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PROJECTS IN NON- GOVERNMENTAL ORGANIZATIONS IN NAIROBI, KENYA**

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**ABSTRACT**

*This study was designed to establish the influence of agile project management methods in the implementation of ICT agile projects in non-government organizations and private firms in Nairobi County, Kenya. This was carried out by reviewing four variables namely; stakeholder involvement and project team. The study adopted a descriptive research design and the target population was 72 ICT agile related projects implemented by the NGOs and private firms in Nairobi County. The study applied a census technique to select all the identified project managers of the agile projects manager as the study respondents. Questionnaires were used as the primary data collection instrument. The secondary data was obtained from published documents. The data was analyzed with help of SPSS version 24 and Excel. The study was a milestone for further research in the field of implementation of ICT agile projects in Africa and particularly in Kenya. The findings demonstrated the important factors to implementation of ICT agile projects to include; stakeholder participation and project team. The current study should therefore be expanded further in future in order to determine the effect of project legal framework on implementation of ICT agile projects. Existing literature indicated that as a future avenue of research, there was need to undertake similar research in other organizations in Kenya and other countries in order to establish whether the explored factors can be generalized to affect implementation of ICT agile projects.*

**Keywords:** Project Team, Stakeholder Participation, Implementation of ICT agile Projects, Non-governmental Organizations in Kenya

## INTRODUCTION

For decades, organizations have been changing from a hierarchical approach to project management to being more collaborative as knowledge work has grown in importance. In the center of increased globalization is the need for project managers to have flexibility in a project system in order to be able to adjust constantly to emerging challenges and opportunities (Fernandez, 2016). According to Massimo Long (2014) argued that in the world of construction projects, cost and time management usually have a greater influence than scope management despite how big they are. Construction projects usually suffer from cost and time overruns, however, analyzing their root causes, we discover they are issues in the overall value management of the final project deliverables; it is mostly taken by time and cost management, as these are the constraints that ultimately influence the main decisions about the management of a construction project.

Agile project management focuses on continuous improvement, scope flexibility, team input, and delivering essential quality products. In traditional waterfall project management, the Project Manager is burdened with balancing project scope, cost, quality, personnel, reporting, risk, and adapting as requirements change (Portny 2013) Due to the particularly volatile and unpredictable nature of ICT systems agile development projects, private organizations are expected to be more proactive and dynamic (Livari & Livari, 2011), and ICT agile are expected to be more resilient and robust. However, traditional ICT agile development projects de approaches are criticized, for being non-incremental (McMahon, 2004), and for being inflexible and unable to adjust to the system development process which has a high propensity for change (Nerur, Mahapatra, & Mangalaraj, 2005). ICT agile projects approaches were thus proposed to mitigate this situation of concern. Developers and

managers often become frustrated with the integration of the agile approaches into traditional systems development organizations (Boehm & Turner, 2005).

According to Lindvall et al. (2002), the three most important factors that lead to successful adoption of agile ICT projects approach are culture, people, and communication. Culture is central to successful agile adoption, and an organization cannot be agile if the culture does not support it (Lindvall, et al., 2002). Competent people or team members are essential to the successful use of agile methods. Developers, for instance, must be given the freedom to make decisions and should not be doubted and second guessed all the time (Lindvall, et al., 2002). An agile project environment should also facilitate rapid communication among project team members (Lindvall, et al., 2002).

According to Boehm and Turner (2004), globally the organizations issues contain some of the more important factors that impact project success. There is, for instance, substantial risk associated with an unsuitable customer representative on an agile team. They go onto assert that customer representatives should be “Collaborative, Representative, Authorized, Committed, and Knowledgeable”. This is referred to as CRACK. In his survey, Agile Adoption Strategies, Scott Ambler mentions that the environment and tools available should support agile adoption and practices of the ICT projects (Ambler, 2011).

The State of Agile Survey that Version One has been conducting annually since 2007, has recently asked a few questions related to large scale as well, e.g. on scaling methods used and tips for success with scaling agile projects. According to the latest survey (VersionOne, Inc, 2016), 62% of the almost 4000 respondents had more than a hundred people in their software organization and 43% of all the respondents worked in development organizations where more than half

of the teams were agile. Of course, the sample of this study is limited to a selected subset of companies and countries (of the almost 4000 respondents to the latest survey 65% were from North America and 26% from Europe). However, this indicates that there seem to exist a large number of companies that have taken or are taking agile into use in large-scale settings in the projects (VersionOne, Inc, 2016).

According to Oshikoya and Hussain, research, Information technology does not only determine the market share and profitability of individual companies in tomorrow's global economy, but it also has a huge impact on future generations of workers and on a country's economic prospects. Countries that invest in and adopt information technology quickly will move ahead and those that fail to rapidly adopt information technology will be left behind. The views on the possible impact of the information revolution on African countries can be grouped in two opposing schools of thought.

Non-governmental organizations have not been short of strategies to effectively implement ICT agile projects but have fallen short of project financing plan strategies (Alexander, 2005). It is estimated that 70% of chief executive officers fail due to bad project financing strategies (Charan & Colvin, 1999). (Kauffman, 2005) concluded that success of project financing strategies has been 10 to 30%. Researchers note that organizations fail to implement up to 70% of their strategic initiatives (Miller, 2002).

