

# INFLUENCE OF MONITORING AND EVALUATION TOOLS USAGE ON AGRICULTURAL PROJECT SUCCESS IN NGO'S IN KENYA: A CASE STUDY OF FARM AFRICA, KENYA

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**Abstract:** This study sought to establish the influence of monitoring and evaluation tools usage on agricultural project success. The main tools that study focused on were; Mobile Application, Logical Framework, Monitoring and Evaluation plan, and Data Dashboard. The four main objective that guided the study includes: To establish how Mobile Application usage influences agricultural project success in NGO's, in Kenya, To determine how Logical framework usage influences agricultural project success in NGO's, in Kenya, To establish how Monitoring and evaluation plan usage influences agricultural project success in NGO's, in Kenya and To find out how Data dashboard usage influences agricultural project success in NGO's, in Kenya. The study adopted descriptive research design while targeting 56 Project and Monitoring and Evaluation employees at Farm Africa. Questionnaire was used to collect data. Final collected data was analyzed using qualitative and quantitative methods together will linear regression model. Qualitative data was coded to their respective variable in the study for easier analysis while quantitative was summarized by obtaining descriptive statistics. The data was presented inform of tables and graphs. The SPSS and Excel software's was used to model and obtain summary tables and graphs. The multiple linear regression and Pearson pairwise correlation was used to model the data. On average 79% of the respondents, revealed monitoring and evaluation had high extent influence on project success. All the five monitoring and evaluation tools, Mobile applications, Logical framework, monitoring and evaluation plan and data dashbord shown strong positive correlation with project success. Further Study revealed evidence of positive influence of monitoring and evaluation tools on agricultural project success. From the results 83.2% of the changes in project success can be explained by monitoring and evaluation tools studied while the remaining 16.8% can be explained using other factors which are not part of the regression model. The study concluded the strength of Mobile applications, Logical framework, monitoring and evaluation plan and data dashbord is very important for the poject success and management should incorporate these tools during project implementation.

**Keywords:** Data Dashboard, Mobile Applications, Monitoring and Evaluation Plan, Logical Framework and project success.

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## 1. INTRODUCTION

### 1.1 Background of the study:

This study sought to find out the influence of monitoring and evaluation tools usage on agricultural project success. Perception of monitoring and evaluation varies across organizations but its contribution to the project cycle among non-governmental development agencies cannot be denied (Praefcke, 2010). The praefcke further outlines the role of

monitoring in projects as continuous tracking of results along the results chains that is: inputs, outputs, outcomes, and goal of project activities against set targets. On the other hand evaluation involves establishing causality and attribution which serves as a basis for accountability and learning by project team, management and all the involved stakeholders (Praefcke, 2010). Despite their distinct roles monitoring and evaluation overlaps and therefore need for the two processes to be implemented as a single integrated system for effective results.

Monitoring and evaluation supports project implementation by providing evidence based decision making to senior management (IFRC, 2011). Monitoring and evaluation therefore enables stakeholders such as beneficiaries to give their feedbacks on the intervention by participatory monitoring process which is very crucial for project improvement. Similarly monitoring and evaluation make it possible for the project team to celebrate achievements which builds morale across the team leading to improved project performance over time (IFRC, 2011).

Several studies confirm application of monitoring and evaluation tools results to project success (Amponsah, 2010: & Ika, Diallo & Thuillier, 2009). Although different researcher's have studied different Monitoring and evaluation tools and their effect on agricultural project it is evidenced that these tools are very useful during project implementation which brings about success impact (Waithera & Wanyoike, 2015). Project team need to incorporate M&E system at every project stages to identify strengths and weakness at each phase for proper corrective and preventive actions. Therefore, monitoring and evaluation tools applications in agricultural projects is very essential and cannot be avoided if project needs to track progress for timely evidence based decision making which ensures project success (Wangechi, 2013).

### **1.2 Statement of the Problem:**

One of the process group necessary for the project success is Monitoring and evaluation according to (PMI, 2008). In this regard most, organizations implementing agriculture related project have designed monitoring and evaluation systems, which helps in providing early indicators on situation, which require actions for projects to achieve their desired goals. Despite the said efforts, there is slow adaptation of M&E systems by organization leading to little detection of project problems. Many project designers give less priority to monitoring and evaluation systems and as a result, they are done simply to meet donor requirement without the intentions of using it as a mechanism, which contributes to project success (Otieno, 2010).

According to (Praefcke, 2010) some of the weaknesses that are experienced during project implementation includes delayed planned monitoring and evaluation systems, focusing mainly on physical achievement's rather than project outcomes, M&E system information not properly utilized by internal management instead is used only to meet donors need. These challenges are present in government agencies and non-governmental organizations and managements are reluctant to address them on time.

According to (Dorward, 2009) there is minimal effort in improving programs efficiency and effectiveness as evidenced by less monitoring and evaluation activities, limited use of fiscal efficiency and cost benefit analysis and reduced attention to possible problems of leakage and displacement. (Kamau & Mohamed, 2015) further revealed that some projects perform poorly even when monitoring and evaluation system is present and on the other hand other project achieve high success due to proper monitoring and evaluation, which causes paradox. In Kenya, there are many projects that have been termed as a successful for example self-reliant agriculture (SRA) project which main aim was to help beneficiaries become sustainable through crops growing and keeping animals through trainings and showing farmers how to use their land in mnyenzeni was viewed as success (Ward, 2010). Similarly there are records of failed projects in Kenya for instance, in Kisumu Tumaini Women Self Help group project and the Lake Turkana fish processing plant project are some of the projects (Kamau & Mohamed, 2015).

From the above literature, it is impossible to determine whether monitoring and evaluation tools have direct impact on project success since even those projects with monitoring system present fails. Further, we have seen that monitoring and evaluation system is used by organizations to meet donor requirements and are not implemented with the aim to make project more successful, which makes it impossible to link any project success or failure with such M&E process. A need therefore arises to investigate influence of monitoring and evaluation tools on agricultural project success to determine their contribution.

**1.3 Research Objectives:****1.3.1 General objective of the study**

To determine the influence of Monitoring and Evaluation tools usage on Agricultural project success in NGO`s, in Kenya.

**1.3.2 Specific objectives of the study**

The study specific objectives were:

1. To establish how Mobile Application usage influences agricultural project success in NGO`s, in Kenya.
2. To determine how Logical framework usage influences agricultural project success in NGO`s, in Kenya.
3. To establish how Monitoring and evaluation plan usage influences agricultural project success in NGO`s, in Kenya.
4. To find out how Data Dashboard usage influences agricultural project success in NGO`s, in Kenya.

**1.4 Research Questions**

The study sought to answer the following questions:

1. How does Mobile Application usage influence Agricultural project success in NGO`s, in Kenya?
2. How does logical framework usage influence Agricultural project success in NGO`s, in Kenya?
3. How does Monitoring and evaluation plan usage influences Agricultural project success in NGO`s, in Kenya?
4. How does Data Dashboard usage influence Agricultural project success in NGO`s, in Kenya?

**2. LITERATURE REVIEW****2.1 Theoretical Review:**

The following theories were used to support the variables

**2.1.1 Theory of change:**

The theory of change plays a vital role in developing framework for programs monitoring and evaluation. Theory of Change are nowadays commonly found as part of the documentation of a programme and implementers and evaluators are increasingly adopting its use (Coffey, 2010). According to (Maru & Hall, 2013) experience suggest that although TOC is increasingly employed to assist with planning of delivery of strategies and program, and there is still little consensus on how it should be developed. This means less personels are fully aware on how to draft effective theory of change which captres all the cause pathways and what is intended to change and how change should be achieved.

