicated that majority of the respondents were not sure whether or not that routine program monitoring influences sustainability of agricultural projects in terms of sustainability of agricultural projects. On testing for relationship, it was established that routine program monitoring correlated positively with sustainability of agricultural projects with value of  $r = 0.059$ . This implied that the more the organization embraced routine program monitoring, the more agricultural projects were sustained. However, this relationship could not be generalized.

Analysis of combined influence of monitoring and evaluation system on sustainability of agricultural projects was analyzed in objective five (5). In this model, the value of  $r$  was 0.759, which indicates that there is a high deal of variance shared by the a combined influence of M&E system (partnership for planning M&E, data utilization for M&E, human capacity for M&E and routine program monitoring) on the sustainability of agricultural projects. R-Square of 57.6% was shown hence. It can be concluded that the  $r$ -squared of 57.6% (that was explained by the joint influence of M&E system) and it was statistically significant. Generally, the joint influence of monitoring and evaluation system improved the percentage of variability of sustainability of agricultural projects that was explained for. Also, it enhanced the contribution of data utilization for M&E on sustainability of agricultural project to be statistically significant.

The sixth objective was about the influence of leadership competencies on the sustainability of agricultural projects. The variable correlated positively with sustainability of agricultural projects with value of 0.311 which implied that the more the organization embraced leadership competencies the more agricultural projects were sustained. Research finding conclude that there is a significant relationship between leadership competencies and sustainability of agricultural projects funded by NGOs. The results also showed an  $R^2$  of .097 which shows that 9.7 % of the variability of the response variable which was sustainability of agricultural projects that are funded by NGOs was accounted for by predictor variable which was leadership competencies, the variability was also statistically significant. The results showed that a unit increase in the value of leadership competencies increased the value of sustainability of agricultural projects by 2.049 times holding other variables constant.

The seventh objective was on analysis of moderation influence of leadership competencies on the relationship between monitoring and evaluation system and sustainability of agricultural projects funded by NGOs. With addition of leadership competencies in a regression model as a moderator, an r-value of 0.808 was produced, this was a very strong multiple correlation value. The model had an r-squared of 0.652 which meant that 65.2% of the variability in sustainability of agricultural projects was explained for by monitoring and evaluation system moderated by leadership competencies. This gave rise to an r-squared change of 0.076. This means that leadership competencies as a moderator added into the model 7.6% of the variability in the outcome variable (sustainability of agricultural projects.). This was a high contribution of leadership competencies in influencing how monitoring and evaluation system influences sustainability of agricultural projects.

**Table 5.2: Summary of conclusion and contribution of the Study to Knowledge in project monitoring and evaluation.**

	<b>Objective</b>	<b>Findings</b>	<b>Conclusion</b>	<b>Contribution to body knowledge</b>
1.	To establish the extent to which partnerships for planning M&E influence sustainability of agricultural projects funded by Non-governmental organizations in Bungoma County, Kenya	The p-values was found to be $p=0.036$ at 0.05 level of significant. This led to rejection of null hypothesis that stated	It is important to consider partnerships for planning M&E in respect to technical assistance from M&E partners, use of partnerships to fund M&E activities, organizational culture on partnerships and partnerships strategies when designing agricultural projects	The study objective empirically demonstrated that partnerships for planning M&E should seriously be considered in project designs to enhance sustainability of agricultural projects.
2.	To determine the extent to which data utilization for M&E influence sustainability of agricultural projects funded by Non-governmental organizations in Bungoma County, Kenya	The p-value was found to be $P=0.120$ at 0.05 level of significant. This led to fail rejection of null hypothesis that stated	Even though the null hypothesis was not rejected, correlation analysis showed a positive relationship. Also, interview guides showed the need for effective utilization of data. Data utilization was termed as “ <i>pre-requisite to project sustainability</i> ” Therefore data utilization for M&E is important in sustainability of agricultural projects	The study objective provides empirical evidence that use of data for planning, use of data for decision making, and data sharing with stakeholders are important elements of data utilization for M&E that heightens sustainability of agricultural projects
3.	To assess how human capacity for M&E influence sustainability of agricultural projects funded by Non-governmental organizations in Bungoma County, Kenya	The p-value was found to be $P=0.179^b$ at 0.05 level of significant. This led to fail rejection of null hypothesis that stated	Even though the null hypothesis was not rejected, correlation analysis showed a positive relationship. Also, interview guides showed the need for skilled and experienced staff. Human capacity was termed as “ <i>the</i>	The study objective provides empirical evidence that M&E qualifications, M&E training and M&E experience are important elements of human capacity for M&E that reinforces

