



FACTORS AFFECTING THE PERFORMANCE OF ICT SOFTWARE PROJECT MANAGEMENT: CASE STUDY OF COMPULYNX LIMITED

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ABSTRACT

In the last few years, the project management discipline has matured through the publication of several standards best practices research articles and significant growth in its community of professional. From this, it may be concluded that today, the majority of projects are completed successfully. However, literature suggests that this is not the case, especially in the information and communication technology (ICT) environment. The objective of this study is to assess the factors contributing to poor performance of ICT Software project management. The study shall target the ICT Software development management team members (Project Managers, project Designers, developers, Testing team and integrators) depending on the project team structure for Compulynx Limited. The study adopted descriptive research design since the researcher sought to gather information, summarize, present and interpret it for the purpose of clarification. The study targeted 500 employees of Compulynx Limited in Nairobi. Questionnaires were used to collect data for this study. Statistical package for social science (SPSS) was used to analyse data. The findings were presented in form of tables and charts. The four independent variables that were studied, explain 88.1% of the factor affecting ICT software projects performance as represented by the R^2 . Therefore, a further research should be conducted to investigate the other factors (19.9%) that affects ICT software projects performance in Kenya. The study found that majority of the respondents agreed that Project management practices, Top Management support, user involvement and Project Monitoring influence ICT software project performance.

Keywords: project management, ICT software, project monitoring

INTRODUCTION

Computer based systems and information communication technology has had a significant impact on organizations over the past thirty years. They are viewed as means of providing competitive edge and hence, they are becoming part of the organization strategy. Computer based information systems have reduced transaction costs, altered nature of operations in organizations, enabled firms to develop closer relationships with their clients and created new opportunities for organizations. Recent generations of information systems in public sector support electronic delivery of public services to the citizens and business enterprises by enabling them to make most of their transactions with the government through electronic channels such as the Internet (Bellamy & Taylor 1998, Bekkers & Zouridis 1999). New concepts are being developed based on the above advanced capabilities such as the 'New Electronic Customer Focused Government'.

In the last few years, the project management discipline has matured through the publication of several standards (Pollack & England, 2007), best practices (Crawford & Pollack, 2007), research articles (Marnewick & Labuschagne, 2008) and significant growth in its community of professional practitioners (Leyborne, 2007).

A study in the UK by a special interest group associated with organizational aspects of IT indicates that IT project success rate was around 20-30% at best, with 70% of IT projects failing in some respect. Over

61% of projects were deemed to have failed; 75% were 30% over schedule or more; over 50% had exceeded their budgets by significant amounts (KPMG Canada Survey, 1997).

Beynon-Davies argues that, the worth of an IS will be determined in the three contexts of functionality, usability and utility. A study conducted by the Alexandria, Virginia based consultancy related to the implementation of ERP packages where 232 respondents from communications, financial services, government, healthcare, IT and utilities were interviewed. The results indicated that 51% viewed their ERP implementations as unsuccessful; 46 % did not feel the organization understood how to use the system to improve their business(The Robbins-Gioia Survey, 2001)

The Standish study defined project failure as either a project that has been canceled or a project that does not meet its budget, delivery, and business objectives. Conversely, project success, is defined as a project that meets its budget, delivery, and business objectives. Major categories of factors contributing to the success or failure of software systems are: (1) requirements, (2) management, (3) customers and users, (4) estimation, and scheduling, (5) the project manager, (6) the software development process, and (7) development personnel. According to Flynn (1995), project teams require a powerful champion to support the technologically weak organization and to ensure that communication process function as planned.

Bancroft et al. (1998) provided critical success factors for ERP implementation, including top management support, the presence of a champion, good communication with stakeholders and effective project management. The factors which are specific to ERP implementation include re-engineering business processes, understanding corporate cultural change and using business analysts on the project team.

