



DRIVERS OF PROJECT MANAGEMENT EFFICIENCY IN AGRICULTURAL PROJECTS IN KENYA: A CASE OF INTERNATIONAL FERTILIZER DEVELOPMENT CENTRE (IFDC)

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ABSTRACT

This study sought to establish the drivers of project management efficiency that are essential in contributing to the success of agricultural projects. The research was conducted in the agricultural projects financed and developed by the International Fertilizer Development Centre in Kenya. The study targeted 96 project staff members, which provided pertinent information about the research problem. A census survey technique method was used and data was collected through the use of questionnaires. The data was analyzed by use of both qualitative and quantitative methods with the help of Statistical Package for Social Sciences (SPSS). It was notable that there exists strong positive relationship between the independent variables and project management efficiency in agricultural projects. The study recommended that a needs analysis of stakeholders should be conducted. This identifies their needs and prioritizes them as well as helping in identifying the root causes of the problem. The study recommended that the top management should ensure that there are adequate communication channels to support project team activities. The top management team should motivate the project team and delegate the responsibilities to the overall team and individual teams. There should be adequate coordination of project activities and the project team adheres to the set rules, procedures and standards. The study recommended adequate financing mechanisms to enhance timely completion of projects and ensure reduction of cost overruns. The financial management of the capital invested in the project should be meant for the delivery of a quality project. There is need for transparency and accountability on the management of the project funds and other available project resources. There should be resource planning (equipment, staffing and funds) for the implementation of the project activities.

Key Words: stakeholder involvement, top management, resource allocation, monitoring and evaluation, Project management

INTRODUCTION

For many organizations, projects are fundamental to the way they operate. Engineering group Siemens estimates that 50 per cent of its revenue is from projects, while major management consultancies earn over 90 per cent of their revenues from projects (Burney & Naylor, 2012). It therefore becomes of paramount importance that organizations understand and acknowledge the importance of applying certain practices in the implementation of their projects. Project results should be aligned to companies' strategic goals and objectives. Efficiency in a project measures how well and creatively a manager uses his resources to reach the predefined goals, but in project management it is about knowing how to secure the right project team to perform project tasks and to operate a project productively within the agreed project constraints of scope, time, quality and budget.

Project management efficiency continues to evolve, playing a leapfrog game with the needs of the project-driven workplace. Solid project management efficiency enables firms to take on more complex projects, which in turn demands more complex project management techniques. To meet desired goals, 'Project Management for Projects' has created a certification based on a description of project management that bridges the gap between the realities of development projects and existing standards such as PRINCE2 and the Project Management Institute (PMI) (Verzuh, 2015).

According to a survey conducted by the Project Management Institute in 2016, only 64 per cent of projects meet their goals. The study also revealed that organizations waste 122 million American dollars for every 1 billion dollars invested due to poor project performance. More projects are failing, resulting in significant monetary loss (PMI, 2016). The report notes that with shrinking project outcomes, shifting global trends, and an uncertain economy,

organizations must shift their thinking and embrace project management practices as a strategic competency that can reduce risk, cut costs and improve project success rates. Volker Seitz, a German diplomat with 17 years of experience says that three out of four development projects in Africa fail (EurActiv, 2013). A common risk to projects is failure to start work on time (Lock, 2007). Very long delays can be caused by procrastination, legal or planning difficulties, shortage of information, lack of funds or other resources, and a host of other reasons that determine project management efficiency.

The current state of project management efficiency in developing African countries remain very critical due to the advancement of technology, the increasing complexity of projects and the scarcity of human capital (Crawford et al., 2006). According to Birkhead, et al., (2010) there has been an urgent need for the development of project management practices in developing countries due to the changing nature and emergence of new technologies and the relaxation of trade regulations, which have resulted in a highly competitive marketplace. Project management has gained popularity as a distinct management concept used to drive not only business objectives, but also the economic development agenda of developing countries including Ghana. Several programmes in Ghana, such as real estate development, event planning, product development, infrastructure development, especially those tied to foreign aid from development partners, and Ghana's own development policy programmes like the Presidential Special Initiatives (PSI) (Ghana Investment Promotion Corporation [GIPC], 2001) and the Ghana Poverty Reduction Strategy Papers (GPRS I & II) (National Development Planning Commission [NDPC], 2002; 2005), all lay heavy emphasis on the use of projects and project management as a tool to optimize the rate of success.