			<p><i>heart of project sustainability</i>". Therefore human capacity for M&amp;E is important in sustainability of agricultural projects</p>	<p>sustainability of agricultural projects</p>
4.	<p>To examine the extent to which routine programme monitoring influence sustainability of agricultural projects funded by Non-governmental organizations in Bungoma County, Kenya</p>	<p>The p-value was found to be P=0.491 at 0.05 level of significant. This led to fail rejection of null hypothesis that stated</p>	<p>Even though the null hypothesis was not rejected, correlation analysis also showed a positive relationship. Also, interview guides showed the need for effective monitoring where data from monitoring gets to be used for corrective measures. Effective monitoring was termed as "<i>one of the means to sustainability of agricultural projects</i>"</p> <p>Therefore routine programme monitoring is important in sustainability of agricultural projects</p>	<p>The study objective provides empirical evidence that monitoring used to track project progress, impact monitoring, outcome monitoring, output monitoring, and monitoring strategies are important elements in of routine programme that fortifies sustainability of agricultural projects</p>
5	<p>To establish how combined monitoring and evaluation system influence sustainability of agricultural projects funded by Non-governmental organizations in Bungoma County, Kenya</p>	<p>The p-value for combined M&amp;E system was found to be P=.048<sup>b</sup> at 0.05 level of significant. This led to rejection of null hypothesis that stated. On individual items contribution to the joint influence:  - Partnerships for planning M&amp;E had a P value of P=0.031, Data utilization for M&amp;E had a P value of P=.004, Human capacity for M&amp;E had</p>	<p>Partnerships for planning M&amp;E, data utilization for M&amp;E, human capacity for M&amp;E and routine program monitoring together enhances sustainability of agricultural projects</p>	<p>From literature review, studies on the influence of monitoring and evaluation system on the sustainability of agricultural projects are glaringly missing, therefore, this study provides empirical literature on M&amp;E system and sustainability of agricultural projects</p>

		a P value of P=0.098, Routine program monitoring had a P value of P=0.249		
6	To assess how leadership competencies influence sustainability of agricultural projects funded by Non-governmental organizations in Bungoma County, Kenya.	The p-value was found to be P=0.039 at 0.05 level of significant. This led to rejection of null hypothesis that stated	It is important to consider leadership competencies in respect to ability to plan, ability to organize, Building of confidence, appreciating encouraging, delegation, recognition, ability to control, ability to motivate, and ability inspire when designing agricultural projects	The study objective empirically demonstrated that leadership competencies should seriously be considered in project designs to enhance sustainability of agricultural projects.
7	To determine the moderating influence of leadership competencies on the relationship between monitoring and evaluation system and sustainability of agricultural projects funded by Non-governmental organizations in Bungoma County, Kenya.	The p-value was found to be P=0.001 at 0.05 level of significant. This led to rejection of null hypothesis that stated	It is important to consider leadership competencies in respect to ability to plan, ability to organize, Building of confidence, appreciating encouraging, delegation, recognition, ability to control, ability to motivate, and ability inspire when designing agricultural projects	The study objective empirically demonstrated that even though the joint influence of monitoring and evaluation system on sustainability of agricultural projects was statistically significant, leadership competencies should extremely be considered when utilizing M&E systems so as to enhance sustainability of agricultural projects further.