Three separate surveys of software projects cost overruns done by Jenkins, Phan and Bergeron in 1984, 1988 and 1992 respectively as cited by Jorgensen et al(2006) found out that the average cost overrun for all of the projects in their survey samples (not just unsuccessful projects) were 33-34 percent (Jorgensen et al, 2006).Brynjolfsson and Hitt (2000) as cited by Wami, (2012) are of the opinion that successful implementation of ICT has the capacity to cut cost of coordination, communication and information processing; and many businesses have taken advantages of this. With the emergence of ICT and e-government, it is possible to improve efficiency and effectiveness of internal administration within government and to relocate government service from cities to locations closer to her citizens.

Kenya aims at improving its trade of goods and services with fellow East Africa Community (EAC) members. ICT has a major role to play in regard to facilitating communication and engagements among the members. There are various planned integrations such as implementation of the customs union, common market, monetary union and political federation including the legal, regulatory,and policy reforms required to accomplish the plans. Seamless ICT infrastructure and info-structure within the community is crucial to address the emerging mobile and cyber security issues perpetuated through ICT and fueled by the borderless nature of the services delivered through the technologies (Kenya ICT Master Plan, 2014).

Statement of the Problem

Although IS investments have grown in public sector, the use and, especially, the effects of it on a larger scale service delivery are still in the early stages and changes are only starting to occur (Grimson et al, 2012). Compulynx is one of the top 100 leading IT firms in Kenya this is according CIO East Africa. Compulynx offers a wide range of IT solutions including ERP, POS and many more. Having all that it has various project being undertaken in many clients. CIO East Africa magazine quoted the CEO of Compulynx saying that some of the problems that they face is projects being behind schedule. According to Michael Bloch (2012), software projects run the highest risk of cost and schedule overruns. On average, large IT projects run 45 percent over budget and 7 percent over time, while delivering 56 percent less value than predicted. Standish Group International, 2012 report indicates that 39% of all ICT software projects succeeded (delivered on time, on budget, with required features and functions); 43% were challenged (late, over budget, and/or with less than the required features and functions); and 18% failed (cancelled prior to completion or delivered and never used). This implies additional time to complete, as well as additional costs, as resources are not released in time to participate in other projects. There is empirical evidence that organizations are confronted with many information system management

problems and issues such as little integration or coordination between information systems (Menon, Lee & Eldenburg, 2012) and poor quality of information products including lack of consistency (Yang and Papazoglou, 2012), duplication (Basili and Caldiera, 2010), and out-of-date information systems (Bernstein et al., 2009). Most of these studies conducted on ICT software projects performance have focused on developed countries outside Africa. In light of this, this project seeks to assess the factors affecting the performance of ICT software project management in Kenya, a case of Compulynx Limited.

Objective of the Study

The general objective of this study will be to assess the factors affecting the performance of ICT software project management in Kenya, a case of Compulynx Limited. The specific objectives are:

- i. To determine how project management practices affects performance of ICT software a case of Compulynx Limited.
- ii. To investigate how top management support affects performance of ICT software projects a case of Compulynx Limited
- iii. To find out how user involvement affects performance of ICT software projects a case of Compulynx Limited
- iv. To determine how project monitoring affects performance of ICT software projects a case of Compulynx Limited

Research Questions

- i. What are the effects of project management practices towards the performance of ICT software projects a case of Compulynx Limited?
- ii. How does the top management support affects the performance of ICT software projects a case of Compulynx Limited?
- iii. How does user involvement affects the performance of ICT software projects a case of Compulynx Limited?
- iv. How does project monitoring affects the performance of ICT software projects a case of Compulynx Limited?

Theoretical Framework

Human Capital Theory and project management

Entrepreneurial knowledge of an individual gained from education adds economical value to a firm, (Becker, 1964). Skills and knowledge gained through education is importance to employees when they are performing their tasks as it improves their performance. Management teams require technical skills to run the projects successfully. These skills could be gained from technical institutions, formal education or on job training. This theory has been put in application in several occasions. The theory shows the need for the management team to have skills and experience in project management cycle and use of project management tools and techniques when running the projects. This theory addresses research question four which asks how project management practices affects performance of ICT software.