Dozens of projects have failed in post-independence Kenya due to a variety of factors that can be connected to the failure to apply best project management practices. For instance, in 1975, Kenya sought to own a fertilizer plant following an acute shortage of fertiliser in 1970 that led to poor yields. The agreement was signed in 1975 between the government and an American firm based in Ohio known as N-Ren International, with Kenya owning 65 per cent shares (Mutegi, 2012). The government guaranteed 14.1million Kenya shillings on behalf of N-Ren while Treasury set aside 428 million shillings for the project. Contrary to what Treasury had negotiated, management costs and construction were transferred to the Kenya government. N-Ren brought a plant that had been rejected in the Republic of Ireland to Mombasa. Kenya wanted a new plant that could manufacture nine types of fertiliser, but the dumped equipment could manage only four (Mutunga, 2011).

The International Fertilizer Development Centre (IFDC) is a science-based public international organization working to alleviate global hunger by introducing improved agricultural practices and fertilizer technologies to farmers; and by linking farmers to markets. It was established in October 1974, with its headquarters in Alabama, USA. The organization has offices and staff stationed across Africa, Asia and Europe; and runs projects in over 25 countries. IFDC receives funding from various bilateral and multilateral development agencies, private enterprises, foundations and an assortment of other organizations. IFDC's East and South Africa Division (ESAFD) is based in Nairobi, Kenya, and handles areas where previous farming techniques are no longer adequate for the growing population. The division works to improve farmers' access to quality seeds and fertilizers as well as markets to cover their costs. ESAFD has ten countries in its network namely: Burundi, Democratic Republic of the Congo, Ethiopia, Kenya, Mozambique, Rwanda, South Sudan, Tanzania,

Uganda and Zambia. In Kenya, IFDC is working to improve livelihoods with different agricultural projects in the country

Statement of the Problem

Many governments, organizations and donors allocate huge financial resources to fund agricultural projects in Kenya. In an ideal situation, the project teams usually involve all stakeholders likely to be affected by the project so as to ensure that everybody's interests are taken into account (Schmidt, 2009). The support and involvement of top management in an organisation in project implementation is important because they are the decision channels and help to avoid or minimize conflicts that could impede project performance. When the project implementation is underway, monitoring of the activities is carried out to ensure that the project is on the right track (Soota, 2005).

However, the reality is that many agricultural projects fail due to lack of good project management efficiency. For instance, the dismal performance of the NIB's Galana Kulalu food security project is worrying. The 1.75 million acres project that straddles Tana River and Kilifi counties managed a paltry ten 90kg bags of maize per acre on the 10,000-acre model farm - a far cry from the 40 bags that had been expected from an acre (Omondi, 2015). A 40-bag harvest of maize from an acre at Galana scheme would have surpassed the national average of 17 bags that farmers in the country's grain basket of Rift Valley harvest from the same size of land. For a mega project to be initiated in the coast region, the local residents, extension workers and the area's political class should have been consulted (Omondi, 2015). Non-inclusive prioritization could have contributed to the poor yields, and regular monitoring of the project's activities would have been ideal. This research would be of use to project management practitioners in the agricultural sector by demonstrating that project management efficiency

will be vital in ensuring food security in the country, as well as increasing agricultural exports.

Objectives of the Study

The purpose of the study was to establish the drivers of project management efficiency in the agricultural projects in Kenya. The specific objectives were:-

- To establish the effect of stakeholder involvement on project management efficiency in the agricultural projects in Kenya
- To examine the influence of top management support on project management efficiency in the agricultural projects in Kenya
- To determine the effect of resource allocation on project management efficiency in the agricultural projects in Kenya
- To establish the influence of monitoring and evaluation on project management efficiency in the agricultural projects in Kenya

LITERATURE REVIEW

Theoretical Review

Stakeholder Theory

The proponents of the stakeholder theory postulate that organizational performance is a function of how well an organization satisfies its stakeholders and focuses on building closer customer relationships (Freeman, 2007). Stakeholder theory is managerial in that it reflects and directs how managers operate rather than primarily addressing management theorists and economists. The focus of the stakeholder theory is articulated in two core questions (Freeman, 2004). First, it asks, what is the purpose of the firm? This encourages managers to articulate the shared sense of the value they create, and what brings its core stakeholders together. This propels the project management forward and allows it to generate outstanding performance. Second, stakeholder theory asks, what responsibility does

project management have to stakeholders? This pushes managers to articulate how they want to do project activities - specifically, what kinds of relationships they want and need to create with their stakeholders to deliver on the project goals.

Human Capital Theory

According to Gary Becker's Human Capital Theory of 1964, 'human capital corresponds to any stock of knowledge or characteristics the worker has (either innate or acquired) that contributes to his or her productivity'. It postulates that expenditure on training and education is costly and should be considered an investment since it is undertaken with a view to increasing personal productivity. Human capital represents the human factor in the organization; the combined intelligence, skills and expertise that gives the organization its distinctive character (Armstrong, 2009). Armstrong and Taylor (2014) also concur that human capital theory is concerned with how people in an organization contribute their knowledge, skills and abilities to enhancing organizational capability and the significance of that contribution. Torrington (2008) explains that human capital signifies the combined intelligence and experience of staff as a source of competitive advantage that cannot be imitated by rivals. The significance of human capital theory is that it regards people as assets and stresses that investment by organizations in people will generate worthwhile returns. Bratton & Gold (2012), on the other hand posit that people's performance and the results achieved can be considered as a return on investment and can be assessed in terms of costs and benefits. Wilton (2011), argues that the benefits of training and development to the organization include a range of positive HR outcomes such as improved quality of employed labour, reduced turnover and enhanced employee commitment.