Moreover, (Vogel , 2012) in her report recognized that theory of change is used internationally by governmental agencies and non-governmental organizations to support development outcomes. The author argues that theory of change use in project and programs supports innovation together with proper adaption to dynamic changes which is an essential factor for any project to be successful during implementation. Vogel further stated in his report that working with TOC is challenging but it can creat better organizing frameworks which improves project designing, implementation and outcomes in large

**2.1.2 Contingency theory:**

The contingency theory originated from criticism of universal approach. Some of the scholars who participated in development of this theory includes Lawrence and Lorsch (1967) and Woodward (1965) as outlined by (Örebro University, 2014). They started by arguing that in order to structure a firm there must be contingency to be accounted for by every member especially management.

According to (Kureshi, 2013) contingency theory concept is that in project management there is no single way of handling activities the environment context dictates how things should be handled. He argues that projects are novel in definition and therefore different approaches should be used in each instance because variables have to change with time. The author further states that project manager`s starts with formal tools and after some time they leave them away after becoming less useful hence adapting their own means of solving problems. He further states that management effectiveness is dependent upon specific situation and not necessarily follows already established management procedures. This means managers have the power to make alternative decisions based on the situation.

Further, this theory states there is no single best way of leading or organizing project it only depends on situation and context, which includes internal and external factors. In this study contingency theory was applicable since managers depending on the situation may fail to fully utilize some monitoring and evaluation tool such as mobile phones and electronic data dashboards, for instance when technology fails.

## 2.2 Conceptual Framework

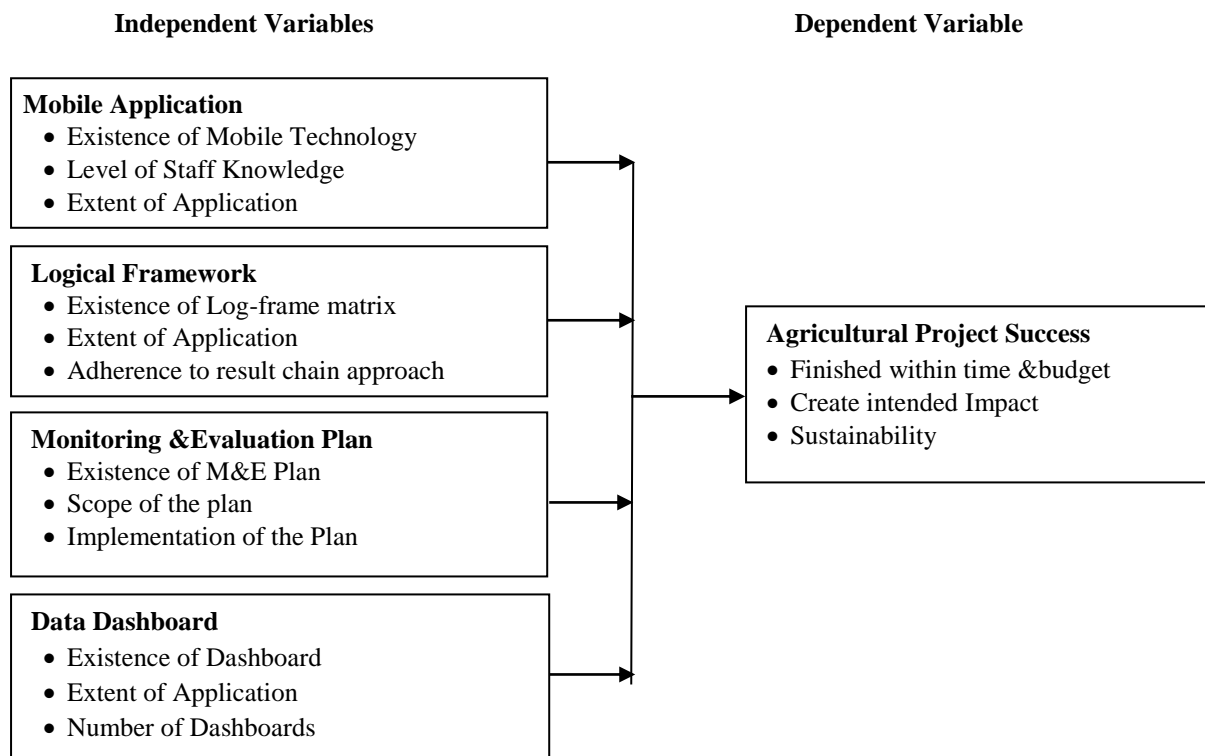


Figure 2.1: Conceptual Framework

## 2.3 Empirical Studies:

### 2.3.1 Project success:

There is no clear way of measuring project success however; different authors have tried to come up with guidelines on how to assess project achievements. One stakeholders can view project as successful while others consider it as a failure (Wit, 1988). The author explained project success as a time based, where project can be considered successful today and the failure tomorrow, therefore it is illusion to view project success as perfectly measurable element. Wit further explained that the study of the completed projects is mainly done to document lessons learned in order to apply them to the coming projects and less effort is done to determine success of projects in terms of final deliverables and meeting objectives. (Pinto & Slevin, 1988) said that Project could be perceived as successful by implementers, while customers have poorly received the very same project since their interest differs.

In agricultural environments the organizational control which involves monitoring and controlling project activities is very essential for project success as documented by (Boakye, 2014). To achieve complete control it is necessary to apply monitoring and evaluation in such projects which shows how success can be achieved as a result of proper selection of M&E tools. The author in his report accepted that in Ghana many agriculture project have failed to achieve their objectives as a result of poor control. He stresses the importance of applying controls since it's a necessary factor in averting and minimizing the occurrences of the problems during project initialization as well as during execution.

### 2.3.2 Mobile Application:

Mobile applications for data collection are platforms, which allow building a mobile data collection survey for monitoring and evaluation (BetterEvaluation, 2017). Mobile Applications helps project monitoring and evaluation teams to achieve their goals efficiently and within set period (USAID, 2012). Several organizations and companies implementing

agriculture interventions have started harnessing benefits of mobile applications in monitoring and evaluation as documented in (USAID, 2012). Mobile tools enable real-time feedback, which supports evidence based project management

Considerably, as per (BetterEvaluation, 2017) mobile applications are used in conducting retrospective evaluation of the projects. Through application of mobile technology, the skip patterns are well integrated into survey which facilitates collection of high quality data. Due to timely availability of data analysis is done on time hence demonstrating power of mobile technology in monitoring and evaluation of projects. Moreover mobile data collection works best when you are collecting a lot of quantitative data and less qualitative data, however if you are collecting long qualitative data mobile data collection may be less effective

### 2.3.3 Logical Framework:

As per (Jensen, 2010) log-frame is a 4x4 matrix tool used in project monitoring and evaluation and it represents results in a logical manner starting with activities, output, outcome and goal. Through this tool, you can easily measure achievement against the project indicators making it very useful tool in project control and evaluation. The author continues to say that log-frames brings all the components of projects together while presenting them in clear, coherent and systematic manner. This tool further provides guidelines on how M&E data will be collected by the project team since it contains the project indicators and all the necessary assumption

Research carried by (Barasa , 2014) within Kakamega County in four constituencies shown that in CDF funded projects there was significance relationship between Monitoring and evaluation tools and project performance. The studied tools were Stakeholders analysis, budget, logical framework, and strategic plan. The results shown essential need of Monitoring and Evaluation for project success. Through this research we can clearly see positive contribution of the logical framework as a tool for the monitoring and evaluation.

### 2.3.4 Monitoring and Evaluation Plan:

Monitoring and evaluation plan is is essential tool for Monitoring and evaluation (Phili, 2015) Argued that monitoring and evaluation plan can be formulated after the project launch or after the project plans have been established. M&E plan is meant to provide guide for the achievements tracking through results and providing informing on current project progress through data collection. Phili in his study recognized monitoring and evaluation has on of the tool that contributes to project success when properly applied and on time. From the study, M&E plan was able to show relationship between all activities and the expected outputs at each level for proper project monitoring (Phili,2015). Hence M&E plan is depicted to be very complex tool that need to be well designed to ensure all areas of important are included to effective data capturing and monitoring activities comprehensive inclusion.