Project management model and project management

Project Management is the application of a collection of tools and techniques (such as the CPM and matrix organization) to direct the use of diverse resources toward the accomplishment of a unique, complex, one-time task within time, cost and quality constraints. Each task requires a particular mix of these tools and techniques structured to the task environment and life cycle (from conception to completion) of the task (Turner & Muller, 2005). Project management processes and techniques are used to coordinate resources to achieve predictable results. All projects need some level of project management. This model also consists of stages, but, unlike the sequential flow of the project life-cycle, the six-stage model assumes that some stages are carried out simultaneously. In particular, the model above assumes that communications will take place throughout the project. It also assumes that team building, leading and motivation will take place once the project has been defined and continue until it ends. The six phases are: **Define**; where the project is discussed fully with all the stakeholders and the key objectives are identified, **plan**; an initial *plan* is developed, **team**; the team members are usually involved in developing the plan and are often able to contribute specialist knowledge and expertise, **communications**; should take place continuously, both within the project team and between the project team and stakeholders in

the project, including anyone who contributes to achievement of the outcomes, **control**; the implementation takes place during the *control* stage (stage 4 in the model). During this stage, the tasks and activities of the team will be monitored against the plan to assess the actual progress of the project against the planned progress and lastly **review and exit**; where the review is held to evaluate whether all the intended outcomes of the project have been met. It is also important because it enables information to be gathered about the processes used in carrying out the project from which lessons can be learned for the future..

Information Systems Success Theory

Information systems success theory proposes that system quality and information quality affect users' usage of and satisfaction with information systems, further determining project performance (DeLone and McLean, 2004). Service quality was later incorporated into the model. The new model argues that system quality, information quality and service quality affect usage and user satisfaction, further affecting net benefits such as increased knowledge sharing and lower costs (DeLone and McLean, 2004).

Since its inception information systems success theory has been widely applied and empirically validated in the contexts of traditional information systems and electronic commerce. Wixom and Todd (2005) noted that information quality and system quality affect data warehousing software users' satisfaction, perceived usefulness, perceived ease of use and usage behaviour. Zhang (2010) proposed that both system quality and information quality affect social networking users' satisfaction and sense of community. Song and Zahedi (2007) reported that system quality and information quality affect users' trust in health intermediaries. Lin (2008) noted that system quality and information quality affect virtual community user satisfaction. The information system success theory was used in this study to find out how user involvement affects performance of ICT software projects a case of Compulynx Limited

Complexity Theory and Project Management

Current management practices require adherence to rigid, global responses unsuitable for addressing the changing needs of most projects. Complexity Theory and Project Management shifts this paradigm to create opportunities for expanding the decision-making process in ways that promote flexibility—and increase effectiveness. It informs readers on the managerial challenges of juggling project requirements, and offers them a clear roadmap on how to revise perspectives and reassess priorities to excel despite having an unpredictable workflow (Wanda Curlee, Robert L. Gordon, 2010)

Eisenhardt and Tabrizi (1995), studying the launching of a product, warn about the need for cycles of iterations, which should include designs and tests. Such iterations are very important in environments that require short time to launch products on the market.

Curlee and Gordon (2011) comment on how to apply the complexity in the linear phase of a project: 1) the “goals setting” phase remains essentially the same as the traditional approach: it is about establishing high-level goals of the project, 2) the “review the situation ” phase should be accomplished quickly in order to develop a flexible plan, 3) the “development plan” phaseshould contain the required milestones, but shouldalso offer only general guidelines for performing the tasks. Spending too much time detailing every step of the process is usually a waste of time, because they change once the project begins. Curlee and Gordon (2011) also warn of the importance of fluid communication of stakeholders from the beginning of the project, so that response times are fast and the project can be adapted to new conditions. In the more structured approaches,the inclusion of complexity follows a three-step itinerary: 1) classification of projects and the intensity of the complexity; 2) adaptive practices specific to each type of project; 3) definition of criteria for success to be used.