The NGO sector in Kenya has made enormous contributions to the development process. NGOs are in all development sectors of the economy providing basic services that include education, economic empowerment, employment, environment & natural resource conservation, agriculture, health, credit facilities, technical co-operation, training and awareness. Kameri-Mbote (2002) reported that NGOs agenda and existence

has been multifaceted and the following specific societal changes have spurred the formation, growth and development of NGOs; worldwide economic recessions, emergence of new diseases, recurrence of armed conflict, environmental degradation, climate change and dwindling job opportunities due to population explosion. Jillo and Kisinga (2008) agreed that NGOs have experienced increased economic importance in Kenya as providers of health, educational, social and environmental services. In addition Fowler (1997) agrees that NGOs have a lot of potential that had been exploited and unexploited. They are seen as better able to enable the people to produce their own development than the state.

### **Statement of the Problem**

In spite of the growing popularity of ICT Agile development projects in many organizations in Kenya (Agile Manifesto, 2015) the rate at which ICT software projects are failing at the implementation stage is still alarming. According to the Standish 2016 Chaos Report (Standish, 2016), the average success rate is of all IT projects in the non-governmental organizations is 32%, 44% were challenged and the failure rate is 24%. The ICT agile project success rate has decreased from previous years with only 32% being successful, whereby these were delivered on time, to budget and with all required functionalities. 44% of the projects were challenged which means that either they were delivered late, over budget, and/or with less functionalities that were initially intended. The remaining 24% of ICT projects failed and had to be cancelled prior to completion and were never used.

Furthermore, according to Scott W. Ambler (2010a), the success rates for agile projects are 60% are successful, 28% are challenged, and 12% are failures. The success rate for Agile projects in many non-governmental organizations is 83% for small teams (less than eleven people), 70% for medium-sized teams (between eleven and

twenty-five people), and 55% for large teams (more than twenty-five people). Based from these figures it is clear that ICT agile team size, project management skills, project planning and monitoring and evaluation has a direct incidence on the success rate of the projects.

According to the statistics derived from the ICT Authority Kenya (2015), it is adept to reiterate that the non-government funded ICT agile projects in Kenya contributes to 47% of the projects failed at the implementation stage in the year 2015. The challenge of demand for quality service and upcoming reforms for most of the ICT agile projects has realized the need for quality service delivery and efficiency (World Bank, 2014). According to Ahmed et al., (2012), the agile projects are bound to fail due to slow rate in completion. This according to UNCHS, (2006), can result to losses of over 19.82%. While several studies (Musa, 2010; Karimi, 2012; Tulakhaba 2008, Mwandali, 2006) have been done focusing on different aspects of project completions and further appreciating the crisis in every ICT agile project in terms of completion, all empirical evidences were in short of the role of the determinants of ICT agile projects implementation. It was on this premise the study sought to establish the determinants of implementation of ICT agile projects in Non-governmental organizations in Nairobi, Kenya.

### **Objectives of the Study**

The purpose of this study was to establish the determinants of implementation of ICT agile projects in Non-governmental organizations in Nairobi, Kenya. The specific objectives were:-

- To determine the influence of project team on implementation of ICT agile projects in Non-governmental organizations in Nairobi, Kenya.
- To assess the influence of stakeholder participation on implementation of ICT agile projects in Non-governmental organizations in Nairobi, Kenya.

## **LITERATURE REVIEW**

### **Theoretical Review**

#### **Stewardship Theory**

In stewardship theory, the top management of the organizations is regarded as the stewards of the projects assets and liabilities and is expected to act in the best interest of the stakeholders (Mallin, 2007). He further observes that the stewards must take fiduciary position. Stewardship theory relates to the board's task of providing support and advice to management (Davis, 1993). Abdulla and Valentine (2009), note that stewards are organizations managers and leaders working for the interest of shareholders. The stewards protect and make profits for shareholders and are satisfied and motivated when organizational success is attained. The theory emphasizes that effective control held by professional managers empowers them to maximize firm performance and corporate profits. The theory is applicable in the management of donor funded food security projects. The project managers and committee leaders elected to manage the water pans play the managers role on behalf of the members (Tas,2008).Acquiring the project management skills is helpful to provide knowledge and ability that will enhance sustainability of these projects. In this study, since organizations and governments develop policies to guide the development of a given region for the projects to be implemented, applying this theory in study presupposes flexibility on the part of an organization to come with sound policies to enhance sustainability of the projects.

#### **Stakeholder Theory**

Freeman (2004), identifies and models the groups which are stakeholders of a corporation, and both describes and recommends methods by which management can give due regard to the interests of those groups. Agle et al (2008) argue that the theory has multiple distinct aspects that are mutually supportive: descriptive, instrumental,



and normative. The descriptive approach is used in research to describe and explain the characteristics and behaviors of firms, including how companies are managed, how the board of directors considers corporate constituencies, the way managers think about managing, and the nature of the firm itself in the implementation of projects. The central idea is that an organization's success is dependent on how well it manages the relationships with key stakeholders such as customers, employees, suppliers, communities, financiers, and others that can affect the realization of its purpose (Freeman & Phillips, 2002). Patton (2008) emphasizes that the stakeholder models entails all people with legitimate interest to participate in an enterprise do so to gain benefits. Michell et al (2008) state that the exercise of stakeholder power is triggered by conditions that are manifest in the other two attributes of the relationship i.e. legitimacy and urgency. Power gains importance when it is legitimate and exercised through a sense of urgency. Highly important and powerful stakeholders are located where power, legitimacy and urgency intersect (Freeman & Phillips, 2002). The overall purpose of stakeholder theory is to enable the managers to understand stakeholders and strategically manage them (Patton, 2008).