Moreover there evidence monitoring and evaluation plan used by government of moldova to implement national projects (Moldova, 2012) . The plan shown how monitoring and evaluation will be carried out and risk involved, which contributed greatly to achievement of project the goals since data was available on time for analysis and giving updates on progress. From the above literature we can find that M&E plan is critical tool for project success especially for the agricultural interventions projects.

### 2.3.5 Data Dashboard:

Data dashboard is a key monitoring and evaluation tool that tracks performance of important indicators in an organization (Kerzner, 2015). Dashboards converts raw data into meaningful visualized form making it important for informed decision making by the project team. It provides the team with situational analysis of the current project progress and also gives a basis for future forecasting (Kerzner, 2015). Well designed dashboard enables project managers to make quick decisions concerning project performance by tracking key performance indicators in real time. (Keerzer,2015) further argues that for a dashboard to inform target audience properly the visualization charts and tables should be formatted properly to make it easy to interpret and get intended message for correct decision making.

Agricultural non-governmental organizations in the entire world uses dashboard as one of the visualization tools for management (European Commission, 2016). In one screen or page the dashboard gathers all the information that management and farmers need to know about the entire project for informed action. Further as per (European Commission, 2016) this tool saves the involved stakeholder time and encourages access to quality data and promotes transparency in project implementing organizations.

## 2.4 Critique of the existing Literature:

The research carried out on youths funded agricultural projects in Nakuru, Kenya by (Waithera & Wanyoike , 2015) involved factors and there was no focus focus on any tool of monitoring and evaluation. Although this study has shown the link existing between monitoring and evaluation and agricultural project success they have not shown whether tools of M&E can also cause such influence. Moreover (Wangechi, 2013) study on National Agriculture and Livestock Extension Programme (NALEP) shown link between monitoring and evaluation and project success but also no evidence on whether specific M&E tools contributed.

Study carried out in 26 African countries by (Ika, Diallo & Thuillier, 2009) shown link between monitoring and evaluation and project success, however it did not include data dashboard, Mobile application, Log-frame and M&E plan which makes it difficult to assume such tools also significantly influence the project success. Further, study on HIV projects by (Kathiala, 2013) shown project management software influences project success. He included only one tool others were techniques. The study carried by (Barasa, 2014) within Kakamega County CDF projects included log-frame, stakeholder analysis, budget and strategic plan as tools. None of these studies included mobile applications and Data dashboard as a tool hence their influence on the project success cannot be determined

## 2.5 Research Gap:

Having reviewed the empirical studies and literature that focuses on monitoring and evaluation tools influence on project success it is clear that agricultural projects are less studied areas that need attention. The monitoring and evaluation systems in agricultural intervention is also at early stages of development in Kenya as compared to other developed countries. The studies that focuses on agriculture interventions and M&E influence on success are two one in Ghana and another in Kenya. In addition, none of the studies has focused on the data dashboard and Mobile Application influence on project success. Finally, there is vague knowledge and less literature on how monitoring and evaluation tools influence agricultural interventions project success. This study was a great step since it included data dashboard and mobile Application as a tool and carried out research on the influence of Monitoring and evaluation tools on agricultural project success that is less studied project sector.

## 3. RESEARCH METHODOLOGY

### 3.1 Research Design:

Descriptive research design was adopted as the main design for the study. Descriptive research involves describing population of interest in relation to important variables (Cooper & Schindler, 2003). Descriptive research helped in determining individual responses to variables studied based on their feeling and experiences.

### 3.2 Target Population of the study:

The study target population comprised all the monitoring, and evaluation team and project officers for Farms Africa, These projects are in Eastern, Western, Nairobi and Coastal region in Kenya Due to large number of agricultural projects in Kenya and financial constraints the study will only focus on a single non-governmental organization while targeting four projects. The target population was 56 employees who were divided into four categories Managers, Coordinators, Officers, and Assistant Officers.

### 3.3 Sampling and sample size:

Since the number of staffs involved in monitoring and evaluation at farm Africa is very small, census was adopted instead of sampling. The population was divided into four stratum according to the position held as Managers, Coordinator's, Officers, and Assistant Officers

**Table 3.1: Population Distribution**

Stratum	Population (N)	Percentage (%)
Project Managers	5	8.9
Project and M&E Coordinators	8	14.3
Project and M&E Officers	17	30.4
Project Assistant Officers	26	46.4
<b>Total</b>	<b>56</b>	<b>100</b>

**3.4 Data collection and Instruments:****3.4.1 Questionnaire Development:**

The questionnaire is the main tool for survey and the questions supposed to be structured in simple and easy way for the respondents to understand and give correct answers (Kothari, 2004). Questionnaire was developed through knowledge gathered via literature review and projects documents review, together with supervisor's advice,

**3.4.2 Format of Research Instruments:**

The questionnaire can be either structured or unstructured (Kothari, 2004). The instruments format was arrived at after reviewing literature and project documents to determine nature and format of questions that properly take valid measurements to meet the study objectives. The study questionnaire combined structured and unstructured form to ensure all relevant data was captured. Likert scale was used to measure perception and attitude of the respondent.

**3.4.3 Methods of Data Collection**

In survey or census, data can be collected through interviews, direct observation, or one on one communication with the respondents (Kothari, 2004). Self-administered questionnaire method was used, where hardcopy questionnaires was distributed to the respondents while applying open and closed ended questions.

**3.5 Pilot testing of research Instruments:**

The pilot testing of questionnaire involved four respondents from Africa Monitoring and evaluation department randomly selected. The above was adequate since 1% of the sample should constitute the pilot test (Creswell, 2003). After piloting, necessary changes was made to ensure questionnaire was fully refined for data collection.

**3.6 Reliability and Validity of research instruments:**

**Validity** is the degree to which an instrument measures what it intends to measure as per (Phelan, 2006) . The Supervisor and other Experts will examined instruments to ensure they measured what was intended depending on research objectives and their inputs was incorporated. In addition, pilot testing was used to ensure validity of instruments.

**Reliability-** as per Kothari "a measuring instrument is reliable if it provides consistent results" (Kothari , 2004, p.74). Internal reliability of instrument was measured using Cronbach's alpha Cronbach's alpha measures how group items are closely related (UCLA, 2008). Cronbach's Alpha reliability coefficient  $\alpha$ , only assumes values of between 0 and 1, and closer to 1 the higher the internal consistency and the acceptable number for a questionnaire is  $\alpha=0.7$  or greater

**3.7 Data analysis:**

The researcher collected both qualitative and quantitative data which was analyzed using both qualitative and quantitative techniques. Descriptive statistics were used for the quantitative data while qualitative data was coded to their respective variables for easier analysis. Likert scale was used for easier data analysis. To establish relationship between dependent and independent variables the researcher used multiple linear regression modelling technique, which is applied when you have one response variable, and two or more predictor variables (Kothari, 2004).

**Multiple regression Model**

$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + e$  Where:

Y=Project Success

$\beta_0$  .constant,

$\beta_1$  - co-efficient 1

$\beta_2$  - co-efficient 2

$\beta_3$  - co-efficient 3

$\beta_4$  - co-efficient 4

$X_1$ - Mobile Applications

X<sub>2</sub>- Logical framework

X<sub>3</sub>- Monitoring and Evaluation Plan

X<sub>4</sub>- Rapid Appraisal

ε- Error term

#### 4. RESEARCH FINDINGS AND DISCUSSIONS

##### 4.1 Introduction:

This chapter presents the analysis of the data collected through self-administered questionnaire. Quantitative techniques were used to analyze data which includes quantitative summaries, correlation analysis and regression modelling.

##### 4.2 Response rate:

The study sample size was 56 respondents. After distributing 56 questionnaires, researcher was able to receive back 47 fully filled questionnaires which made a response rate of 83.9%. The response rate was good enough to allow analysis since as per (Kothari, 2004) response rate of 70% is excellent for the analysis to be carried on.