Theory of change and Project Monitoring

Theory of Change (ToC) is a specific type of methodology for planning, participation, and evaluation that is used in the philanthropy, not-for-profit and government sectors to promote social change. Theory of Change defines long-term goals and then maps backward to identify necessary preconditions. Theory of Change explains the process of change by outlining causal linkages in an initiative, i.e., its shorter-term, intermediate, and longer-term outcomes. The identified changes are mapped –as the “outcomes pathway” – showing each outcome in logical relationship to all the others, as well as chronological flow. The links between outcomes are explained by “rationales” or statements of why one outcome is thought to be a

prerequisite for another.. A Theory of Change can be developed retrospectively by reading program documents, talking to stakeholders and using monitoring and evaluation data. This is often done during evaluations reflecting what has worked or not in order to understand the past and plan for the future. The Theory of change and Project Monitoring was used in this study to determine how project monitoring affects performance of ICT software projects a case of Compulynx Limited

Conceptual Framework

Conceptual framework is a hypothesized model identifying the concepts under the study and their relationships. It is a diagrammatic presentation showing the relationship between independent and dependent variable Mugenda and Mugenda (2003). In this context the dependent variable is ICT software management performance, while project management practices, top management support, user involvement and project monitoring.

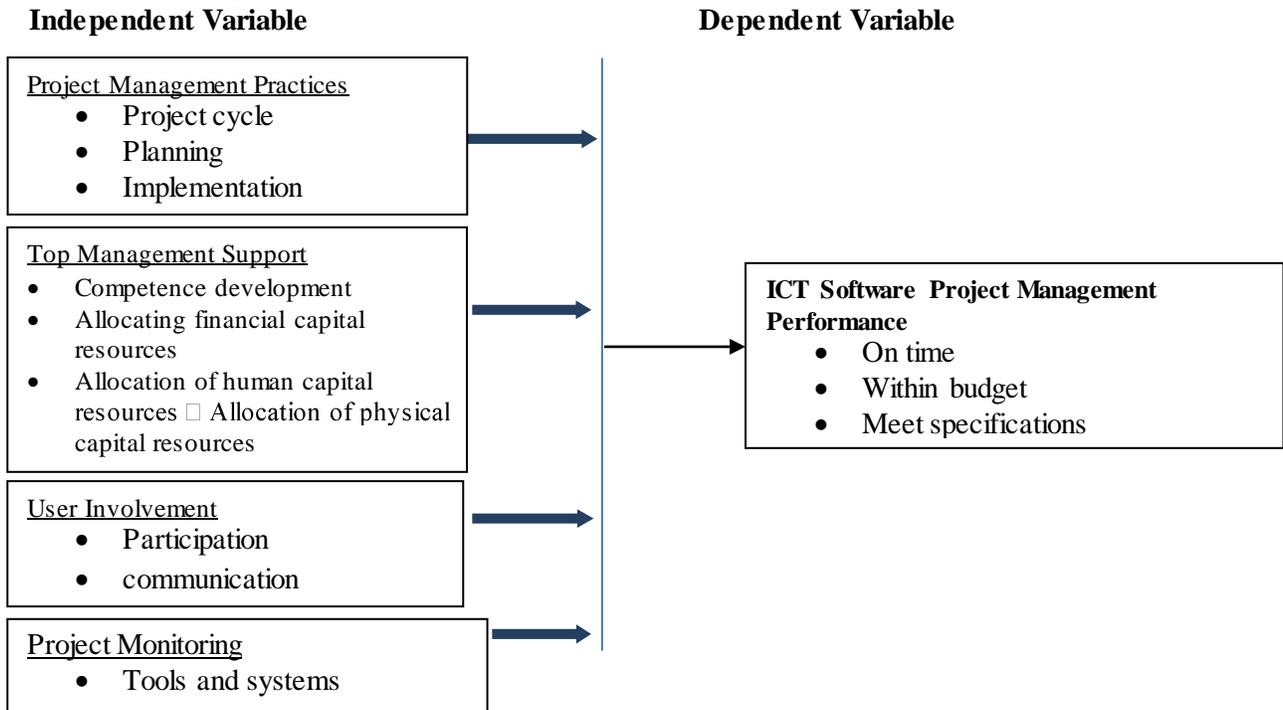


Figure 1. Conceptual Framework

RESEARCH METHODOLOGY

Research Design

This research was studied through the use of a descriptive research design. The study targets 500 employees of Compulynx Ltd in Kenya. The study targets these employees because they are in position to give accurate information. The employees are further classified into the following sector which includes top managers, middle managers and general staff.

Sekaran (2003) indicates that a sample size of 10% of the target population is large enough so long as it allows for reliable data analysis and allows testing for significance of differences between estimates. Therefore, a proportionate sample size of approximate 84 respondents which is 10% precision of the population was selected.

Table 1: Population and Sample Distribution

Stratum	*Population (N)	Sample (n)
Top managers	5	2
Middle managers	50	8
General staff	445	74
Total	500	84

*Source : Compulynx Ltd 2013

Data Collection Instruments

The researcher used both primary and secondary data during the researcher. Primary data was collected using a questionnaire from the employees of Compulynx Ltd Kenya. The questionnaire contain both structured and unstructured questions. The open-ended questions were used to limit the respondents to given variables in which the researcher is interested, while unstructured questions will be used in order to give the respondents room to express their views in a more pragmatic manner (Kothari, 2005). Secondary data was gathered from existing credible and recognized source. The response rate was 54 out 84 representing 64% of questionnaires drawn from Compulynx. Mugenda and Mugenda (2008) reveal that 60% response rate is good for such a study. Therefore, it can be inferred that such response rate was adequate.