#### **5.4 Recommendations**

- It was recommended that sustainability of agricultural projects in Non-governmental organizations should be synchronized not only through an integrated M&E system but with competent leadership. Leadership competencies were shown in this study to moderate the relationship between M&E system and sustainability of agricultural project. The implication of this finding to policy and practice is that sustainability of agricultural project in NGOs will largely be determined by Leadership competencies; the skills and experience they have on leading people
- Partnerships for planning M&E were identified as the main predictor variable in the study. It had the strongest Pearson correlation as a single variable and the relationship was also statistically significant. The implication of this finding for policy and practice is that organizations ensure its full utilization. NGOs should ensure that they have partnership engagement protocols that are effective. The study established that despite the importance of partnerships for planning M&E, organizations poorly utilized it. This implies that there was still big need to enhance, embrace and utilize technical assistance from M&E partners, partnerships to fund M&E activities, and to ensure effectiveness of organizational culture on partnerships so as to ensure utilization of partnerships for planning M&E as a component of M&E system.
- It was also recommended that organizations needed to fully embrace monitoring and evaluation system in terms of data utilization for M&E and endeavor to balance the utilization of various aspects of monitoring and evaluation system. The analysis showed that organization did not use of data to plan for future projects, the results also showed that the use of data to plan for future projects was not in line with M&E system requirements, that the use of data to plan for future projects is not in line with beneficiary expectations, that the use of data for decision making is in not line with M&E system requirements, that the use of data for decision making is not in line with beneficiary expectations, that the use of data for decision making was not timely and that the organization did not have an effective data sharing system.
- The study recommends that organizations hire qualified monitoring and evaluation staff with relevant M&E qualifications, encourage training, encourage professional

advancement of their career, encourage formation of communities of practice and belonging to professional bodies like Evaluation Society of Kenya. And lastly, since it was established that that monitoring was not used to alert project managers of project deviations, that project managers did not take necessary actions to avert project deviations, organization did not monitor project impacts, that the organization did not use outcome monitoring to gauge the achievement of results and that organizational monitoring strategies were not effective, the study recommends a full utilization of routine program monitoring. The study found that leadership competencies was core to the smooth utilization of monitoring and evaluation system and eventual attainment of project sustainability. It was therefore recommended that organizations to strive to have a leader who is qualified to run the affairs of the organization.

### **5.5 Suggestions for Further Research**

- This study established a poor utilization of monitoring and evaluation system in organizations: partnerships for planning M&E, data utilization for M&E, human capacity for M&E and routine programme monitoring was poorly utilized. No single component of M&E system was reported to have been utilized effectively, therefore, there is need for an in-depth, pragmatic research to investigate the determinants of M&E system utilization by organizations.
- Secondly, since this study delimited itself to the only four out of twelve M&E system components, further research can be carried to investigate the influence of M&E system (components not investigated in this study) on sustainability of agricultural projects moderated by leadership competencies in order to find out what other components of M&E system make best predictors of sustainability of agricultural projects other than partnerships for planning M&E and how leadership competencies will influence them.

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**APPENDICES**

**Appendix I: Transmittal Letter**

**Emmanuel Kyalo  
P.O.BOX 1185  
BUNGOMA**

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My name is Muli Emmanuel Kyalo. I am a PhD student at the University of Nairobi. Currently, I am conducting a survey on monitoring and evaluation system, leadership competencies and sustainability of agricultural projects funded by non-governmental organizations in Bungoma County, Kenya. I am working with research assistance and we intend to use interview schedules to project officers, M&E officer and data entry officers while the project manager was be issued with questionnaires. Filling a questionnaire and participating in an interview is estimated to take 45 and 50 minutes. The purpose of this letter is to request you to participate in this study. You may be asked questions on M&E system, leadership competencies and sustainability of agricultural projects. When you are asked questions, you may decide to volunteer or decline. The output of this study is purely for academic purposes. Given the importance of the study you are requested to spare your time and complete a questionnaire or attend to an interview. The study has no direct benefit to participants. Also, there are no risk to your participation. You are free to volunteer and withdraw from the study at any time without any penalty. The information obtained was be used for research purpose only and was be kept confidential.

Thank you for your time and God bless you.  
Yours Faithfully

**MULI EMMANUEL KYALO  
PHD STUDENT, University of Nairobi  
L/83/51344/2016**

**Appendix II: Interview schedules for Project Staff, M&E Officers, and Data Entry Officers**

**INSTRUCTION**

Please tick where appropriate (☐)

**Section A: Demographic Information for project staff, M&E officers, and data entry officers**

1. Select your age

- a. 18-25 years----- { }
- b. 26-35 years----- { }
- c. 36-45 years----- { }
- d. 45-55 years----- { }
- e. Above 55 years ----- { }

**2. How long have you served in the organization?**

- a. 1 – 5 years----- { }
- b. 6 – 10 years ----- { }
- c. 11 – 15 years----- { }
- d. Over 15 years----- { }

**3. Gender**

- Female----- { }
- Male----- { }

#### 4. Section B: Sustainability of agricultural projects

This section describes sustainability of agricultural projects funded by non-governmental organization. Kindly rate the following factors / statements using a five pointer scale of SD – Strongly Disagree; D – Disagree; N – Neutral; A – Agree; and SA – Strongly agree. Please note that there is no right or wrong answer, we are just interested in your honest opinion. Your responses are confidential and was not be shared with anyone in the organization.