Table 4.1: Response Rate

Number of Questionnaires	Frequency	Percent
Correctly filled and returned	47	83.9%
Not returned	9	16.1%
<b>Total</b>	<b>56</b>	<b>100.0%</b>

##### 4.3 Statistical analysis of the study variables:

In order to determine influence of monitoring and evaluation tools on agricultural project success the study was organized around five variables. The dependent variable was project success and independent variables were, mobile applications, Logical framework, Monitoring and evaluation plan and data dashboard. This section provides a detailed descriptive analysis of each variable.

##### 4.3.1 Project Success:

The project success of agricultural project was measured using various aspects. First the respondents were asked to rank extent of their organizations project success using likert scale of 1-5 with very unsuccessful being lowest score and very successful being highest score. In addition respondents feeling on how various factors indicate success of a project was assessed.

##### 4.3.1.1 Respondents Perception on extent of agricultural project success:

In Table 4.2 42.55% of the respondents had the feelings that agricultural project were successful while 4.26% felt that these projects were unsuccessful. Further, 36.17% of the respondents viewed agricultural projects as very successful. The overall mean of 4.11 with standard deviation of 0.84 was achieved which indicated majority of the responses tended towards successful score.

Table 4.2: Performance rating of Agricultural Project Success

Project Success	Very unsuccessful	Unsuccessful	Neutral	Successful	Very Successful	Mean	Std. Deviation
How can you rate the Success of the Agricultural projects in your organization?	0.00%	4.26%	17.02%	42.55%	36.17%	4.11	0.84



#### 4.3.1.2 Respondents Perception on Factors Indicating Extent of Project Success:

In response to factors indicating project success, large number 80.87% said time measures project success in high extent, 6.38% had the opinion that time shows project success in low extent and 12.77% had neutral feeling which means neither low nor high. In relation to budget 74.47% of the total asserted that it's very important factor to determine project success while 8.5% had the view that it has low extent use as a measure of project success, Overall majority with mean=3.94 and SD=0.89 indicated budget as the factor that indicates project success at high extent rate.

In addition 93.62% of the project team ranked creating impact as the indicator which shows project is successful or not at high extent degree. This variable had (Mean 4.47, S.D=0.67) meaning large number of respondents responses leaned towards a score of very high extent. Similarly meeting project specifications was ranked by vast number as being indicator with high extent ability of showing project success with 95.74% (Mean=4.68, S.D=0.56). Moreover, sustainability was ranked by 91.49% has factor that shows project success with high extent and had mean of 4.53 and standard deviation of 0.78

Finally meeting specification was ranked the best indicator of showing project success with (mean=4.68, S.D=0.56), while sustainability followed closely with (mean=4.53, S.D=0.78), creating impact was number three from the top with (mean 4.47, S.D=0.67) and budget spent was ranked last as a measure to show project success with (mean=3.94, S.D=0.89)

**Table 4.3: Performance of Factors Indicating Extent of Project Success**

Project Success factors	Very Low extent	Low extent	Neutral	High extent	Very high extent	Mean	Std. Deviation
Time	0%	6.38%	12.77%	59.57%	21.28%	3.96	0.78
Budget	0%	8.51%	17.02%	46.81%	27.66%	3.94	0.89
Create Impact	0%	2.13%	4.26%	38.30%	55.32%	4.47	0.67
Meet Specification	0%	0%	4.26%	23.40%	72.34%	4.68	0.56
Sustainability	0%	4.26%	4.26%	25.53%	65.96%	4.53	0.78

#### 4.3.1.3 Respondents perception on influence of monitoring and evaluation on Project Success:

In table 4.4 high number of interviewed projects team 61.70%. demonstrated monitoring and evaluation as having high extent influence on the agricultural project success. Similarly 2.13% believed that monitoring and evaluation had low influence on the project success. Lastly, majority on average ranked monitoring and evaluation as having high extent influence on the agricultural project success with mean of 3.94 and standard deviation of 0.67.

**Table 4.4: Performance of monitoring and evaluation on Project Success**

Influence of M&E on Project Success	Very Low extent	Low extent	Neutral	High extent	Very high extent	Mean	Std. Deviation
How can you rate the influence of M&E on the project Success of Agricultural projects in your Organization?	0.00%	2.13%	19.15%	61.70%	17.02%	3.94	0.67

#### 4.3.1.4 Respondents perception on Monitoring and evaluation tools influence on project success:

In relation to monitoring and evaluation tools influence on project success 40.43% of the respondents ranked mobile application as having high extent influence while 25.53% were neutral. 2.13% said mobile applications have very low extent influence on project success. Further 44.68% of the projects team asserted that logical framework had very high extent influence on project success with 8.51% stating that it had low extent influence. In addition monitoring and

evaluation registered 44.68% believing it has high extent influence on project success and 10.64% ranking it as having low extent influence. Still on monitoring and evaluation plan 19.5% had neutral feeling which means it's neither low extent nor high extent. Moreover data dashboard high extent influence recorded 36.17% with 8.51% ranking this tool as having low extent influence on agricultural project success.

In conclusion logical framework was ranked as the tool with the highest extent of influence on agricultural project success with mean of 4.21 and standard deviation of 0.91. Data dashboard was second with ( mean=4.00, S.D=0.96), followed by monitoring and evaluation plan at third position with (Mean=3.85, S.D=0.93) and mobile application was ranked to have least influence on project success with ( mean=3.81, S.D=0.97)

**Table 4.5: Performance rating of Monitoring and Evaluation Tools influence on project success**

Monitoring and Evaluation tools	Very Low extent	Low extent	Neutral	High extent	Very high extent	Mean	Std. Deviation
Mobile Applications	2.13%	6.38%	25.53%	40.43%	25.53%	3.81	0.97
Logical Framework	0.00%	8.51%	6.38%	40.43%	44.68%	4.21	0.91
Monitoring and Evaluation Plan	0.00%	10.64%	19.15%	44.68%	25.53%	3.85	0.93
Data Dashboard	0.00%	8.51%	19.15%	36.17%	36.17%	4.00	0.96

#### 4.3.2 Mobile Application:

##### 4.3.2.1 Respondents perception on presence of mobile application for M&E:

In figure 4.4, 91% of the respondents had the opinion that mobile application is used for monitoring and evaluation and 8% said no mobile technology is applied

##### 4.3.2.2 Repondents perception on extent of utilization of mobile application:

Majority of the total responded 42.56% had the feeling that mobile technology use is high extent and 8.51% had the rating of low extent use for agricultural projects. The average score of 3.64 was achieved with standard deviation of 0.85 which means there is high extent use of mobile applications. The use of mobile technology in monitoring and evaluation is associated with highly increase use of adroid mobile phones.

**Table 4.6: Performance rating of mobile application utilization**

Mobile Application utilization	Very Low extent	Low extent	Neutral	High extent	Very high extent	Mean	Std. Deviation
How do you rate extent of Mobile Application utilization in Agricultural projects implementation of your organization?	0%	8.51%	34.04%	42.56%	14.89%	3.64	0.85

##### 4.3.2.3 Respondents mobile applications use in M&E data collection:

In regards to mobile applications use the respondents were asked if they have ever used mobile applications to collect project data. In response to this 74% said they have ever used mobile technology to collect project data while 26% stated they have never used mobile phones to collect data.

##### 4.3.2.4 Respondents involvement in designing mobile data collecting form:

In table 4.7 the respondents who have ever been involved in designing mobile data collecting form were only 34.04% while majority 65.96% have never been involved in any kind of consultation during preparations of such tools. This shows need for more engagement of all the staff in designing electronic forms for data collection

**Table 4.7: Respondents involvement in designing mobile data collecting form**

Have you ever been involved in Designing mobile data collecting forms?	Frequency	Percent
Yes	16	34.04
No	31	65.96
<b>Total</b>	<b>47</b>	<b>100</b>

#### 4.3.2.5 Respondents mobile applications knowledge:

In regards to mobile application knowledge majority 34.04% had very little knowledge while 6.38% had no knowledge. Those with very high knowledge were very few 6.38% of the total interviewed. Overall the respondents had little knowledge on mobile applications for monitoring and evaluation with mean of 2.89 and standard deviation of 1.05.