Pilot Study

During the pilot study, two repeat mailings of the instrument were carried out to improve the overall response rate before sending the actual instrument to allow for pre-testing of the research instrument. Cronbanch's alpha for each value was established by the SPSS application and gauged against each other at a cut off value of 0.7 which is acceptable according to Cooper and Schindler (2008). The values were project management practices (0.745), Top Management support (0.7168), User Involvement (0.7263) and Project Monitoring (0.7177). All the values were above 0.7 which concludes that the data collection instrument was reliable.

Data Analysis and Presentation

Before processing the responses, the completed questionnaires were edited for completeness and consistency. Quantitative data that was collected was analyzed with the help of SPSS version 20. The information was displayed by use of bar charts, graphs and pie charts and in prose-form. Correlation analysis to establish the relationship between the independent and dependent variables will be employed. The purpose of doing correlation will be to allow the study to make a prediction on how a variable deviates from the normal. The hypothesis testing was done at 5% level of significance. The data was presented using frequency distribution tables, bar charts and pie charts.

Multiple Regression Analysis

Success of ICT software projects was regressed against three independent variables i.e. project management practices, Top Management Support, User Involvement and project monitoring.

This hypothesized there is a direct and positive association between four independent variables -project management practices, Top Management Support, User Involvement and project monitoring – and Success of ICT Software projects. The relationship among the variables is depicted below.

The equation for success of ICT software projects will be expressed in the following equation:

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \epsilon, \text{ where,}$$

Y= Success of ICT software projects, β_0 = constant (coefficient of intercept), X_1 = Project management Practices, X_2 = Top Management support, X_3 = User Involvement, X_4 = Project monitoring

ϵ = error term, β_1, \dots, β_4 = regression coefficient of four variables.

The chi square will be used to measure association between User Involvement, Management Support, project management practices – and Success of IT software projects in Kenya.

RESULTS AND DISCUSSIONS

General Information

As part of the general information, the research requested the respondents to indicate the department, position held, and gender of the respondent, age, and the Level of education.