### Conceptual Framework

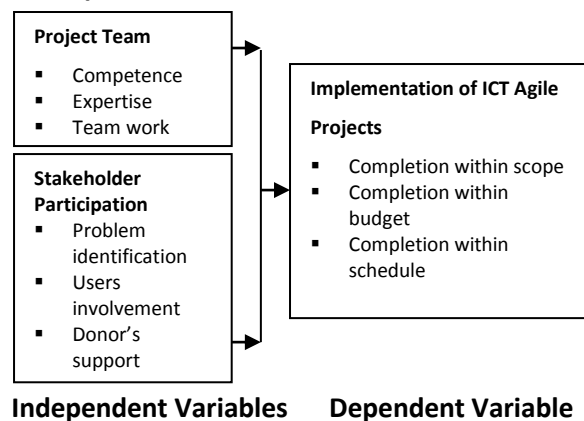


Figure 1: Conceptual Framework

### Project Team

Vijayarathy and Turk (2008) indicate that some of the factors that lead to agile project failure include lack of training and peer support, ignorance of agile approaches, lack of facilities for pair programming, individuals' resistance, and relying only on economic evaluation criteria. Another concern raised is managerial apathy and organizational resistance to change (Vijayarathy & Turk, 2008). Similarly to success factors, Chow and Cao (2008) discuss failure factors in four dimensions, namely; organizational, people, process, and technical. Chow & Cao (2008), team members with high competence and expertise, team members with great motivation, and competent team members (Skills). Chow & Cao (2008) argue that lack of the necessary skill set, lack of team work, and resistance from groups or individuals are failure factors in delivering agile projects. Vijayarathy and Turk (2008) offer lack of peer support and individuals' resistance to agile as failure factors.

### Stakeholder Participation

The stakeholder approach is described as a powerful means of understanding the firm in its environment (Nyandika, O. F & Ngugi, K. 2014) citing (Oakley, 2011). This approach is intended to broaden the management's vision of its roles and responsibilities beyond the profit maximization function (Mansuri & Rao, 2004). Patton (2008) elaborated that the stakeholder model entails that all persons or groups with legitimate interests participating in a project do so to obtain benefits and that there is no pre-set priority of one set of interests and benefits over another (Karl, 2007).

Boehm and Turner (2004) point out that the people issues contain some of the more important factors that impact project success. There is, for instance, substantial risk associated with an unsuitable customer representative on an agile team. They go on to assert that customer representatives should be Collaborative, Representative, Authorized, Committed, and

Knowledgeable. This is referred to as CRACK. In his survey, Agile Adoption Strategies, Scott Ambler mentions that the project environment and tools available should support agile adoption and practices (Ambler, 2011). He mentions that the project environment, the approaches followed, the tools and techniques employed in the environment and the culture should all be aligned to support the adoption and practice of agile.

Ambler (2011) contends that the availability of dedicated business expertise is critical to ensuring the successful adoption of agile approaches, and therefore the eventual success of the project. He goes on to stress that smaller teams succeed more often, and that project members should be assigned to one project at a time. Another factor that is pointed out is support from an executive level. This illustrates the importance of complete buy-in into the agile approach to projects. An important notion raised by Ambler (2011) is that of success. While traditional plan-driven approaches encourage success measurement against scope, budget and time, agile teams, in Ambler's view, encourage overall value added and creation. Success factors for agile projects have also been proposed by Chow and Cao (2008).

Ambler (2011) comments that smaller teams succeed more often in agile settings and project members should be dedicated to one project at a time. Lindvall et al. (2002) state that teams should be allowed to adapt workspace as required, and that they should be able to negotiate project deliverables. Chow & Cao (2008) contends that coherent, self-organizing teamwork, as well as teams honoring regular working schedules with no overtime for instance, succeed more often than not.

Ambler's (2011) claim that support from an executive level is a success factor in agile project delivery, while Chow & Cao (2008) discuss the benefits of a committed sponsor or manager in an agile project environment. Vijayasarathy and Turk

(2008) argue that managerial apathy towards agile is a sure way of project failure. Chow & Cao (2008) further mention a lack of executive sponsorship and management commitment as formulas to attract agile project failure.

### **Implementation of ICT Agile Projects**

According to Thomas et al., (2012) and Josephson and Lindstrom (2007) developed numerous parameters for measuring project implementation. The three completion measures categories form a basis for design completion indicators, which are the elements of completion within the ambit of each measure category. The successful completion of a project should meet the budget. Cost is one of the completion indicators used to measure completion of a project. There are four areas that are highly related to the project cost control which are the interim payments, variation orders, cost and prolongation claims and budget versus actual cost forecast. Project cost completion is used to show effectiveness of the project adheres to the budgeted cost.

According to Hatashi and Skitmore (2007), time refers to the duration for completing the project. It is scheduled to enable the construction to be used by a date determined by the client's future plans. Successful implementation of a project should also consider the element of quality. The quality of the project can be measured by determining numbers of defects and customer's complaints, number of non-conformance reports, work reject rates and sample rejection for the project. Ling (2008) also stated that the implementation of a project is multifaceted and may include unit of cost, refurbishment and delivery speeds and the level of client's satisfaction. Moreover, research conducted by Atkinson *et al.*, (2007) reveals that clients will not be satisfied if the end product (project) fails to meet their price, quality, time frame, functionality and delivery standards.