	<b>Statements</b>	<b>SD</b>	<b>D</b>	<b>N</b>	<b>A</b>	<b>SA</b>
a	<i>The organization has strategies to retain financial viability of projects after donor pull-out</i>					
b	<i>After donor pull-out, the organization have effective strategies to retain the staff skills obtained from the project</i>					
c	<i>The organization have effective strategies to maintain community acceptance of projects after donor pull out</i>					
d	<i>The organization has project Sustainability strategies</i>					
e	<i>There are strategies to retain project results after donor pull out</i>					
f	<i>After project termination, the organization has effective strategies to retain beneficiary skills required for their capacity empowerment</i>					
g	<i>The organization has strategies to ensure farming systems of beneficiaries survives in long term despite changing economic context</i>					
h	<i>The organization has effective strategies to ensure project sustainability</i>					
i	<i>Beneficiaries' farming systems survives in long term despite changing economic context</i>					
j	<i>The organization has effective strategies to retain financial viability of projects after donor pull-out</i>					



## 5. SECTION C: PARTNERSHIPS FOR PLANNING M&E

This section describes partnerships for planning m&e. Kindly rate the following factors / statements using a five pointer scale of SD – Strongly Disagree; D – Disagree; N – Neutral; A – Agree; and SA – Strongly agree. Please note that there is no right or wrong answer, we are just interested in your honest opinion. Your responses are confidential and was not be shared with anyone in the organization.

	<i>Statements</i>	<i>SD</i>	<i>D</i>	<i>N</i>	<i>A</i>	<i>SA</i>
<i>a</i>	<i>There is M&amp;E technical assistance from partners</i>					
<i>b</i>	<i>Technical assistance from M&amp;E partners is not effectively utilized by the staff</i>					
<i>c</i>	<i>M&amp;E Partners provides much needed support towards M&amp;E tools development</i>					
<i>d</i>	<i>My organization effectively utilizes M&amp;E tools support from partners</i>					
<i>e</i>	<i>The organization uses partnerships to fund for M&amp;E activities</i>					
<i>F</i>	<i>Funding provided through partnerships towards M&amp;E activities is utilized efficiently</i>					
<i>g</i>	<i>The organization has a favorable culture on partnerships</i>					
<i>h</i>	<i>The organization culture for partnerships is effective</i>					
<i>I</i>	<i>The organization has an effective M&amp;E partnerships strategies</i>					
<i>J</i>	<i>There exists an effective communication system for M&amp;E partners as a partnerships strategies</i>					

5.1 We have few questions on your beliefs and opinion on the influence of partnerships for planning M&E on sustainability of agricultural projects. Please read the statements and tick the number that best represents your opinion using 5-point scale. Please do your best to rate the following factors / statements SD – Strongly Disagree; D – Disagree; N – Neutral; A – Agree; and SA – Strongly agree. Also note that there is no right or wrong answer, we are just interested in your honest opinion. Your responses are confidential and was not be shared with anyone in the organization.

	<i>Statements</i>	<i>SD</i>	<i>D</i>	<i>N</i>	<i>A</i>	<i>SA</i>
<b>5.1a</b>	<i>Technical assistance from M&amp;E partners was help sustain agricultural projects that are funded by NGOs</i>					
<b>5.1b</b>	<i>Use of partnerships to fund M&amp;E activities was help sustain agricultural projects that are funded by NGOs</i>					
<b>5.1c</b>	<i>Organizational culture on partnerships was help sustain agricultural projects that are funded by NGOs</i>					
<b>5.1d</b>	<i>Effective partnerships strategies was help sustain agricultural projects that are funded by NGOs</i>					

**SECTION D: DATA UTILIZATION FOR MONITORING AND EVALUATION**

6. This section describes data utilization for monitoring and evaluation. Kindly rate the following factors / statements using a five pointer scale of SD – Strongly Disagree; D – Disagree; N – Neutral; A – Agree; and SA – Strongly agree. Please note that there is no right or wrong answer, we are just interested in your honest opinion. Your responses are confidential and was not be shared with anyone in the organization.