Agency Theory

To examine the influence of resources allocation and top management support on project management efficiency in the agricultural projects in Kenya, the study will be based on agency theory. Agency theory is concerned with agency relationships. The two parties have an agency relationship when they cooperate and engage in an association wherein one party (the principal) delegates decisions and/or work to another (an agent) to act on its behalf (Eisenhardt 2009; Rungtusanatham, Rabinovich, Ashenbaum & Wallin, (2007). The important assumptions underlying agency theory is that; potential goal conflicts exist between principals and agents; each party acts in its own self-interest; information asymmetry frequently exists between principals and agents; agents are more risk averse than the principal; and efficiency is the effectiveness criterion.

Control Theory

The control theory, invented by Ouchi (1979) and Eisenhardt (1985) uses the notion of modes of control to describe all attempts to ensure that individuals in organizations act in a way that is consistent with organizational goals and objectives (Kirsch, 1997). The concept of control is based on the premise that the controller and the controlee have different interests. These different interests will be overcome by the controller's modes of control (Tiwana, 2009). Modes of control may distinguish between formal and informal mechanisms. Formal modes of control are defined as behaviour control and outcome control. Behaviour control consists of articulated roles and procedures and rewards based upon those rules. Outcome control is mechanisms for assigning rewards based on articulated goals and outcomes. The informal modes of control are carried out by the control modes labelled as clan and self. Clan are the mechanisms of a group sharing common values, beliefs, problems, and these mechanisms work through activities as hiring and training of staff,

socialization etc. The control mode of the self is about individually defined goals and can be carried through the mechanisms of individual empowerment, self-management, self-set goals, etc. (Kirsch, 1997).

Conceptual Framework



Figure 1: Conceptual Framework

Stakeholder Involvement

Stakeholder involvement is described as a social process in which groups with shared needs living in a certain geographical area actively identify needs, make decisions, and set up mechanisms to achieve solutions/goals (Adesina, 2010). However, heterogeneous groups and individuals can become stakeholders and collectively take action to attain shared and specific goals. The absence of user involvement is the major cause of project failure. Even when delivered on time and on budget, a project can fail if it does not meet users' needs. This

is to ensure that projects remain relevant to the stakeholders.

Top Management Support

The degree of management support for a project will lead to significant variations in the clients' degree of ultimate acceptance or resistance to that project or product (Dukerich, 2002). Management's support of the project may involve aspects such as communication, coordination, commitment and allocation of sufficient resources as well as the project manager's confidence in their support in the event of crises. White and Fortune (2006) states that adequate communication channels are important for the project management efficiency for the project success. Motivation and inspiration is important for the staff members. They need support and encouraging words of the top management to mitigate the frustration raised in the morale of subordinates (Glaster, 2005).

Resource Allocation

Resource allocation in projects means that for any meaningful project success to be realized, resources must be availed. These resources include finances, human capital resource, motor vehicles, computers, managerial resources and time (Gwadoya, 2011). Resource allocation comprises a number of different factors that influence project management efficiency in the projects. The factors include physical, human and financial resources. The effects of these resources on project management efficiency have been extensively studied with diverse results. Lots of concerns have been raised in theoretical and empirical research in the economics, management and sociology disciplines on whether the projects are worth investing by allocating these resources (Ghazala & Vijayendra, 2011). With proper allocation and utilization of these resources; there will be efficiency and effectiveness in implementation and

thus increased output. This will make the projects to be easily monitored, reports and feedback given on time. The time reporting is necessary for interventions that should be done to save projects from collapsing (Gichuki, 2012).

Monitoring and Evaluation

Monitoring can be defined as the ongoing process by which stakeholders obtain regular feedback on the progress being made towards achieving their goals and objectives while evaluation is a rigorous and independent assessment of either completed or ongoing activities to determine the extent to which they are achieving stated objectives and contributing to decision making (UNDP, 2009). Monitoring and evaluation is conducted for several purposes namely: to learn what works and does not; to make informed decisions regarding programme operations and service delivery based on objective data; to ensure effective and efficient use of resources; to track progress of programmes; to assess extent the programme is having its desired impact; to create transparency and foster public trust; to understand support and meet donor needs; and to create institutional memory.