## Empirical Review

Tanner and Ulrich (2014) did a study on the Factors leading to the Success and Failure of Agile Projects Implemented. This qualitative study was undertaken to investigate the factors that result in agile project success and failure. The study particularly focused on software projects where agile methods were newly adopted, implying a transition from the Waterfall to a more light-weight and iterative approach. Kihoro and Waiganjo (2015) did a study on the Factors affecting performance of projects in the construction industry in Kenya. This study therefore sought to carry out a survey to investigate the factors influencing performance of construction projects in Kenya with a focus on gated communities in Nairobi County. This study focused on three aspects of performance namely timely completion, cost management, as well as quality. Ramadhan & Muigai (2016) did a study on the Factors Influencing Implementation of ICT projects in Kenya Airports Authority. The research sought to achieve four objectives with the key variables examined being the dependent variable implementation of ICT projects in KAA and independent variables of organizational, technological, scope management and financial management factors. Monitoring and evaluation is a key component of project management and is one of the roles done by the project management office or the project manager. Citing (Thomson & Hoffman, 2003), (Kimani 2013) argued that evaluation should not be encouraged when a program is unstable, unpredictable and/or when it has not achieved a consistent routine as when those involved cannot agree about what the program is trying to achieve the funder and/or manager may refuse to include important and central issues in the evaluation. Hence complete involvement of all stakeholders is key in a project. Montgomery & Zint (2010), noted on First Tranche online blog (2012) that the success rate for projects with high levels of quality monitoring and evaluation (QME) was 93%, compared to a 3%

success rate for those with low QME levels. The authors noted that effective supervision was necessary for project success. For an effective M&E, it is important that actors are allowed to specify the success determinants as it provide points of unity for adjustments, identify best practices, and encourages improvement of resources and capacities use.

## RESEARCH METHODOLOGY

This study used descriptive survey design with mixed approaches. According to (Bazeley, 2009) a mixed method research is a systematic integration of quantitative method in a single study for purposes of obtaining a precise and deeper understanding of a phenomenon. The target population comprised of 72 ICT agile projects implemented by the Non-governmental organizations in Nairobi County, Kenya. The study used a census technique since the population of 72 was small and the study aimed to reach all the projects. The study would determine the data collection approach largely by identifying the type of information needed (Cooper & Schindler, 2003). The study used questionnaire as the data collection instrument structured to meet the objectives of the study. The data collected was quantitative. Questionnaires were coded and edited for completeness and consistency once received. Quantitative data was analyzed by employing descriptive statistics and inferential analysis using statistical package for social science (SPSS) version 24 and excel.

## FINDINGS AND DISCUSSIONS

A population of 72 was selected using census survey technique. A total of 72 questionnaires were distributed to various project managers of the projects in the study area. Out of the covered population, 60 were responsive representing a response rate of 83.33%. To measure the reliability of the gathered data Cronbach's alpha was applied. An alpha coefficient of 0.70 or higher indicates that the gathered data are reliable and are relatively high internal consistency and can be



generalized to reflect opinions of all respondents in the target population (Zinbarg 2005). The two variables were reliable as their reliability values exceeded the prescribed threshold of 0.7. The study sought to establish the gender distribution of the respondents. 40.00% were male, 37.14% were female and 22.86% of the respondents did not indicate their gender. The results indicated that the two genders were adequately represented in the study since there is none which was more than the two-thirds. In order to establish the age distribution of the respondents in the study, ages of the respondents who participated in this study were recorded. The findings showed that 53.85% of the respondents were aged between 18 to 35 years, 32.76% were more than 35 years old while 13.39% did not indicate their age. It was important to establish the education level held by the study respondents in order to ascertain if they were equipped with relevant knowledge and skills on determinants of implementation of ICT agile projects. Majority (70%) had college education level, 20% had university education level, 5% had post graduate education level, 3% had secondary education level and 2% had professional qualifications. These findings implied that most of the respondents were qualified to understand the nature of the study problem. The study determined the working experience held by the respondents in order to ascertain the extent to which their responses could be relied upon to make conclusions on the study problem using their working experience. From the findings, (60%) indicated to have had a working experience of 6-10 years, 20% had a working experience of less than 5 years, 15 % had a working experience of 11-15 years and 5% had a working experience of 16 years and above.

## Implementation of Agile Projects

The study sought to determine implementation of ICT agile projects with reference to NGOs in Nairobi, Kenya, attributed to the influence of project team and stakeholder participation. The study was particularly interested in three key indicators, namely completion within budget, schedule and scope, with all the three studied over a 5 year period, running from 2012 to 2016. Table 1 below presented the findings.

Findings in Table 1 revealed improved implementation of ICT agile projects across the 5 year period running from the year 2012 to 2016. Completion of projects within budget recorded positive growth with a majority affirming to less than 10% in 2012 (42.3%) and 2013 (37.7%), to 10% in 2014 (36.1%) then more than 10% in 2015 (41.1%) and 2016 (37.5%). A similar trend was recorded completion of projects within scope, growing from less than 10% (44.1%) in 2012, to more than 10% in 2013 (36.4%), 2014 (40.4%) and 2015 (37.3%). Completion of projects within schedule further recorded positive growth with a majority affirming to less than 10% in 2012 (37.9%) and 2013 (35.9%), to 10% in 2014 (35.9%) and 2015 (35.3%) then by more than 10% in 2016 (36.2%). It could be deduced from the findings that key implementation of ICT agile projects indicators had considerably improved as influenced by among other attributes, the influence of project team and stakeholder participation. Completion of projects in time, completion of projects within budget and completion of projects within scope had particularly improved by at least 10 percent across most of the projects pointing to the significance of project team and stakeholder participation in the implementations of ICT agile projects.

**Table 1: Implementation of Agile Projects**

<b>Completion within Budget</b>	<b>2012</b>	<b>2013</b>	<b>2014</b>	<b>2015</b>	<b>2016</b>
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
<b>Completion within Scope</b>	<b>2012</b>	<b>2013</b>	<b>2014</b>	<b>2015</b>	<b>2016</b>
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
<b>Completion within Scope</b>	<b>2012</b>	<b>2013</b>	<b>2014</b>	<b>2015</b>	<b>2016</b>
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

### Project Team

The first objective of the study was to establish the influence of project team on implementation of ICT agile projects in Kenya. Respondents were thus asked to indicate the extent to which they agreed with various statements relating to project team and its influence on implementation of ICT agile projects. 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' have been 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.