Gender of the Respondent

The study sought to find out the gender of the respondents. From the findings as shown in figure 2, 70% of the respondents were male while only 30 % of the respondents were female. This response indicates that there is a slightly equal distribution of gender according to government policy that a third of work force should be of either gender. In addition it shows that both genders were well involved in this study and thus the finding of the study did not suffer from gender bias.

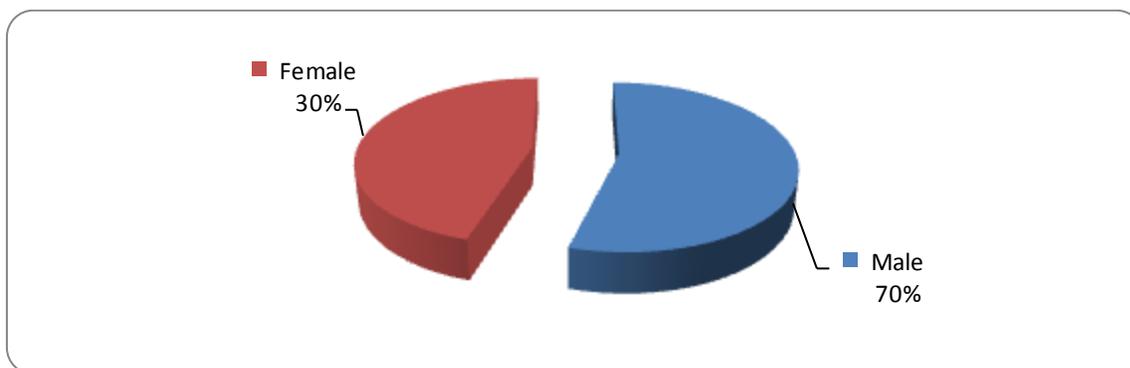


Figure 2: Gender of the Respondent

Level of education

Education is paramount in enabling the respondents to conceptualize issues related to resource utilization. It was established from the study that 61.9% of the respondents had bachelors, 20.2 % had certificate/diplomas, and 17.9% had post graduate. This is shown in Figure 3.

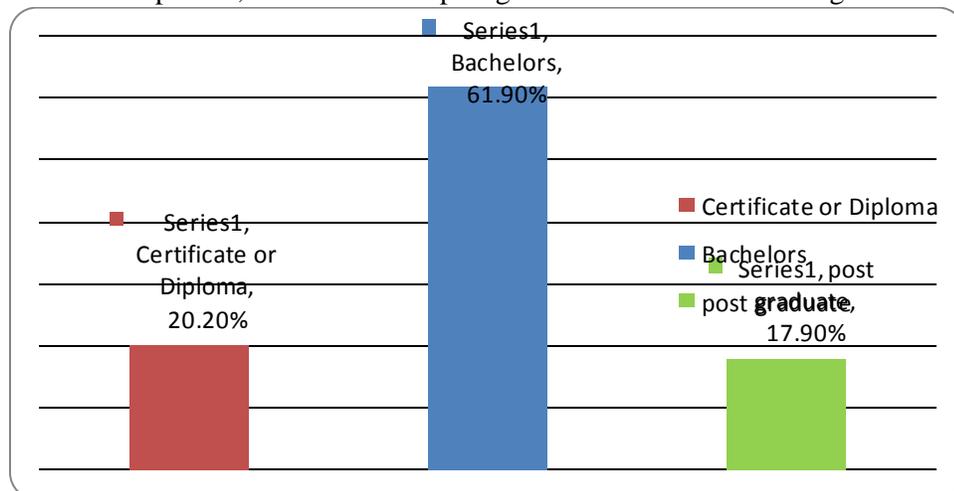


Figure 3: Level of education

Apparently from the above findings it shows that majority of respondents working in Compulynx have bachelor degree qualifications. This implies that they are capable of conceptualizing and respond authoritatively on issues and practices. This finding was inline with Katz (1992) finding that those with

higher education are more successful as they have more knowledge and have modern managerial skills making them more conscious of the reality of the business work.