Project Management Efficiency

Project management efficiency is the pillar to the success and sustainability of agricultural projects. Müller and Jugdev (2012) see measurement of project management efficiency as the use of a multi-dimensional set of performance measures for planning and management of a business. According to Shahu et al. (2012), project management efficiency measurement systems are considered to be important for evaluating the accomplishments of firm goals, constructing strategies for development, making decisions for investments and compensating managers. Verschuren et al. (2010) advocates that measures for project success should also include

project psychosocial outcomes - the satisfaction of interpersonal relations with project team members.

Empirical Review

Stakeholder Involvement

A study by Oino, Towett, Kirui and Luvega (2015) on 'The Dilemma on Sustainability of Community Based Projects in Kenya', provided a conceptual explanation of factors that influence sustainability of projects in Kenya, especially in the very needy communities where such projects are the only window of hope. The study concluded that lack of stakeholder ownership and commitment leads to project failure. Additionally, aid support from development agencies often do not fully understand and consider socio-economic, cultural, and political factors influencing the project design, planning and implementation. As well, very limited follow-up support during implementation is tendered by these development agencies. Therefore, there is need for inclusive and viable community driven approaches to project sustainability which can be achieved through participation and involvement of all stakeholders.

Top Management Support

According to Kumar (2002), it is also vital that project managers also convey their messages by means of organization-oriented concepts to project sponsors. He underlines some more considerations from the side of top management among which are: recognition of time spent on project planning, responsibility in proper resource allocation (as portfolio managers) and not merely depending on project management methodologies instead of people's creativity and resourcefulness.

One of the most critical factors for the successful completion of projects is top management support. The support is usually strongest if there is a project champion and this champion is from the top management (Hayfield, 2006). He observed that the

project champion helps project managers understand and achieve the project objectives which are specified by the client and/or top management. As noted by (Slevin, 2004), management support for projects, or indeed for any implementation, has long been considered of great importance in distinguishing between their ultimate success or failure. Project management is not only dependent on top management for authority, direction, and support, but as ultimately the conduit for implementing top management's plans, or goals, for the organization (Patanakul, 2010).

Resources Allocation

Jod Ray (2004) established that a project is a complex non-routine, one lifetime effort limited by time, budget and resources to meet customers' needs. Effective funds management in projects is determined by parameters which govern funds control such as auditing (Kaburu, 2012). According to Gasper, (2009), availability and adequacy of budgetary allocation of resources play a key role in the formulation and implementation of project management practices in any project. The financing process, such as raising and maintaining adequate funds for project activities, is clearly of critical importance to the progress of a project. Jack & Samuel (2006) state that adequate funding needs to be devoted to implementation of project management practices for its potential to be realized in a project. Insufficient financing is a major factor in poor maintenance which, in turn, is often cited as a reason for project failure (Jack & Samuel, 2006). Zarina, Zawawi and Khalid (2014) sought to establish the determining critical success factors of project management practice. The critical success factors (CSFs) are inputs to project management practice which can lead directly or indirectly to project success. It encompasses many elements, which have to be synchronized to ensure the project delivery on time. The purpose of this study is to identify the extent of the relationship between CSFs and project

performance. The research findings will be expected to assist the organization in evaluating the performance of project management. Finally, the conceptual framework was developed by identifying resource allocation as one of the variables for implementation of the project management practices for ultimate project success. Iman and Siew (2008) sought to find out the project management practices; the criteria for success or failure. The study established that some projects were completed successfully but some were not completed on time, over budget or being cancelled. One of the reasons of this project failure was lack of adequate resources.

Monitoring and Evaluation

Mulwa, (2008) established that there is need for monitoring and evaluation as follows; monitoring and evaluation provides project staff with a clear basis for decision making and enables project staff to strengthen the performance of their projects thus increasing the impact of project results to the beneficiaries. M&E allows the project manager to maintain control of the project by providing him with information on the project status at all times, it promotes greater transparency and accountability in terms of use of project resources, and information obtained through M&E can be used in future for project planning and development.

Zvoushe and Gideon (2013) examined the utilization of monitoring and evaluation systems (M&Es) by international development agencies, using the United Nations Development Programme (UNDP) in Zimbabwe as the case study. It does not have a standalone monitoring and evaluation department. The study used documentary analysis and found that, there is a low systematic use of evaluation findings from previous programme. On the other hand, the UNDP's evaluation approaches had a disturbing skew towards the quantitative. Such overly quantitative approaches carry the risk of sidelining the impact of contextual factors in development programmes and projects.