Table 2 below presented the findings. With a grand mean of 3.331, a majority of respondents

highly agreed to great extent with most statements posed as regards influence of project team on implementation of ICT agile projects. Majority particularly agreed highly that the team competency enhance efficiency of the procurement process (3.345); the team competency reduce delayed payment (3.987); the team competency facilitated decision making in the projects (3.542); the team competency enhanced transparency levels in the management of the projects (3.432); team cohesion reduce procurement cycle in your project (3.252); the team cohesion enhance contract scope changes in the project(3.987); the leadership encourages up front planning efforts (3.098); the leadership that encouraged up front planning efforts in your project (3.998); team commitment encouraged intrinsic motivation in the implementation of the projects; the team commitment which encouraged intrinsic motivation in the implementation of the projects (3.776).The study findings corroborated with the findings of Andawei (2014) and McLeod et al. (2012) who found out that project team commitment was one

of the most important factors for project implementation. Darrington & Howell (2010), emphasized that motivation schemes on teams should not be centered on monetary incentives because it destroys intrinsic motivation, which makes teams to be less productive. He proposed that intrinsic motivation should be encouraged so that parallel positioning of incentive structures with motivation can result in successful projects for the client and economic and psychological advantage to the contractor. Ochieng & Price

(2010) pointed out that a project manager needs to understand the individual desires of each team member. To achieve a project environment where the majority of the members involved are motivated about the project, project managers have to be sensitive to the needs and wants of the team members. Soham & Rajiv (2013) states that the management needs to be involved in the up-front planning efforts and effectiveness of communication, control system, management system and organizational culture.

**Table 2: Project Team**

Statements	Mean	Std. Dev
Does team competency enhance efficiency of the procurement process?	3.345	.456
How does team competency reduce delayed payment	3.987	.762
How does team competency facilitated decision making in your project	3.542	.112
How has team competency enhanced transparency levels in the management of the projects	3.432	.865
Does team cohesion reduce procurement cycle in your project?	3.252	.456
How does team cohesion enhance contract scope changes in your project?	3.987	.098
How does leadership encourage up front planning efforts?	3.098	.237
Do you have leadership that encourages up front planning efforts in your project?	3.776	.556
Do you have team commitment which encourages intrinsic motivation in the implementation of the projects?	3.120	.816
<b>Average mean</b>	<b>3.331</b>	

### Stakeholder Participation

The second objective of the study was to establish the influence of stakeholder participation on implementation of ICT agile projects in Kenya. Respondents were thus asked to indicate the extent to which they agreed with various statements relating to stakeholder participation and its influence on implementation of ICT agile projects. 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' have been 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 3, with a grand mean of 2.987 indicated that the respondents indicated to a moderate extent that they do have a user involvement to enhance engagement initiatives in the projects (3.211); there was user involvement

in mobilization of the resources for implementation of the project activities (2.550); the user involvement yielded sustainable projects (2.313); the user involvement enhanced transparency and accountability in the projects (3.654); the community involvement ownership encouraged ownership of the project activities (3.465); there were sustainable problem solutions from the problem identification in the projects ( 2.654) and there was user empowerment through

transfer of management skills to users for the implementation of the projects (1.876). The study findings corroborated with literature review by Okafor (2005) who observed that when users participate in their own projects include empowering communities improve efficiency, local participation yields better projects, better outcomes as well as greater transparency and accountability enhances implementation of the projects.

**Table 3: Stakeholder Participation**

<b>Statement</b>	<b>Mean</b>	<b>Std</b>
Do you have user involvement to enhance engagement initiatives in the projects?	3.211	.987
Is there donor involvement in mobilization of the resources for implementation of the project activities?	2.550	.765
Does user involvement yields expected implementation projects?	2.313	.453
Does user involvement enhance transparency and accountability in the projects?	3.654	.543
Does stakeholder involvement encourage ownership of the project activities?	3.465	.432
Are there implementation problem solutions from the problem identification in the projects?	2.654	.321
Is there user empowerment through transfer of management skills to users for the implementation of the projects?	1.876	.432
<b>Average mean</b>	<b>2.987</b>	

**CONCLUSION AND RECOMMENDATIONS**

The study findings indicated that majority of the respondents stated that user involvement enhanced engagement initiatives of the projects. This can be achieved through taking an active role in identifying their needs and prioritizing those needs, mobilizing internal and external resources and implementing activities towards achieving their objectives, self-reliance was stimulated thus reducing dependency on the outside agencies and improved efficiency and local participation yielded better projects. The user involvement decreased complaints on management issues in the projects as it encouraged greater transparency and accountability, enhanced service delivery, the goal

of participation was to give the user ownership, ability to express themselves, to learn from them, empower them through the transfer of skills, abilities and knowledge and produce implementation solutions since decisions made by a user are influenced by the user’s understanding of the issues involved. The study also established that problem identification enhanced engagement initiatives of the projects and decrease of complaints on management issues of the projects.

The study established that a majority of respondents highly agreed to great extent with most statements posed as regards influence of

project team on implementation of ICT agile projects. Majority particularly highly agreed that the team competency enhance efficiency of the procurement process and reduce delayed payment. The team competency facilitated decision making in the projects and enhanced transparency levels in the management of the projects. The project team cohesion reduces procurement cycle in your project and enhances contract scope changes in the project. The leadership encourage up front planning efforts and the team commitment encourages intrinsic motivation in the implementation of the projects.