**Table 4.8: Performance rating of respondents mobile application Knowledge**

Mobile Application Knowledge	No knowledge	Very little knowledge	Little Knowledge	High knowledge	Very high knowledge	Mean	Std. Deviation
How would you rate your knowledge on mobile applications use for M&E?	6.38%	34.04%	29.79%	23.41%	6.38%	2.89	1.05

#### 4.3.2.6 Respondents perception on mobile application influence on agricultural projects success:

The majority respondents 74.47% rated productivity boost in monitoring and evaluation activities as having high extent influence on the agricultural project success while Very few number 4.26% believed it had very low extent influence on the project success. Out of 5 productivity boost in M&E activities was having mean of 3.72 with standard deviation of 0.77 which indicates that many believe it had high extent influence on project success determination.

Responses also indicated advantage of reduced risk of data loss as having high extent influence on project success having 53.19%. Also 23.40% of the total respondent agreed this advantage of mobile application had very high extent influence on project success with only 4.26% having opinion that it had very low extent influence.

Easy data processing was viewed by vast number of respondents 46.81% as having very high influence on the agricultural project success. 8.51% had the feelings that this advantage has very low extent influence on project success. Generally the average score for this was 3.94 out of 5 which means it had high influence on project success.

In addition high number of respondents said mobile application encourages quick decision making with high extent and very high extent influence ratings tying at 40.43%. Further very few number 2.13% argued that it has very low extent influence on agricultural project success. It is clearly seen from table 4.9 that quick decision making average score was 4.02 with standard deviation of 1.17 which implies majority rating tends towards very high extent influence on project success.

Similarly, under half (44.68%) of the survey respondents said reduced cost as a result of paperless due to use of mobile applications for data collection had high extent influence on project success. Very few project team 2.13% believed that this advantage provides very low extent influence on the organizational agricultural project success. 12.77% of the interviewed staffs pointed out cost reduction as having neither low extent nor high extent influence on the project success. This reduction in cost advantage managed to score average mean of 4.08 with standard deviation of 0.930 which was highest among other statements and can be interpreted as very high extent influence on project success

Moreover, full functionality even when offline was rated by many number of respondents 40.43% as having high extent influence on project success. Very small proportion 8.51% had the opinion that this ability had very low effect on project success, however overall it achieved mean of 3.38 and standard deviation of 1.22. This means although it was the least influential it was still rated as having high extent influence on the project success.

Finally, all the six statement as shown in table 4.9 had influence on the project success but they vary. Reduced cost due to paperless work leading with (mean=4.08, S.D=0.93) and full functionality assured even offline attaining the least average rating with (mean= 3.38, S.D=1.22). from these results it is clear that mobile application influences agricultural project success at different varying levels.

**Table 4.9: Performance rating of mobile application influence on agricultural projects success**

Statements	Very Low extent	Low extent	Neutral	High extent	Very high extent	Mean	Std. Deviation
Productivity boost in Monitoring & Evaluation activities	4.26%	2.13%	14.89%	74.47%	4.25%	3.72	0.77
Reduced risk of data loss	4.26%	6.38%	12.77%	53.19%	23.40%	3.85	1.00
Easy data processing, analysis	8.51%	8.51%	10.64%	25.53%	46.81%	3.94	1.31
Encourages quick decision making	8.51%	2.13%	8.51%	40.43%	40.43%	4.02	1.17
Reduced cost due to paperless work	2.13%	4.26%	12.77%	44.68%	36.17%	4.08	0.93
Full functionality guaranteed – even offline	8.51	19.15	14.89	40.43	17.02	3.38	1.22

#### 4.3.3 Logical framework:

##### 4.3.3.1 Respondents perception on presence of logical framework:

The majority of the respondents 96% recognized logical framework as one of the monitoring and evaluation tools used while very small number 4% had the opinion that there was no logical framework matrix used in projects .

##### 4.3.3.2 Respondents perception on extent of utilization of logical framework:

In regard to utilization of the logical framework more than half (64.44%) asserted that its use is very high. Similarly 2.22% of the total respondent felt that log-frame was lowly utilized in agricultural projects. Both high extent and very high extent had a total of 91.11% indicating high utilization of this tool in project monitoring and evaluation. Generally the average mean of 4.53 with standard deviation of 0.73 was attained which means there was very high extent usage of logical framework.

**Table 4.10: Performance rating of logical framework utilization**

Mobile Application utilization	Very Low extent	Low extent	Neutral	High extent	Very high extent	Mean	Std. Deviation
How do you rate extent of logical framework utilization in Agricultural projects implementation of your organization?	0%	2.22%	6.67%	26.67%	64.44%	4.53	0.73

##### 4.3.3.3 Respondents involvement in logical framework design/preparation:

Respondents were asked if they have ever been involved in designing/preparation of logical framework and only 13% accepted to have been involved/consulted while 87% said they have never been involved. This shown low total inclusion of the stakeholders (staff) in loframe matrix designing/preparation.

##### 4.3.3.4 Respondents Logical framework knowledge:

With respect to logical framework knowledge majority 34.04% claimed to have very little knowledge , while 31.91% had high knowledge. Suprisingly, there was 10.64% of the respondents with no knowledge on logical framework. The average knowledge was 2.97 with standard deviation of 1.24 which indicates that large number of projects staff had little knowledge on logical framework.

Table 4.11: Performance rating of respondents Logical framework knowledge

Logical Framework Knowledge	No knowledge	Very little knowledge	Little Knowledge	High knowledge	Very high knowledge	Mean	Std. Deviation
How would you rate your knowledge on logical framework?	10.64%	34.04%	12.77%	31.91%	10.64%	2.97	1.24

#### 4.3.3.5 Respondents perception on logical framework influence on Agricultural projects success:

The majority of the respondents 44.68% said logical framework helps in effective resource planning and they rated it as high extent influence on project success. 10.64 % asserted that in term of resource planning it had very low influence on project success. On average this statement scored (mean=3.47, S.D=1.27) which means large number of respondents ranked it as neutral meaning having neither low nor high extent influence on agricultural project success.

Of the total respondents 48.94% ranked ability of logical framework in providing indepth information about the project having high extent influence on causing project to succeed. Very few people 4.26% rated this statement as having very low extent influence on the project succes while 14.89% had neutral perception. Overall providing indepth information had very high extent influence on project success with a mean of 3.85 out of 5 with standard deviation of 1.02.

In regard to aiding in monitoring and evaluation less than half (36.17%) of the respondents said logical framework have high extent influence on project success. Further, 17.03% had the feeling that it has very low extent influence on the project success. On the other had 6.38% of the respondents had the neutral opinion on the influence on project success. This statement scored mean of 3.57 with standard deviation of 1.46 which interprets to having overall high extent influence on project success.

Examining the progress of the project and co-relating the activities carried out and results achieved was another advantage of logical framework, which 51.06% said, had high extent influence on the project success. Very low extent rating had 4.26% respondents. On average it scored (mean=3.70, S.D=0.98) which means it had high extent influence on project success.

Further, majority respondents 38.30% supported logical framework has having very high influence on project success by connecting all the projects components in one framework. 6.38% said it had very low extent influence on the project success by bringing all the project components in one place. On average 75% of the respondents had the opinion that bringing all projects components together causes high extent influence on the agricultural project success.

Moreover, more than half (51.06%) of the total respondents asserted that by stating clearly the project assumptions logical framework has high extent influence on the project success, however small percentage 12.77% respondents had the opinion that it has very low influence. The average mean of 3.34 with standard deviation of 1.37 was achieved which ranked this ability of stating assumptions as having neutral score which means netheir low extent nor high extent influence on agricultural project success.