	<i>ITEMS</i>	<i>SD</i>	<i>D</i>	<i>N</i>	<i>A</i>	<i>SA</i>
<i>a</i>	<i>The organization uses data to plan for future projects through learning</i>					
<i>b</i>	<i>The use of data to plan for future projects is not in line with M&amp;E system requirements</i>					
<i>c</i>	<i>The use of data to plan for future projects is not in line with donor requirements</i>					
<i>d</i>	<i>The use of data to plan for future projects is in line with beneficiary expectations</i>					
<i>e</i>	<i>The use of data for decision making is in line with M&amp;E system requirements</i>					

<i>f</i>	<i>The use of data for decision making is in line with donor requirements</i>					
<i>g</i>	<i>The use of data for decision making is in line with beneficiary expectations</i>					
<i>h</i>	<i>The use of data for decision making is timely</i>					
<i>i</i>	<i>The organization has a data sharing policy</i>					
<i>j</i>	<i>The organization has an effective data sharing system</i>					

6.1 We have few questions on your beliefs and opinion on the influence of data utilization for M&E on sustainability of agricultural projects. Please read the statements and tick the number that best represents your opinion using 5-point scale. Please do your best to rate the following factors / statements SD – Strongly Disagree; D – Disagree; N – Neutral; A – Agree; and SA – Strongly agree. Also note that there is no right or wrong answer, we are just interested in your honest opinion. Your responses are confidential and was not be shared with anyone in the organization.

	<i>Statements</i>	<i>SD</i>	<i>D</i>	<i>N</i>	<i>A</i>	<i>SA</i>
<b>6.1a</b>	<i>Use of data for planning helps sustain agricultural projects that are funded by NGOs</i>					
<b>6.1b</b>	<i>Use of data for decision making helps sustain agricultural projects that are funded by NGOs</i>					
<b>6.1c</b>	<i>Data sharing with stakeholders helps sustain agricultural projects that are funded by NGOs</i>					

## **7. SECTION E: HUMAN CAPACITY FOR M&E**

This section describes human capacity for m&e . Kindly rate the following factors / statements using a five pointer scale of SD – Strongly Disagree; D – Disagree; N – Neutral; A – Agree; and SA – Strongly agree. Please note that there is no right or wrong

answer, we are just interested in your honest opinion. Your responses are confidential and was not be shared with anyone in the organization.

<i>STATEMENTS</i>		<i>SD</i>	<i>D</i>	<i>N</i>	<i>A</i>	<i>SA</i>
<i>a</i>	<i>Human resource employs M&amp;E staff with relevant qualification for M&amp;E positions.</i>					
<i>b</i>	<i>M&amp;E staff have excellent knowledge on M&amp;E concepts</i>					
<i>c</i>	<i>My organization have M&amp;E staff with relevant professional M&amp;E qualification</i>					
<i>d</i>	<i>Project M&amp;E staff have excellent hands-on skills required in the implementation of agricultural projects</i>					
<i>e</i>	<i>The organization utilizes technical working group to enhance M&amp;E experience</i>					
<i>f</i>	<i>There are frequent M&amp;E trainings for staff provided for by your organization</i>					
<i>g</i>	<i>My organization encourages the staff for M&amp;E Off-job training</i>					
<i>h</i>	<i>My organization encourages the staff for M&amp;E On job training</i>					
<i>i</i>	<i>M&amp;E staff have sufficient M&amp;E experience</i>					
<i>j</i>	<i>My organization effectively utilizes staffs' M&amp;E experience</i>					

**To be responded by M&E staff only**

	<i>Statements</i>	<i>Response</i>
<i>K</i>	<i>Which of the following academic qualifications do you have?</i>	<ol style="list-style-type: none"> <li><i>1. PhD</i></li> <li><i>2. Masters</i></li> <li><i>3. Bachelor's degree</i></li> <li><i>4. Diploma</i></li> <li><i>5. Certificate</i></li> </ol>

<i>L</i>	<i>I have a professional certificate in M&amp;E?</i>	Yes[ ] No [ ]
<i>L</i>	<i>Have you had any M&amp;E training by AMREF, KIM, MEASURE evaluation, and global health eLearning center</i>	Yes[ ] No [ ] <b><i>I have another M&amp;E professional certificate not among the listed</i></b> [ ]
<i>N</i>	<i>I belong to an M&amp;E professional Body for example ESK</i>	Yes[ ] No [ ]
<i>O</i>	<i>I belong to a Community of Practice (CoP)</i>	Yes[ ] No [ ]

7.1 We have few questions on your beliefs and opinion on the influence of human capacity for M&E on sustainability of agricultural projects. Please read the statements and tick the number that best represents your opinion using 5-point scale. Please do your best to rate the following factors / statements SD – Strongly Disagree; D – Disagree; N – Neutral; A – Agree; and SA – Strongly agree. Also note that there is no right or wrong answer, we are just interested in your honest opinion. Your responses are confidential and was not be shared with anyone in the organization.