METHODOLOGY

A research design is the blue print for the collection, measurement, analysis of data and a plan to obtain answers to research questions (Coppers & Schindler, 2006). This study adopted a descriptive research design. The target population of the study was 96 project staff members at IFDC-Kenya. The unit of analysis was staff members in agricultural projects. The study adopted a census technique to collect primary data. The study employed questionnaires to collect the primary data. Closed and open ended pre-designed questionnaires were self-administered through research assistants. The study collected both qualitative and quantitative data. Content analysis was used to analyse qualitative data. Quantitative data obtained was analysed by the use of both descriptive and inferential statistics using Statistical Package for Social Sciences (SPSS). The study adopted the following linear regressions Model: $Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \epsilon$; whereby
 Y = Project Management Efficiency,
 X_1 = Stakeholder Involvement
 X_2 = Top Management support
 X_3 = Resources allocation
 X_4 = Monitoring and Evaluation
 B_0 = represents Constant Term;
 $\beta_1, \beta_2, \beta_3$ and β_4 are coefficients of determination, ϵ represents the error term (standard error).

RESULTS

Performance of Agricultural Projects in Kenya

The study sought to examine the drivers of project management efficiency in agricultural projects in Kenya; attributed to the influence of stakeholder involvement, top management support, resource allocation, monitoring and evaluation. The study was particularly interested in three key indicators, namely management in terms of time, budget and quality, with all the three studied over a 5-year period, running from 2013 to 2017.

Findings in Table 1 revealed improved project management efficiency in agricultural projects across the 5-year period running from the year 2013 to 2017. Finish within time recorded positive improvement with a majority affirming to less than 10% in 2013 (42.3%) and 2014 (37.7%), to 10% in 2015 (36.1%) then more than 10% in 2016 (41.1%) and 2017 (37.5%).

A similar trend was recorded in finish within budget/cost, improvement from less than 10% (44.1%) in 2013, to more than 10% in 2014 (36.4%),

2015 (40.4%) and 2016 (37.3%). Finish within scope further recorded positive improvement with a majority affirming to less than 10% in 2013 (37.9%) and 2014 (35.9%), to 10% in 2015 (35.9%) and 2016 (35.3%) then by more than 10% in 2017 (36.2%). It was deduced from the findings that key indicators in project management efficiency in agricultural projects had considerably improved. This was influenced by project management efficiency drivers comprising: stakeholder involvement, top management support, resource allocation and monitoring and evaluation.

Table 1: Project Management Efficiency in Agricultural Projects

Finish Within Time	2013	2014	2015	2016	2017
Increased by less than 10%	42.3	37.7	31.6	30.7	29.5
Increased by 10%	31.8	32.9	36.1	28.2	33
Increased by more than 10%	25.9	29.4	32.3	41.1	37.5
Finish Within Budget/Cost	2013	2014	2015	2016	2017
Increased by less than 10%	44.1	35.2	33.4	25.7	27.1
Increased by 10%	31.7	32.6	30.2	33.9	35.6
Increased by more than 10%	23.5	32.2	36.4	40.4	37.3
Finish Within Scope	2013	2014	2015	2016	2017
Increased by less than 10%	37.9	35.9	31.2	25.7	33.1
Increased by 10%	36.2	31.3	35.9	35.3	30.7
Increased by more than 10%	25.9	32.8	32.9	39	36.2

Stakeholder Involvement

The first objective of the study was to establish the influence of stakeholder involvement on project management efficiency in agricultural projects in Kenya. Respondents were thus asked to indicate the extent to which they agreed with various statements relating to stakeholder involvement and its influence on project management efficiency in agricultural projects in Kenya. Responses were given on a five-point scale where: 1= Very small extent; 2= Small extent 3= Moderate extent; 4 = Great extent; 5= Very great extent. The scores of 'Very small extent' and 'Small extent' were taken to represent a statement not agreed upon, equivalent to mean score of 0 to 2.5. The score of 'Moderate extent' has been taken to represent a statement agreed upon moderately, equivalent to a mean score of 2.6 to 3.4. The score of

'Great extent' and 'Very great extent' have been taken to represent a statement great extent upon equivalent to a mean score of 3.5 to 5.0.

The study findings in Table 2, with a grand mean of 2.876 majority of the respondents indicated to a moderate extent that they the project internal and external stakeholders were identified at the initial stages to enhance project costs, quality and time (3.335); Stakeholders conduct a needs analysis by identifying the needs and prioritizing them as well as identify the root causes of the problem (3.432); The project stakeholders were involved during the planning stage to ensure the project meets the planned budget , time and scope (3.212); Stakeholders were involved in the development of project plan to attain the desired project outcomes at the planning stage (3.008); The project management did stakeholder engagement and consultation to

avoid problems and opposition to ensure the project meets the planned budget , time and scope (2.876) and stakeholder consultation and engagement is carried out to reduce the project costs as the stakeholders views are reflected in the project initial stages (2.567). The study findings imply that stakeholder involvement influence project

management efficiency in agricultural projects in Kenya.