Finally, connecting all the project components into one framework was the main influence of the logframe which causes highest project success with mean 3.87 and standard deviation of 1.24. Providing indepth about the project followed and examining the progress of the project and corelating activities carried out and results achieved was in third position with means of 3.85 and 3.70 respectively. Stating clearly the project assumptions was the least scored statement with mean of 3.34 and standard deviation of 1.37 which is the only one which scored neutral among the six statements.

**Table 4.12: Performance rating of Logical framework influence on Agricultural projects success**

Statements	Very Low extent	Low extent	Neutral	High extent	Very high extent	Mean	Std. Deviation
Effective resource planning	10.64%	14.89%	10.64%	44.68%	19.15%	3.47	1.27
Providing in-depth information about project	4.26%	6.38%	14.89%	48.94%	25.53%	3.85	1.02
Aiding in monitoring and evaluation of projects	17.03%	8.51%	6.38%	36.17%	31.91%	3.57	1.46
Examining the progress of the project and co-relate the activities carried out and results achieved	4.26%	6.38%	21.28%	51.06%	17.02%	3.70	0.98
Connecting all project components in one framework	6.38%	12.77%	6.38%	36.17%	38.30%	3.87	1.24
States clearly Project Assumptions	12.77%	17.02%	19.15%	25.53%	25.53%	3.34	1.37

#### 4.3.4 Monitoring and evaluation plan:

##### 4.3.4.1 Respondents perception on Presence of Monitoring and Evaluation plan:

In figure 4.8 data shown more than three quarter 79% of the respondents acknowledged presence of monitoring and evaluation plan in their projects while 21% of the interviewed staff said there was no monitoring and evaluation plan in the projects they were implementing.

##### 4.3.4.2 Respondents perception on extent of utilization of monitoring and evaluation plan:

In table 4.13 the extent of utilization of monitoring and evaluation plan was rated 31.91% for both high extent and very high extent. Significant number 14.89% also rated M&E plan utilization as being low while 21.29% had neutral opinion on its extent of usage. On average the M&E plan utilization scored a mean of 3.81 and standard deviation of 1.06 which puts its usage as high extent for the agricultural projects.

**Table 4.13: Performance rating of Monitoring and evaluation plan utilization**

Monitoring and evaluation plan utilization	Very Low extent	Low extent	Neutral	High extent	Very high extent	Mean	Std. Deviation
How do you rate extent of Monitoring and evaluation plan utilization in Agricultural projects implementation of your organization?	0%	14.89%	21.29%	31.91%	31.91%	3.81	1.06

##### 4.3.4.3 Respondents involvement in Monitoring and evaluation plan preparation:

A large number of respondents 87% have been involved in monitoring and evaluation plan preparation for the agricultural projects. 13% said they had never been involved in preparation of the monitoring and evaluation plan.

##### 4.3.4.4 Respondents monitoring and evaluation plan knowledge:

The large number of the interviewed project team 36.17% had little knowledge on monitoring and evaluation plan while 27.66% had very little knowledge. Those who expressed to have very high knowledge were represented by only 6.38% of the total interviewed staff. It is quite encouraging to learn none of the staff had no knowledge on monitoring and evaluation plan. Large number of the respondents had either very little or little knowledge as shown in table 4.14 below.

**Table 4.14: Performance rating of respondents Monitoring and Evaluation plan knowledge**

Monitoring and Evaluation plan Knowledge	No knowledge	Very little knowledge	Little Knowledge	High knowledge	Very high knowledge	Mean	Std. Deviation
How would you rate your knowledge on Monitoring and evaluation plan?	0%	27.66%	36.17%	29.79%	6.38%	3.15	0.91

#### 4.3.4.5 Respondents perception on monitoring and evaluation plan influence on Agricultural projects success

More than half ( 55.32%) of the project team members interviewed viewed monitoring and evaluation plan as having high extent influence on project success by specifying appropriate data collection methods. Despite this, there was small proportion of repondents 2.13% who said specifying data collection methods had very low influence on project success. On average mean of 3.87 with standard deviation of 0.82 was attained for this contribution of M&E plan to project success which falls under high extent influence on project success.

Monitoring and evaluation plan ability of making stakeholders understands project timelines was perceived as having high extent onfluence on project success by 46.81% of the total interviewed respondents while a very small percentage 8.51% viewed this as having very low extent influence. Those who had a view of it having very high influence was only 23.40% and overall mean of 3.68 out of 5 was realized with standard deviation of 1.18 which was interpreted as high extent influence.

Further, as can be seen from table 4.15 adequency of scheduling ability of monitoring and evaluation plan was rated by majority 44.68% has having high ectent influence on project success and similarly small proportion of the respondents 14.89% felt it had very low influence on the same. On average the repondents had neutral feelings about monitoring and evaluation ability to achieve adequacy of scheduling which achieved (mean=3.47, S.D=1.35)

In addition, speed in deployment of resources was viewed as having neutral influence on project success by 25.53%, while 23% had the feeling that it has very high extent influence. A very small number of repondents 12.78% rated speed of deployment of the project resources as having very low extent influence on project success. Mean of 3.30 and standard deviation of 1.33 was overall for all respondents which means majority had neutral feelings on its influence on project success.

Effect on ease of project staffing is another monitoring and evaluation plan contribution to project success, which many respondent 34.04% viewed as being high extent influencer on project success. From analysis results, 12.77% respondents said ease on project staffing has very low extent influence on project success.

In regards to determining project risk 34.04% of the interviewed project team said monitoring and evaluation plan had very high extent influence on the project success, while 4.26% had contrally opinion that this tools had very low extent influence on project success. On average M&E plan use in determining project risk was viewed as having high extent influence since its mean score out of 5 points was 3.78 with standard deviation of 1.16

Finally, considerig all the contributions of monitoring and evaluation plan to the project succes its ability to specify appropriate data collection methods was ranked as the best for influencing project success with (mean=3.87, SD=0.82), followed by impact on stakeholders understanding of the project with (Mean=3.68, S.D=1.18) while speed of deployment of the resoueces was the last with (mean=3.30, S.D=1.33).

**Table 4.15: Performance rating of monitoring and evaluation plan influence on Agricultural projects success**

Statements	Very Low extent	Low extent	Neutral	High extent	Very high extent	Mean	Std. Deviation
Appropriate data collection methods specified	2.13%	2.13%	21.28%	55.32%	19.15%	3.87	0.82
Impact on project stakeholders understanding of project timelines	8.51%	8.51%	12.77%	46.81%	23.40%	3.68	1.18
Effect on adequacy of scheduling	14.89%	10.64%	8.51%	44.68%	21.28%	3.47	1.35
Speed in deployment of project resources	12.78%	14.89%	25.53%	23.40%	23.40%	3.30	1.33
Effect on ease of project staffing	12.77%	10.64%	12.77%	34.04%	29.79%	3.57	1.36
Can be used to determine some project risks	4.26%	10.64%	21.28%	29.79%	34.04%	3.78	1.16

#### 4.3.5 Data Dashboard:

##### 4.3.5.1 Respondents perception on presence of data dashboard:

A great number of the respondents 83% interviewed said dashboards were used in the projects they were working with while 17% disagreed. This shown atleast every project had data dashboards to help managment make informed decisions based on summarized data.

##### 4.3.5.2 Respondents perception on extent of utilization of data dashboard:

The high number of respondents 38.30% viewed data dashboard utilization in agricultural projects as being high extent while 2.13% said it had very low extent usage. Small number 6.38% had the feelings that projects neither had low nor high extent usage of data dashboard. On average utilization of data dashboard was high extent with (mean=3.89, S.D=1.15)

**Table 4.16: Performance rating of data dashboard utilization**

Data dashboard utilization	Very Low extent	Low extent	Neutral	High extent	Very high extent	Mean	Std. Deviation
How do you rate extent of Data dashboard utilization in Agricultural projects implementation of your organization?	2.13%	17.02%	6.38%	38.30%	36.17%	3.89	1.15

##### 4.3.5.3 Respondents involvement in Data dashboard preparation:

Project staff involvement in data dashboard design and preparation was assessed and majority 94% admitted to have been involved, while 6% of the respondents said they have never been involved in data dashboard preparation or design. The results were good since majority were involved in ensuring managements are informed on time.