Project Management Practices

Do you consider project management important in performance of ICT Software development?

The study sought to find whether project management practices was considered of importance to ICT software project performance in the firm. From the findings the study revealed that majority (90%) of the respondents agreed that project management practices are important to project performance in their firm through the planning and monitoring of the project while 10% of the respondents were of the opinion that project management practices were of less importance to project performance in their firm.

Do you believe that project management practices significantly improve performance of ICT software projects of the firm?

The study sought to find whether project management practices significantly improved the performance of ICT software projects in the firm. From the findings the study revealed that majority (89%) of the respondents agreed that project management practices significantly improved the performance of ICT software projects in the firm while 11% of the respondents were not for the opinion that project management practices significantly improved the performance of ICT software projects in the firm. The study also sought to find out the extent to which project management practices influence the performance of ICT software project. From the findings 83.3% of the respondents reported that project cycle oftenly influenced the performance of the ICT software projects, 16.7% agreed that project management tools and techniques sometimes influenced the performance of the ICT software projects while 83.3% reported that project management tools and techniques sometimes influenced the performance of the ICT software projects, 100% agreed that project planning always influenced the performance of the ICT software projects, 70% reported that project monitoring always project influenced the performance of the ICT software projects while 30% were of the opinion that project monitoring sometimes influenced the performance of the ICT software projects

What project management tools and techniques are you most familiar with?

The study sought to find out the project management tools that the respondents were familiar with 20% are familiar with Project charter, 30% Work Breakdown Structure, 10% Project Evaluation and Review Technique, 20% Gantt charts while 20% are familiar with SWOT analysis

Top Management Support

The study sought to investigate the influence of top management support on the performance of ICT projects in Compulynx Company. Specifically, the study focused on allocation of financial capital resources, allocation of human capital resources, allocation of physical capital resources and the competence development. 88% of the respondents agreed that top management support is important to successful completion of ICT software projects.

Allocation of financial capital resources

The study sought to find out whether allocation of financial capital resources influence the performance of ICT software projects in compulynx Company. From figure 4, 59.1% of the respondents indicated that financial capital resources influence the performance of ICT software projects to a very great extent,

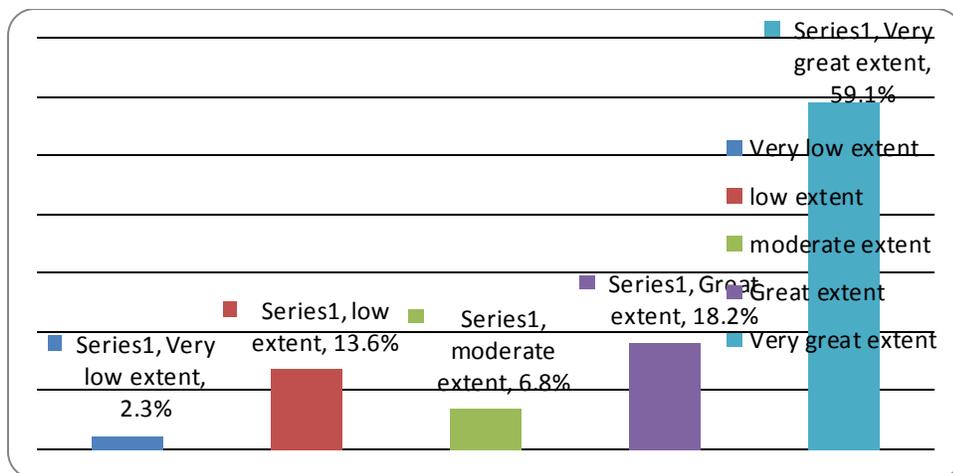


Figure 4. Extent to which allocation of financial capital resources influence the performance of ICT software projects in Compulynx.