### **Conclusions of the Study**

Based on the study findings, the study concludes that implementation of ICT agile projects was affected by stakeholder participation and project team being the major factors that mostly affected implementation of ICT agile projects in Kenya.

Stakeholder participation was the first important factors that affected implementation of ICT agile projects. The regression coefficients of the study showed that stakeholder participation had a significant influence on implementation of ICT agile projects. This implied that increasing levels of stakeholder participation by a unit would increase the levels of implementation of ICT agile projects. This showed that stakeholder participation had a positive influence on implementation of ICT agile projects.

Further, project team was the second important factor that affected implementation of ICT agile projects. The regression coefficients of the study showed that project team had a significant influence on implementation of ICT agile projects. This implied that increasing levels of project team by a unit would increase the levels of implementation of ICT agile projects. This showed that project team had a positive influence on implementation of ICT agile projects.

### **Recommendations**

The study recommended for effective stakeholder participation in the projects user involvement enhance engagement initiatives of the projects. This could be achieved through taking an active role in identifying their needs and prioritizing those needs, mobilizing internal and external resources and implementing activities towards achieving their objectives, self-reliance is stimulated thus reducing dependency on the outside agencies and improves efficiency and user participation yields better projects.

The study recommends for team leadership that encouraged upfront planning efforts. Further, there was need for the project team competency and commitment to be enhanced so as to increase efficiency of the procurement process and encourage intrinsic motivation in the implementation of projects. The project team competency facilitated decision making in the projects and enhance transparency levels in the implementation of the projects. The project team cohesion can also increase implementation of the project and enhance contract scope changes in the project.

### **Knowledge Gained for Policy and Practice**

The study contributes the body of knowledge by examining the determinants of implementation of ICT agile projects in NGOs in Kenya that is greatly affected by stakeholder participation and project team. The study contributes to the existing literature in the field of project management by elaborating exiting theories, models and empirical studies on implementation of ICT agile projects in Kenya. The study thus contributes to the existing knowledge in project management by reviewing theories and models that can be applied to improve implementation of ICT agile projects.

### **Suggestions for Further Studies**

The study is a milestone for further research in the field of implementation of ICT agile projects in Africa and particularly in Kenya. The findings



demonstrated the important factors to implementation of ICT agile projects to include stakeholder participation and project team. The current study should therefore be expanded further in future in order to determine the effect of project legal framework on implementation of

ICT agile projects. Existing literature indicates that as a future avenue of research, there is need to undertake similar research in other organizations in Kenya and other countries in order to establish whether the explored factors can be generalized to affect implementation of ICT agile projects.

## REFERENCES

- Adan, I. H. (2012). *Influence of stakeholders role on performance of constituencies development fund projects a case of Isiolo North Constituency, Kenya*. Available at: <http://researchkenya.or.ke/node/18866>
- Al-Kharashi, A. & Skitmore, M. (2009). Causes of delays in Saudi Arabian public sector construction projects. *Construction Management and Economics*, 27(1), 3-23.
- Ardity, D., Akan, T., & Gurdamar, S. (2009). Adherence to cost estimates in public projects: *International Journal of Project Management*.
- Babbie, E. (2009). *Survey research methods* (2nd Ed.). Belmont: Wodsworth.
- Barney, J. (1986). Strategic factor markets: Expectations, luck, and business strategy. *Management Science*, 32, 1231-1241.
- Battaineh R.K (2006) 'Causes of Delay in Large Building Construction Projects', *Journal of Management in Engineering*, Vol. 11, No. 2.
- Binder, (2008). User Satisfaction and Sustainability of Drinking Water Schemes in Rural Communities of Nepal.
- Bridget, S., and Lewin, C. (2005). *Research Methods in the Social Sciences*. London: Sage publications
- Bordens, K. S., and Abbott, B.B. (2008). *Research design methods: A process approaches* (7<sup>th</sup> ed.). New York, NY: McGraw-Hill.
- Burke, R. (2004). *Project Management Planning and Control Techniques*. 4th edition, New Delhi India: Pearson Education.
- Callahan, M. T., D. G. Quackenbush, and J. E. Rowings, (2006). "Construction Project scheduling". USA: McGraw-Hill.
- Chandran C. (2004). *Research Methods: A qualitative Approach with Illustrations from Christian Ministries*. Nairobi: Daystar University.