	<i>Statements</i>	<i>SD</i>	<i>D</i>	<i>N</i>	<i>A</i>	<i>SA</i>
<b>7.1a</b>	<i>Possession of high M&amp;E qualifications help sustain agricultural projects.</i>					
<b>7.1b</b>	<i>Frequent M&amp;E trainings was help sustain agricultural projects.</i>					
<b>7.1c</b>	<i>M&amp;E experience was help sustain agricultural projects.</i>					

## 8. SECTION F: ROUTINE PROGRAMME MONITORING

This section describes routine programme monitoring. Kindly rate the following factors / statements using a five pointer scale of SD – Strongly Disagree; D – Disagree; N – Neutral; A – Agree; and SA – Strongly agree. Please note that there is no right or wrong answer, we are just interested in your honest opinion. Your responses are confidential and was not be shared with anyone in the organization.

<i>STATEMENTS</i>		<i>SD</i>	<i>D</i>	<i>N</i>	<i>A</i>	<i>SA</i>
<i>a</i>	<i>Monitoring system used to report project progress is well defined</i>					
<i>b</i>	<i>Monitoring is used to alert project managers of project deviations</i>					
<i>c</i>	<i>Project progress is reported frequently</i>					
<i>d</i>	<i>Alerting project managers of project deviations is important</i>					
<i>e</i>	<i>Project managers takes necessary actions to avert project deviations</i>					
<i>f</i>	<i>The organization monitors project impacts</i>					
<i>g</i>	<i>The organization uses outcome monitoring to gauge the achievement of results</i>					
<i>h</i>	<i>The organization monitors project outputs regularly</i>					
<i>i</i>	<i>Organizational monitoring strategies are effective</i>					
<i>j</i>	<i>Frequent monitoring of results is important</i>					

8.1 We have few questions on your beliefs and opinion on the influence of human capacity for M&E on sustainability of agricultural projects. Please read the statements and tick the number that best represents your opinion using 5-point scale. Please do your best to rate the following factors / statements SD – Strongly Disagree; D – Disagree; N – Neutral; A –

Agree; and SA – Strongly agree. Also note that there is no right or wrong answer, we are just interested in your honest opinion. Your responses are confidential and was not be shared with anyone in the organization.

	<i>Statements</i>	<i>SD</i>	<i>D</i>	<i>N</i>	<i>A</i>	<i>SA</i>
<b>8.1a</b>	<i>Use of Monitoring to track project progress helps sustain agricultural projects</i>					
<b>8.1b</b>	<i>Assessment of impact monitoring helps sustain agricultural projects</i>					
<b>8.1c</b>	<i>Assessment of outcome monitoring helps sustain agricultural projects</i>					
<b>8.1d</b>	<i>Assessment of Output monitoring helps sustain agricultural projects</i>					
<b>8.1e</b>	<i>Effective monitoring strategies helps sustain agricultural projects</i>					

## 9. SECTION G: LEADERSHIP COMPETENCIES

This section describes leadership competencies. Kindly rate the following factors / statements using a five pointer scale of SD – Strongly Disagree; D – Disagree; N – Neutral; A – Agree; and SA – Strongly agree. Please note that there is no right or wrong answer, we are just interested in your honest opinion. Your responses are confidential and was not be shared with anyone in the organization.