The study results conformed to the results by Ruwa (2016) who stated that undertaking stakeholder analysis is paramount to identify both internal and external stakeholders. Key stakeholders are usually easy to identify (PMI, 2013).

Table 2: Stakeholder Involvement Descriptive Statistics

Statement	Mean	Std. Dev.
The project internal and external stakeholders are identified at the initial stages to enhance project costs, quality and time	3.335	1.834
Stakeholders conduct a needs analysis by identifying the needs and prioritizing them as well as identify the root causes of the problem	3.432	1.567
The project stakeholders are involved during the planning stage to ensure the project meets the planned budget , time and scope	3.212	1.237
Stakeholders are involved in the development of project plan to attain the desired project outcomes at the planning stage	3.008	1.098
The project management does stakeholder engagement and consultation to avoid problems and opposition to ensure the project meets the planned budget , time and scope	2.876	1.653
Stakeholder consultation and engagement is carried out to reduce the project costs as the stakeholders views are reflected in the project initial stages	2.567	1.324
Average mean	2.876	

Top Management Support

The second objective of the study was to establish the influence of top management support on project management efficiency in agricultural projects in Kenya. Respondents were thus asked to indicate the extent to which they agreed with various statements relating to top management support and its influence on project management efficiency in agricultural projects in Kenya. The study findings in Table 3, with a grand mean of 2.889 majority of the respondents indicated to a moderate extent that the top management had ensured that there was adequate communication channels to support project team activities (3.212); The top management team motivated the project team by providing promotions, and remunerations(3.321); The project team

delegated the responsibilities to the overall team and individual teams(2.908); There was coordination of project activities and project team adheres to the rules, procedures and standards (2.767); The top management team was responsible for the periodic reviews of the project activities (2.778) The top management provided clearly defined decisions channels and facilitate interface with support departments (3.123). The top management had ensured that there are adequate communication channels to support project team activities (2.987). The study findings inferred that top management support influence project management efficiency in agricultural projects in Kenya.

According to Hernmano and Martin-Cruz (2016) the degree of management support for a project will lead to significant variations in the clients' degree of

ultimate acceptance or resistance to that project or product.

Table 3: Top Management Support Descriptive Statistics

Statements	Mean	Std. Dev.
The top management has ensured that there is adequate communication channels to support project team activities	3.212	1.842
The top management team motivates the project team by providing promotions, and remunerations	3.321	1.351
The project team delegates the responsibilities to the overall team and individual teams	2.908	1.423
There is coordination of project activities and project team adheres to the rules, procedures and standards	2.767	1.351
The top management team is responsible for the periodic reviews of the project activities	2.778	1.434
The top management provides clearly defined decisions channels and facilitate interface with support departments	3.123	1.324
The top management has ensured that there is adequate communication channels to support project team activities	2.987	1.221
Average mean	2.889	

Resource Allocation

The third objective of the study was to establish the influence of resource allocation on project management efficiency in agricultural projects in Kenya. Respondents were thus asked to indicate the extent to which they agreed with various statements relating to resource allocation and its influence on project management efficiency in agricultural projects in Kenya. The study findings in Table 4, with a grand mean of 3.009; majority of the respondents indicated to a moderate extent that there was resource planning (equipment, staffing and funds) for the implementation of the project activities (3.321); The project managers identified the quantities of the needed resources and this was directly linked to the expected cost of the project work (3.234); The project managers ensured the quantities and the schedule of the resources was directly linked to the budget(3.908); The project management team did the realistic planning of the project funds (3.345); There

was a professional and transparent approach to the funds allocation to ensure funds were always available when required to implement project activities (3.008). Project staffing was based on the knowledge and skills of the individual teams (3.223). Allocation of the project equipment’s was based on the work, knowledge of the equipment’s assigned, roles and responsibilities (3.212). The study findings inferred that resource allocation influenced project management efficiency in agricultural projects in Kenya.

The study results were in tandem with the findings by Muasu and Kirui (2016) established that resource allocation in projects means that any meaningful project success to be realized, resources must be availed. These resources include finances, human capital resource, motor vehicles, computers, managerial resources and time. The effects of these resources on project management efficiency have been extensively studied with diverse results (Ghazala & Vijayendra, 2011).