##### 4.3.5.4 Respondents Data dashboard knowledge:

The table 4.17 revealed that 31.91% of the respondents had high knowledge on the data dashboard with 27.66% having very little knowledge. Only 25.53% have little knowledge and none with no knowledge at all. On average the data shown almost all members have little knowledge on the data dashboard that is used by management for the informed decision making.



Table 4.17: Performance rating of respondents data dashboard knowledge

Data dashboard Knowledge	No knowledge	Very little knowledge	Little Knowledge	High knowledge	Very high knowledge	Mean	Std. Deviation
How would you rate your knowledge on Data dashboard?	0%	27.66%	25.53%	31.91%	14.89%	3.34	1.05

#### 4.3.5.5 Respondents perception on data dashboard influence on Agricultural projects success

In table 4.18 majority respondents 42.55% rated ability of a data dashboard to facilitates project performance monitoring as having high extent influence on project success. Those who had contraly view of its having low extent influence were 6.38%. Similarly data shown 10.64% of the interviewed project team had neutral feelings about ability of dashboard to facilitake in project performance monitoring while 40.43% had very high extent feeling. The mean score of 4.17 with standard deviation of 0.87 shown overall this advantage had high extent influence on agricultural project success.

Data dashboard ability to save time by reducing routine data analysis was ranked by large number of interviewed staff 44.68% as having very high extent influence on agricultural project success, while 2.13% felt it had very low extent influence on the agricultural project success. The overall (mean=4.12, S.D=0.99) can be interpreted as having high extent influence on project success by ability of the dashboard to reduce routine data analysis.

In additional the data dashboard ability to Provides rapid information for the management decision-making was rated having high extent influence on agricultural project success by high proportion of the respondents 44.68% while a small fraction 4.26% had a view of it having very low extent influence. Those who had neutral feelings about this dashboard function amount to only small proportion 6.38%. Aggregating the total responses the mean of 4.00 with standard deviation of 1.08 was achieved which means it had high extent influence on the agricultural project success.

Customization in terms of user expectations was another data dashbond capability which large number of repondents 48.94% said it had high extent influence on the agricultural project success. Similarly very small proportion of the interviewed respondents 4.26% had the opinion that it had low extent influence with only 6.38 believing it has very low extent influence on the project success. On average respondent had opinion that this dashboard advantage of making users to have customisation based on needs had high extent influence on the agricultural project succes since its overall mean was 3.91 with standard deviation of 1.08.

Further, respondents view on how data dashbord Visualize Data for Better Understanding was having very high extent influence on project success with 38.3%. In addition, those who had neutral feelings were 10.64% while those expressed their views as having very low extent influence amount to only 4.26%. The average mean score as shown in table 4.18 was 3.18 with standard deviation of 1.11, which shown high proportion of the respondents viewed this ability of data dashboard as having neutral influence on the agricultural project success.

Moreover , enabling reporting, analyzing, and presenting data in real time is another dashboard main function that high number of respondents 40.43% viewed as having very high extent influence on the agricultural project success while 17.02% ranked it has having very low extent influence. On average it had high extent influence since it scored (mean=3.98, S.D=1.10)

Finally, Facilitating project performance monitoring was ranked as the best ability of the data dashboard to influence project success with (mean=4.17, S.D=0.87) while the ability to be customized in terms of users and expectations was the last with (mean =3.91, S.D=1.08)

**Table 4.18: Performance rating of data dashboard influence on Agricultural projects success**

Statements	Very Low extent	Low extent	Neutral	High extent	Very high extent	Mean	Std. Deviation
Facilitates project performance monitoring	0.00%	6.38%	10.64%	42.55%	40.43%	4.17	0.87
Saves time by reducing routine data analyses	2.13%	4.26%	17.02%	31.91%	44.68%	4.12	0.99
Provides rapid information for the management decision-making	4.26%	8.51%	6.38%	44.68%	36.17%	4.00	1.08
Can be customized in terms of users and expectations	6.38%	4.26%	10.64%	48.94%	29.79%	3.91	1.08
Visualizing Data for Better Understanding	4.26%	8.51%	10.64%	38.30%	38.30%	3.98	1.11
Enabling Reporting, Analyzing, and Presenting Data in Real Time	0.00%	17.02%	10.64%	31.91%	40.43%	3.98	1.10

#### 4.4 Inferential statistics:

The study carried out inferential statistics to determine relationship between variables using correlation and regression analysis. The correlation was used to establish strength of relationship between variables and to test multicollinearity effect. Regression analysis was used to establish nature of the relationship between independent and dependent variables.

##### 4.4.1 Pairwise Correlation Analysis between project success and Monitoring and Evaluation tools:

All the five studied monitoring and evaluation tools; Mobile applications, Logical framework, monitoring and evaluation plan and data dashboard had strong positive correlation with project success. Logical framework as shown in table 4.19 revealed strong positive correlation of 0.7967 which means as the extent of logical framework matrix influence on project success increases also the project success extent goes higher and similarly as it reduces also project success rate decreases. The second highest strong positive correlation was for mobile applications with 0.7458 which means as the extent of influence of mobile applications increases the project success increases and vice versa. The monitoring and evaluation plan had correlation of 0.7148 which is positive and data dashboard was having least correlation amongst four tools which is 0.667, still positive and can be interpreted as good since if extent of influence of data dashboard increases the agricultural project success also increases and if it reduces also project success decreases.

In addition there was no two independent variables with a correlation of either equal to or greater than +or - 0.7 and hence there was no multicollinearity problem

**Table 4.19: Correlation results for project success and Monitoring and Evaluation tools**

	Project Success	Mobile Applications	Logical Framework	Monitoring and Evaluation Plan	Data Dashboard
Project Success	1				
Mobile Applications	0.7458*	1			
Logical Framework	0.7967*	0.6401*	1		
Monitoring and Evaluation Plan	0.7148*	0.5209*	0.501*	1	
Data Dashboard	0.677*	0.4926*	0.5015*	0.5859*	1

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

**4.4.2 Regression model:**

The regression model was used to determine relationship between agricultural project success and monitoring and evaluation tools; Mobile applications, Logical framework, monitoring and evaluation plan and Data dashboard,

**4.4.2.1 Significance of the model:**

The results in table 4.20 shows the model is significance since p,value=0.000 which is significance at alpha=0.05. The (F=52.129, p value =0.000) proves existence of significance relationship between dependent variable; project success and independent variables; Mobile applications, Logical framework, monitoring and evaluation plan and Data dashboard,

**Table 4.20: ANOVA**

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	27.025	4	6.756	52.129	.000 <sup>b</sup>
	Residual	5.443	42	.130		
	Total	32.468	46			
a Dependent Variable: Project Success						
b Predictors: (Constant), Data Dashboard, Mobile Applications, Monitoring and Evaluation Plan, Logical Framework						

**4.4.2.2 Strength of the model:**

The model summary in table 4.21 shows regression models power in explaining changes in project success. R squared of 0.832 means 83.2% of the changes in project success can be explained by Mobile applications, Logical framework, monitoring and evaluation plan and Data dashboard, The remaining 16.8% can be explained using other factors which are not included in the model.

**Table 4.21: Model Summary**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.912 <sup>a</sup>	.832	.816	.360

a. Predictors: (Constant), Mobile Applications, Logical Framework, Monitoring and Evaluation Plan, Data Dashboard

**4.4.2.3 Regression Coefficients:**

The data analyzes resulted to the regression coefficients in the table 4.22. The four studied tools: Mobile applications, Logical framework, monitoring and evaluation plan and Data dashboard had significance influence on the agricultural project success since they had p values<0.05. From these results the four study questions were answered as follows.