- Chan, M., & Kumaraswamy, M. (2007). A comparative study of causes of time overruns in Hong Kong construction projects. *International Journal of Project Management* 15(1), pp. 55-63.
- Chan, M., Scott, D. & Chan, L. (2004). Factors affecting the success of a construction project: *Journal of Construction Engineering and Management* 130 pp. 153.
- Conner, K.R. (1991). A historical comparison of resource-based theory and five schools of thought within the industrial organization economics: Do we have a new theory of the firm? *Journal of Management*, 17, 121-154.
- Cooper D R, Schindler PS (2005). *Business Research Methods*. (8th Ed.). Mc Graw-Hill, New Delhi, India.
- Creswell, J. W. (2003). *Research design: Quantitative, qualitative, and mixed methods approaches* (2nd Ed.). Thousand Oaks, CA: Sage.
- Creswell, J. W., (2002). *Educational research: Planning, conducting, and evaluating quantitative and qualitative approaches to research*. New Jersey: Merrill/Pearson Education.
- Cronbach, L. J. (1971). *Test validation*. In R. L. Thorndike (Ed.). *Educational Measurement* (2nd Ed.). Washington, D. C.: American Council on Education
- Damodaran, L. (2011). User involvement in the systems design process: a practical guide for users, *Behaviour & Information Technology*, 15(6), 363-377
- Departamento de Matemática e Informática (DMI), (2002). Estatísticas de Ingressos e Graduações do Curso de Informática Durante o Período 1987-2001, DMI, EMU, Maputo, Mozambique.
- Ektewan, M. & Ogunlana, S.O. (2006). Public hearings in Thailand's infrastructure projects: effective participations?, *Engineering, Construction and Architectural Management*, 13(4), 343 – 363
- Flyvbjerg, B. (2005), Policy and Planning of Large Infrastructure Project Problems, Causes, Cures. *World Bank Policy Research Working Paper 3781*, Cambridge University Press, Cambridge.
- Flyvbjerg, B., Holm, S., & Buhl, L. (2004). What Causes Cost Overrun in Transport Infrastructure Projects?: *Transport Reviews*, 24 (1), 3-18.
- Fudge, N. & Wolfe, C.D.A. (2008). Assessing the promise of user involvement in health service development: ethnographic study. *BMJ*, 336, 313
- Ghazala, M. & Vijayendra R. (2011) Evaluating Community Based and Community Driven Development: A critical review of the Evidence. *Working Paper, Development research Group, World Bank*.
- Goldratt, Eli M..(1984). *Essays on the Theory of Constraints*. [Great Barrington, MA]: North River Press. ISBN 0-88427-159-5.
- Hamel, G., & Prahalad, C.K. (1996). *Competing for the Future*. Boston: Harvard Business School Press.

- Kvaye, M., & Anderson, R. (2000). Continuous improvement: The ten essential criteria. *The International Journal of Quality & Reliability Management*, 16(5), 485.
- Kagiri, D., & Wainaina, G. (2009). Time and Cost Overruns in Power Projects in Kenya: A Case Study of Kenya Electricity Generating Company Limited, Nairobi. (2004). Solving Tough Problems: *An Open Way of Talking, Listening, and Creating New Realities*. Berrett-Koehler Publishers.
- Kaliba, C. Muya, M. & Mumba, K. (2009), Cost Escalation and Schedule Delaying Building Construction Projects in Zambia, *International Journal of Project Management*, Vol. 27, Issue 5, pp 522-531.
- Karimi, R.B. (2008), "Factors which are Critical in Project Cost Overruns: A Case Study of Ministry of Water Resources Projects", Unpublished MBA Thesis, University of Nairobi.
- Kog, C., & Loh, K. (2012). Critical Success Factors for Different Components of Construction Projects. *Journal of Construction Engineering and Management* 138(4), pp. 520-528.
- Koskela, Howell ., & Ballard, G. (2002). Should project management be based on theories of economics or production?: *Building Research and Information*, Vol. 34, No. 2
- Kothari, C. R. (2004). *Research methodology: Methods and techniques*. New Delhi: New Age International (P) Limited Publishers.
- Kuen, C.W., Zailani, S., & Fernando, Y. (2009). Critical factors influencing the project success amongst manufacturing companies in Malaysia. *African Journal of Business management*, 3(1), 16-27.
- Kumar, C. (2000). *Research Methods*. (2<sup>nd</sup> edn.). New York: Harper and Row.
- Lin-lin, X., Yang, Y. Hu, Y. & Chan, A.P.C. (2014). Understanding project stakeholders' perceptions of public participation in China's infrastructure and construction projects: Social effects, benefits, forms, and barriers", *Engineering, Construction and Architectural Management*, 21(2), 224 – 240
- Maina, B. M. (2013). *Influence of stakeholders' participation on the success of the economic stimulus programme: a case of education projects in Nakuru County, Kenya*. Retrieved from
- Maltz, A.C., Shenhar, A.J. & Reilly, R.R. (2003). Beyond the balanced scorecard: Refining the search for organizational success measures, *Long Range Planning*, Vol. 36, No. 2, pp.187-204.
- Malkat, M & Byung-Gyoo, K. (2012). *An Investigation on the Stakeholders of Construction Projects in Dubai and Adjacent Regions*. Available at: [www.ipedr.com/vol45/016-ICMTS2012-M00008.pdf](http://www.ipedr.com/vol45/016-ICMTS2012-M00008.pdf)
- Marchewka, J.T. (2006). *Information Technology Project Management: Providing Measurable Organizational Value*, 2nd ed., Wiley, New York, NY.
- McGrew, J.F., Bilotta, J.G. (2007) The effectiveness of risk management: measuring what did not happen, *Manage Decision*, 38(4) 293-300.

Mono, O.R. (2013). Determinants of successful delivery of housing construction Projects in the Ministry of Housing in Nairobi, Kenya. Retrieved from: <http://ir-library.ku.ac.ke/handle/123456789/6213>

Morris, G., & Hough, H. (2008). *The Anatomy of Major Projects: A Study of the Reality of Project Management*. Chichester; New York: Wiley, pp. 502-511.

Mugenda, O.M and Mugenda, A.G (2003) *Research Methods, Quantitative & Qualitative Approaches*. Acts Press: Nairobi

Müller, R., & Jugdev, K. (2012). Critical success factors in projects Pinto, Slevin, and Prescott – the elucidation of project success. *International Journal of Managing Projects In Business*, 5(4), 757-775.

Musa, G. H., (2009) "Determination of Factors Influencing Projects Delays in Water Projects in Kenya: The Case of Government Funded Projects", Unpublished MBA Thesis University Of Nairobi.