	<i>STATEMENTS</i>	<i>SD</i>	<i>D</i>	<i>N</i>	<i>A</i>	<i>SA</i>
<b>a</b>	<i>Leaders in my organization have ability to plan.</i>					
<b>b</b>	<i>Leaders in my organization do not have ability to organize.</i>					
<b>c</b>	<i>Leaders in my organization do not have ability to motivate their subordinate staff</i>					
<b>d</b>	<i>leader in my organization have ability to control their subordinate staff</i>					

<i>e</i>	<i>Leaders in my organization have ability inspire their subordinate staff</i>					
<i>f</i>	<i>Leaders in my organization builds confidence of their subordinate staff</i>					
<i>g</i>	<i>Leader in my organization recognizes their subordinate staff</i>					
<i>h</i>	<i>Leaders in my organization appreciates their subordinate staff</i>					
<i>i</i>	<i>Leaders in my organization encourages subordinate staff to be creative</i>					
<i>j</i>	<i>Leaders in my organization delegates work effectively</i>					

8.1 We have few questions on your beliefs and opinion on the influence of leadership competencies on sustainability of agricultural projects. Please read the statements and tick the number that best represents your opinion using 5-point scale. Please do your best to rate the following factors / statements SD – Strongly Disagree; D – Disagree; N – Neutral; A – Agree; and SA – Strongly agree. Also note that there is no right or wrong answer, we are just interested in your honest opinion. Your responses are confidential and was not be shared with anyone in the organization.

	<i>Statements</i>	<i>SD</i>	<i>D</i>	<i>N</i>	<i>A</i>	<i>SA</i>
<i>a</i>	<i>Ability of leaders to plan helps sustain agricultural projects</i>					
<i>b</i>	<i>Ability to organize helps sustain agricultural projects</i>					
<i>c</i>	<i>Ability of leaders to build confidence to the staff helps sustain agricultural projects</i>					
<i>d</i>	<i>Ability of leaders to appreciate the staff helps sustain agricultural projects</i>					
<i>e</i>	<i>Ability of leaders to encourages the staff helps sustain agricultural projects</i>					



<i>f</i>	<i>Ability of leaders to delegate helps sustain agricultural projects that are funded by NGOs</i>					
<i>g</i>	<i>Ability of leaders to recognize the staff helps sustain agricultural projects</i>					
<i>h</i>	<i>Ability of leaders to control the staff helps sustain agricultural projects</i>					
<i>i</i>	<i>Ability of leaders to motivate the staff helps sustain agricultural projects</i>					
<i>j</i>	<i>Ability of leaders to inspire the staff helps sustain agricultural projects</i>					

### **10. Appendix III: unstructured items for projects managers**

This questionnaire is about your opinion on sustainability of agricultural projects, partnerships for planning M&E, data utilization for M&E, Human capacity for M&E, routine monitoring and evaluation and leadership competencies. Please note that there is no right or wrong answer, we are just interested in your honest opinion. Your responses are confidential and was not be shared with anyone in the organization

#### **1. Tell me about your experience with partnerships for planning monitoring and evaluation in your organization**

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##### **1.1 Tell me about the status of the following in your organization**

- a) Technical assistance from M&E partners in your organization
- b) Use of partnerships to fund M&E activities
- c) Organizational culture on partnerships
- d) Partnerships strategies

1.2. What challenges do your organization face in partnerships for planning M&E?

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**2. Tell me about your experience with data utilization for monitoring and evaluation in your organization**

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2.1 2.1 Tell me about the status of the following in your organization

- a) Use of data for planning
- b) Use of data for decision making
- c) Data sharing with stakeholders

2.2 Tell me about challenges your organization face in data utilization for M&E?

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**3. Tell me about your experience with human capacity for monitoring and evaluation in your organization**

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3.1 3.1 Tell me about the status of the following in your organization

- a) M&E qualifications
- b) M&E training
- c) M&E experience

3.2 What challenges do your organization face in human capacity for M&E?

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**4. Tell me about your experience with routine program monitoring in your organization**

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4.1 4.1: Tell me about the status of the following in your organization

- a) Monitoring used to track project progress,
- b) Impact monitoring,
- c) Outcome monitoring,
- d) Output monitoring,
- e) Monitoring strategies

4.2. What challenges do your organization face in routine program monitoring?

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**5. What is your take on the sustainability of agricultural projects in your organization**

**6. What is your take on the status of the following in your organization?**

- a) Project financial viability after donor pull-out
- b) Sustainment of staff capability after donor pull-out
- c) Sustainment of community acceptance of project after donor pull out
- d) Project sustainability strategies
- e) Sustainment of project results after donor pull-out
- f) Beneficiary capacity development after donor pull-out

### Appendix III: Research Permit

 <p>REPUBLIC OF KENYA</p>	