First study was seeking to establish how mobile application usage influences agricultural project success in NGO's in Kenya. After the analysis it was clearly noted there was positive relationship between mobile application use and project success ( $\beta = 0.219$ ,  $t = 2.9$ , P value =0.006). This implies that a unit change in mobile application influence results to 0.219 units increase in project success

Second question the study sought to answer was how logical framework usage influences Agricultural project success in NGO's, in Kenya. The data analysis revealed a positive relationship between logical framework and project success ( $\beta = 0.374$ ,  $t = 4.662$ , P value =0.000). Further, a unit change in logical framework causes project success to increase by 0.374units

Thirdly, the study sought to know how Monitoring and evaluation plan usage influences Agricultural project success in NGO's, in Kenya. From table 4.22 it is clear there is positive relationship between monitoring and evaluation plan and project success ( $\beta = 0.241$ ,  $t = 3.202$ , P value =0.003). the results implies a unit change in monitoring and evaluation plan influence leads to 0.241 units increase in project success.

The fourth study question sought to find out how Data Dashboard usage influences Agricultural project success in NGO's, in Kenya. From the analyzed data there is positive relationship between data dashboard and project success ( $\beta = 0.17$ ,  $t = 2.342$ , P value =0.024). this implies a unit change in data dashboard results to 0.17 units increase in project success.

Table 4.22: Regression Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.089	.286		.311	.758
	Mobile Applications	.219	.075	.253	2.900	.006
	Logical Framework	.374	.080	.404	4.662	.000
	Monitoring and Evaluation Plan	.241	.075	.268	3.202	.003
	Data Dashboard	.170	.073	.193	2.342	.024
a Dependent Variable: Project Success						

It is clear from the above results that monitoring and evaluation tools causes positive influence on project success. The multiple linear regression equation from the above results becomes:

$$\text{Project Success} = 0.89 + 0.219(\text{Mobile Application}) + 0.374(\text{Logical framework}) + 0.241(\text{Monitoring and evaluation plan}) + 0.17(\text{Data dashboard}) + \varepsilon$$

## 5. SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

### 5.1 Summary of major findings:

The study sought to examine the influence of monitoring and evaluation tools usage on agricultural project success in NGO's in Kenya. In general there was evidence of positive influence of monitoring and evaluation tools usage on agricultural project success which agrees with (Barasa, 2014) findings that there is significance influence of Monitoring and evaluation tools on successful project completion. From the final regression mode 83.2% of the changes in project success can be explained by monitoring and evaluation tools studied while the remaining 16.8% can be explained using other factors which are not included in the model. Generally agricultural projects were rated as being successful. Further more than half of the project team had never attended any monitoring and evaluation or project management training.

#### 5.1.1 Influence of mobile application on agricultural project success:

The first objective of the study was to establish how Mobile Application usage influences agricultural project success in NGO's, in Kenya. There was evidence of mobile application use in agricultural projects which agreed with (BetterEvaluation, 2017) which states that mobile applications are used in conducting retrospective evaluation of the projects. It emerged that use of mobile applications leads to agricultural project success which aligns well with (USAID, 2012), that use of mobile applications yield benefits of quick information exchange hence creating positive impact on project success. It was also realised majority of the project team had little knowledge on mobile digital data collection form designing.

#### 5.1.2 Influence of Logical framework on agricultural project success:

The second objective of the study was to determine how Logical framework usage influences agricultural project success in NGO's, in Kenya. Logical framework use in agricultural project was highly recognized and it had positive influence on the agricultural project success with highest positive correlation of 0.8 which was similar to (Jensen, 2010) that logframe matrix is main project monitoring and evaluation tools aiding data collection for informed decision making. Logical framework stood out as the most influential monitoring and evaluation tools on project success. Very few project team members were involved in logical framework preparation and knowledge was very low with small group having no knowledge on this tool.

#### 5.1.3 Influence of monitoring and evaluation plan on agricultural project success:

The third objective of the study was to establish how Monitoring and evaluation plan usage influences agricultural project success in NGO's, in Kenya. The results shown evidence of monitoring and evaluation use in agricultural projects which aligns well with (Phili, 2015) findings that Monitoring and evaluation plan is one of the key Monitoring and evaluation tool. There was positive correlation of 0.7 between monitoring and evaluation plan and project success. In addition the regression model shown positive influence of monitoring and evaluation plan on project success which agrees with (FAO, 2016) findings that M&E plan must be present in order for a project to realize better results.

**5.1.4 Influence of data dashboard on agricultural project success:**

The fourth objective of the study was to find out how Data Dashboard usage influences agricultural project success in NGO's, in Kenya. The implementing team stated there was use of data dashboards in the projects they were implementing and majority 94% had been involved in data dashboard designing or preparation. The results shown positive correlation (0.67) between data dashboard use and project success and regression model also shown positive relationship. This results aligns well with (Allgeier, 2016) which states that data dashboard provides basis for successful project management. In addition More than half of the respondents had little knowledge on the management data dashboard.

**5.2 Conclusions:**

It was concluded that monitoring and evaluation has influence on the project success. In addition the use of monitoring and evaluation tools leads to higher chances of the project to succeed. Further, there was less emphasis on the monitoring and evaluation or project management trainings for capacity development.

**5.2.1 Influence of mobile application on agricultural project success:**

Study concluded there is a positive significance relationship between mobile application usage and agricultural project success. The researcher noticed that with increased access to mobile technology it will be easy to use this M&E tool in projects for quick data processing and decision making. Further, since most applications are running on android platforms, it has enabled large number of project team to have minimal requirements for operating.

**5.2.2 Influence of Logical framework on agricultural project success:**

In addition the study concluded that there is positive significant relationship between logical framework use and agricultural project success. Researcher established that this advantage is brought by logical framework ability of bringing all the project components together and providing specific indicators to be monitored. Further study concludes that by involving project team in designing logical framework it will give an opportunity for learning to those who have little or no knowledge on logframe matrix.

**5.2.3 Influence of monitoring and evaluation plan on agricultural project success:**

Further, the study concludes monitoring and evaluation plan has positive significant relationship with agricultural project success. The researcher concludes that proper monitoring and evaluation plan puts every project stakeholders on the same line concerning what to be done, when and by who which finally makes activities to be implemented on time and appropriately resulting to project success. Similarly, it is concluded that monitoring and evaluation plan should be incorporated during project initialization.

**5.2.4 Influence of data dashboard on agricultural project success:**

Equivalently, the study concluded that Data dashboard and project success have a positive significant relationship. All the project team should have ability to use and design management data dashboard since it involves entire team for usage. The researcher also concluded that there is need to keep on updating data dashboard as the project need changes to ensure crucial data is not left out.

**5.3 Recommendations:**

From the summary of findings and conclusions the researcher recommends the following in regard to influence of monitoring and evaluation tools on agricultural project success.

Since all the four studied monitoring and evaluation tools had positive significance influence on the project success it is recommended that management maximise on these tools during project implementation to achieve set objectives and create intended impact

The management should make sure all the project team members are involved in designing and preparation of monitoring and evaluation tools to increase knowledge and create ownership of the process.

From the findings very small proportion had professional qualifications, hence Project team members should be encouraged to pursue professional certificate in areas related to project/monitoring and evaluation to increase knowledge and improve skills.

The researcher also recommends management to organize tailor-made monitoring and evaluation trainings for all project members to enhance knowledge and skills on M&E tools designing and usage and Finally, researcher recommends more attention be given to logical framework design at conceptual stage of project because it is the backbone of monitoring and evaluation activities

#### 5.4 Areas of further research:

The study examined only four monitoring and evaluation tools ( Mobile applications, Logical framework, monitoring and evaluation plan and Data dashboard). There are other numerous M&E tools that have potential to influence project success such as budget, surveys, policy framework among others. Future studies should focus on other factors that can have influence on agricultural project success.

Further, the study focused on agricultural sector only, future studies should be done in other industries such as construction, public projects, humanitarian sector among others to determine the extent of influence of these monitoring and evaluation tools on different projects environment.

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