Mwandali, D., (2006) "Analysis of Major Factors that Affect Projects Management: A Case of Kenya Railways Projects", Unpublished MBA Thesis, University of Nairobi.

Nana Agyeman (2010), *Delays in building construction projects in Ghana*.

Nyandika Fred(2014); *Influence of stakeholders' participation on performance of road project at Kenya National Highways Authority* ; A Research Project Submitted in Partial fulfillment for the award of degree of master of science in project management of Jomo Kenyatta University of Agriculture and Technology.

National Tax Payers Association (2010), *Utilization of Government Revenue*: Government Printers, Nairobi

Negroponete ,N. (1998). *The Third Shall Be First*, Wired, January.

Neuman, W.L. (2006). *Social Research Methods: Qualitative and Quantitative Approaches*. Pearsons Education Inc. Boston. USA

Nunnally, J. C. (1978). *Psychometric theory* (2nd Ed.). New York: McGraw-Hill.

O'Brien, S., & Ibbs, C. (2005). The Paradox of using Tacit and Explicit Knowledge Strategies to face Dilemmas: *Management Decision*, Vol. 43 No. 1, pp. 102-112.

Olwale, A., & Sun, M. (2010). Cost and Time Control of Construction Projects: Inhibiting Factors and Mitigating Measures in Practice. *Construction Management and Economics* 28(5), pp. 509-526.

Olima,H.A. (2011). *The Dynamics and Implications of Sustaining Urban Spatial Segregation in Kenya: Experiences from Nairobi Metropolis*. Paper presented at the International Seminar on Segregation in the City Held at Lincoln Institute of Land Policy in Cambridge, MA, USA, July 25-28, 2001.

Onchoke, N. K. (2013). *Factors influencing performance of community development projects in Kenya: a case of Kisii Central District*. Available at: <http://ir-library.ku.ac.ke/handle/123456789/6205>

Ondieki, W. M. (2011). *Factors influencing stakeholders' participation in monitoring and evaluation of Local Authority transfer fund projects in Kisii municipality, Kenya*. Available at <http://erepository.uonbi.ac.ke:8080/handle/123456789/>

Onions, W. (2007). *A Knowledge Based Theory of Project Management*: McGraw-Hill, pp 61-72.

Ophiyandri, T., Amaratunga, D., Pathirage, C. & Keraminiyage, K. (2013). Critical success factors for community-based post-disaster housing reconstruction projects in the pre-construction stage in Indonesia, *International Journal of Disaster Resilience in the Built Environment*, 4(2), 236 – 24

Oshikoya W.T & Husaain N. ( ). *Information Technology and the Challenge of Economic Development in Africa*. Available at <https://www.afdb.org/fileadmin/uploads/afdb/Documents/.../00157606-FR-ERP-36.PDF>

Republic of Kenya. (2014). Kenya National Bureau of Statistics. *Economic Survey 2014*. Nairobi: Government Printer.

Rundquist, J. (2008) World Class or Good Enough: the Choice of partner when Outsourcing New Product Development in medium sized firms. *International Journal of Innovation and Technology Management* 5: 429-451.

Sambasivan M. and Yau W.S., (2007). Causes and effects of delays in Malaysian construction industry. *International Journal of Project Management* 25: pp. 517 -526.

Sauer, C. & Reich, H. (2007). What do we want from a Theory of Project Management?: *International Journal of Project Management*, A response to Rodney Turner”, Guest editorial, Vol.25, pp 1-2.

Saunders, M., Lewis, P., & Thornhill, A. (2007). *Research Methods for Business Students*. (4<sup>th</sup> edn.). Harlow: Financial Times Prentice Hall.

Schumpeter, J.A. (1950). *American Institutions and Economic Progress*. New York: Harper & Brothers.

Sekaran, U. (2003). *Research Methods for Business: A Skill Building Approach*. (4<sup>th</sup> edn.). USA: John Wiley & Sons Publishers.

Seboru, M. A. (2006). An investigation into factors causing delays in road construction projects in Kenya, unpublished MA Project, Faculty of Architecture, design and Development, University of Nairobi

Serdar S. D., (2009). The role of top management team's information technology (IT) infrastructure view on new product development: Conceptualizing IT infrastructure capability as a mediator. *European Journal of Innovation Management*, 12(3), 364 – 385

Tabish, S., & Jha, K. (2012). Success Traits for a Construction Project. *Journal of Construction Engineering & Management*, 138(10), 1131-1138.

Talukhaba, A.A, (2008). “Time and Cost Performance of Construction Projects”, Unpublished M.A. Thesis, University of Nairobi.



Turner, R. ( ). Towards a Theory of Project Management: The Nature of the Project: *International Journal of Project Management*, Vol 24, p.1-3.

Williams,T. (2008), "A review of inventory management research in major logistics journals: themes and future directions", *International Journal of Logistics Management*, Vol. 19 No.2, pp.212-32.

Yin, R. K., (2003), *Case Study Research: Design and Methods, (3<sup>rd</sup> edition)*. Sage Publications, London

Young, N. (2009). *Understanding the Research Process and Methods. An Introduction to Research Methods*. Las Vegas: Acts Press.

Zhang, Z.H. (2000). *Implementation of Total Quality Management: An Empirical Study of Chinese Manufacturing Firms*. Unpublished doctoral dissertation, University of Groningen, Groningen, Netherlands.

Zou, P. X.W., Zhang, G., and Wang, J. (2006). *Identifying key risks in construction projects: life cycle and stakeholder Perspectives*. [www.press.net/papers/Zou\\_risks-constru](http://www.press.net/papers/Zou_risks-constru). Accessed 4/9/2016.