Table 4: Resource Allocation Descriptive Statistics

Statements	Mean	Std. Dev.
There is resource planning(equipment, staffing and funds) for the implementation of the project activities	3.321	1.236
The project managers identify the quantities of the needed resources and this is directly linked to the expected cost of the project work	3.234	1.212
The project managers ensure the quantities and the schedule of the resources is directly linked to the budget	3.908	1.123
The project management team does the realistic planning of the project funds	3.345	1.211
There is a professional and transparent approach to the funds allocation to ensure funds are always available when required to implement project activities	3.008	1.532
Project staffing is based on the knowledge and skills of the individual teams	3.223	1.118
Allocation of the project equipment's is based on the work, knowledge of the equipment's assigned, roles and responsibilities	3.212	1.098
Average mean	3.009	

Monitoring & Evaluation

The fourth objective of the study was to establish the influence of monitoring and evaluation on project management efficiency in agricultural projects in Kenya. Respondents were thus asked to indicate the extent to which they agreed with various statements relating to monitoring and evaluation and its influence on project management efficiency in agricultural projects in Kenya. The study findings in Table 5, with a grand mean of 2.672; majority of the respondents indicated to a moderate extent that the project management had put in place the control systems to ensure the project stands in respect to the plan (2.998); The control system helped to initiate the corrective measures if there was significant deviation (2.879); The project used tools such as critical path methodologies, Gantt charts and other computer-based techniques (3.112); The project progress reports were used to document the status of the project according to the plan (2.765); The project progress reports were used to reveal problems to the appropriate stakeholders and assist in corrective decision making (3.213). External consultants were

hired to undertake end-of-project evaluation (3.008). Changes in project scope, time and budget were approved through a rigorous process (2.687). Actual project results normally vary from the planned results (2.564). The project progress reports acted as reference material for planning of subsequent projects and provide information for the evaluators (2.598).The study findings inferred that monitoring and evaluation influenced project management efficiency in agricultural projects in Kenya. The study findings were in consistent with the findings by Ochieng and Ruth (2016) established that there was need for monitoring and evaluation as follows; monitoring and evaluation provides project staff with a clear basis for decision making, enables project staff to strengthen the performance of their projects thus increasing the impact of project results to the beneficiaries, M&E provides the project manager to maintain control of the project by providing him with information on the project status at all times, it promotes greater transparency and accountability in terms of use of project resources, and information obtained through M&E can be used in future for project planning and development.

Table 5: Monitoring & Evaluation Descriptive Statistics

Statements	Mean	Std. Dev.
The project management has put in place the control systems to ensure the project stands in respect to the plan	2.998	1.372
The control system helps to initiate the corrective measures if there is significant deviation	2.879	1.723
The project uses tools such as critical path methodologies, Gantt charts and other computer-based techniques	3.112	1.326
The project progress reports are used to document the status of the project according to the plan	2.765	1.637
The project progress reports are used to reveal problems to the appropriate stakeholders and assist in corrective decision making	3.213	1.326
External consultants are hired to undertake end-of-project evaluations	3.008	1.325
Changes in project scope, time and budget are approved through a rigorous process	2.687	1.421
Actual project results normally vary from the planned results	2.564	1.432
The project progress reports act as reference material for planning of subsequent projects and provide information for the evaluators	2.598	1.243
Average mean	3.009	

Multiple Regression Analysis Model

According to the model summary Table 6, the coefficient of determination (R^2) was used to measure the regression model's ability to explain the variation of the independent variables. R was the correlation coefficient which showed the relationship between the independent variables and project management efficiency in agricultural projects. It was notable that there existed strong positive relationship between the independent variables and project management efficiency in agricultural projects as shown by R value (0.849). The data showed that the high R squared value of 0.720. It showed that the independent variables in the study were able to explain 72.00% variation in the project management efficiency in agricultural projects while the remaining 28.00% is explained by the variables or other aspects outside the model.

Analysis of Variance (ANOVA)

F-test was done to test the effect of independent variables on the project management efficiency in agricultural projects simultaneously. F-statistic test basically showed whether all the independent variables included in the model jointly influence the project management efficiency in agricultural projects. Based on the study results of the ANOVA Test or F-test, obtained F-count (calculated) value was 14.321. This was greater than the F-critical (table) value (2.4472) with significance of 0.002. Since the significance level of $0.002 < 0.05$ we concluded that the set of independent variables influenced the project management efficiency in agricultural projects and this shows that the overall model was significant.

Regression Coefficients

From the study findings on the regression equation established, taking all factors into account (independent variables), constant at zero project management efficiency in agricultural projects was 16.830. The data findings analyzed also showed that taking all other independent variables at zero, a unit

increase in stakeholder involvement led to a 0.964 increase in project management efficiency in agricultural projects; a unit increase in top management support led to a 0.866 increase in project management efficiency in agricultural projects, a unit increase in resource allocation led to 0.843 increase in project management efficiency in agricultural projects and a unit increase in monitoring and evaluation led to 0.826 increase in project management efficiency in agricultural projects. This inferred that stakeholder involvement contributed most to project management efficiency in agricultural projects. With the aid of model $Y = \alpha + \beta_1X_1 + \beta_2X_2 + \beta_3X_3 + \beta_4X_4 + \epsilon$; Y = Dependent variable (project

management efficiency in agricultural projects); α = Constant (The intercept of the model), β = Coefficient of the X variables (independent variables); X_1 = Stakeholder involvement; X_2 = Top Management Support; X_3 = Resource Allocation; X_4 = Monitoring & Evaluation; ϵ = is the error term. Therefore, the general form of the equation was to predict project management efficiency in agricultural projects from X_1 = Stakeholder involvement; X_2 = Top Management Support; X_3 = Resource Allocation; X_4 = Monitoring & Evaluation is: $(Y = \beta_0 + \beta_1X_1 + \beta_2X_2 + \beta_3X_3 + \beta_4X_4 + \epsilon)$ becomes: $Y = 16.830 + 0.964X_1 + 0.866X_2 + 0.843X_3 + 0.826X_4$.

Table 6: Model Summary

Model	R	R ²	Adjusted R ²	Std. Error of the Estimate
1	.849	.720	.698	.023

ANOVA

Model	Sum of Squares	d.f.	Mean Square	F	Sig.
Regression	18.675	4	4.6687	14.321	.002
Residual	21.190	65	.3260		
Total	39.865	69			

Coefficient Results

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	β	Std. Error	β		
1 (Constant)	16.830	4.870		3.456	.000
X ₁ -SI	.964	.174	.725	5.543	.000
X ₂ -TMS	.866	.190	.705	4.560	.002
X ₃ -RA	.843	.204	.685	4.132	.003
X ₄ -M & E	.826	.213	.669	3.879	.005

a. Dependent Variable: Performance

CONCLUSION

The study concluded that stakeholder involvement influence project management efficiency in agricultural projects in Kenya. The regression coefficients of the study showed that stakeholder involvement had a significant positive influence on project management efficiency in agricultural projects in Kenya. This implies that increasing levels of stakeholder involvement would increase the levels of

project management efficiency in agricultural projects in Kenya.

The study concluded that top management support influenced project management efficiency in agricultural projects in Kenya. The regression coefficients of the study showed that top management support had a significant positive influence on project management efficiency in agricultural projects in Kenya. This implied that increasing levels of top management support would

increase the levels of project management efficiency in agricultural projects in Kenya.

The study concluded that resource allocation influenced project management efficiency in agricultural projects in Kenya. The regression coefficients of the study showed that resource allocation had a significant positive influence on project management efficiency in agricultural projects in Kenya. This implied that increasing levels of resource allocation would increase the levels of project management efficiency in agricultural projects in Kenya.

Finally, the study concluded that monitoring and evaluation influenced project management efficiency in agricultural projects in Kenya. The regression coefficients of the study showed that monitoring and evaluation had a significant positive influence on project management efficiency in agricultural projects in Kenya. This implies that increasing levels of monitoring and evaluation would increase the levels of project management efficiency in agricultural projects in Kenya.

Recommendations of the Study

The study recommended that there was need for stakeholders to conduct a needs analysis by identifying the needs and prioritizing them; as well as identify the root causes of the problem. Stakeholders should be involved in the development of project plans and there should be stakeholder engagement and consultation to avoid problems and opposition, thus ensuring the project meets the planned budget, time and scope.

The study recommended that that the top management should ensure that there are adequate communication channels to support project team activities. The top management team should motivate the project team; delegate the responsibilities to the overall team and individual teams. There should be adequate coordination of

project activities and project team adheres to the rules, procedures and standards.

The study recommended for adequate financing mechanisms in the project to enhance timely completion of the project and reduction of cost overruns. The financial management of the capital invested in the project should be meant for the delivery of a quality project. There is need for transparency and accountability on the management of the project funds and other available project resources. There should be resource planning (equipment, staffing and funds) for the implementation of the project activities.

The study recommended for the effective monitoring and evaluation to enhance project management efficiency. There should be adequate M & E plan for continuous monitoring of project activities to enhance efficiency. The roles and responsibilities of monitoring and evaluation personnel should be specified at the start of the project. The monitoring resources should be devoted to develop needed data and evidence-based evaluations in the projects in the county to enhance their management efficiency. There should be a good M & E system in place to ensure it raises timely feedback of the progress of the projects in the county.

Areas for Further Research

A review of literature indicated that there is limited research on the drivers of project management efficiency in agricultural projects in the Kenyan context. Thus, the findings of this study served as a basis for future studies on project management efficiency in agricultural projects in the east African nation. The drivers of performance of project management efficiency in agricultural projects in Kenya, had not been widely studied which presents gaps in African and Kenyan contexts. A comparative study should be carried out to compare whether the findings also apply for other projects in different

regions in order to validate whether the findings can be generalized to Kenya.

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