18.2% indicated that financial capital resources influence the performance of ICT software projects to a great extent, 6.8 % indicated that financial capital resources influence the performance of ICT software projects to a moderate extent, 13.6 % indicated that financial capital resources influence the performance of ICT software projects to a low extent while 2.3 % indicated that financial capital resources influence the performance of ICT software projects to a very low extent. The findings of the study concur with that by Mohd (2002) who concluded that the success of organizations is highly dependent of financial capital resources. Therefore, it can be inferred that allocation of financial capital resources is a key ingredient of performance of ICT software projects in compulynx Company.

Allocation of human capital resources

The study sought to establish the extent of allocation of human capital resources influence the successful completion of ICT software projects in compulynx. Figure 5 shows that 25% of the respondents indicated that human capital resources influence the successful completion of ICT software projects to a very great extent, 36.4% indicated that human capital resources influence the successful completion of ICT software projects to a great extent, 31.8 % indicated that human capital resources influence the influence the successful completion of ICT software projects to a moderate extent, while 6.8 % indicated that human capital resources influence the successful completion of ICT software projects to a low extent.

The findings collaborate with those of Viedma (2001) who observed that human capital is considered as the potential source of innovation and generation of ideas for the firm, thus providing added value of unquestionable importance. Human capital is recognized as the organization’s most important intangible resource (Johanson, 2005) by playing a fundamental role in firms in this knowledge-based economy (Sveiby, 2000).

The findings show that allocation of human capital resources is an important factor in the successful completion of ICT software projects in Cmpulynx

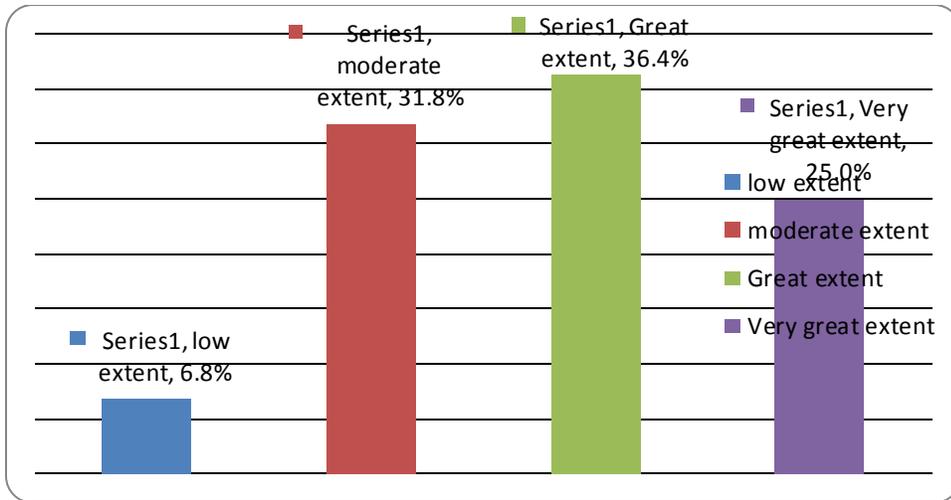


Figure 5 Extent to which allocation of human capital resources influence the performance of ICT software projects in Compulynx.

Competence development

The study sought to evaluate the extent to which Competence development influence the performance of ICT software projects in Compulynx. Figure 6 shows that 18.2% of the respondents indicated that Competence development influence the performance of ICT software projects to a very great extent, 45.5% indicated Competence development influence the performance of ICT software projects to a great extent, 27.3 % indicated that Competence development influence the performance of ICT software projects to a moderate extent, 6.8 % indicated that Competence development influences the successful completion of power projects to a low extent. While 2.3 % indicated that Competence development influence the performance of ICT software projects to a very low extent.

This findings collaborate with findings of study by Samson and Lema (2002) who found that competence development enhances quality and productivity performance of construction projects. The study concludes that competence development influence the performance of ICT software projects in Compulynx Company as depicted by the statistics above.

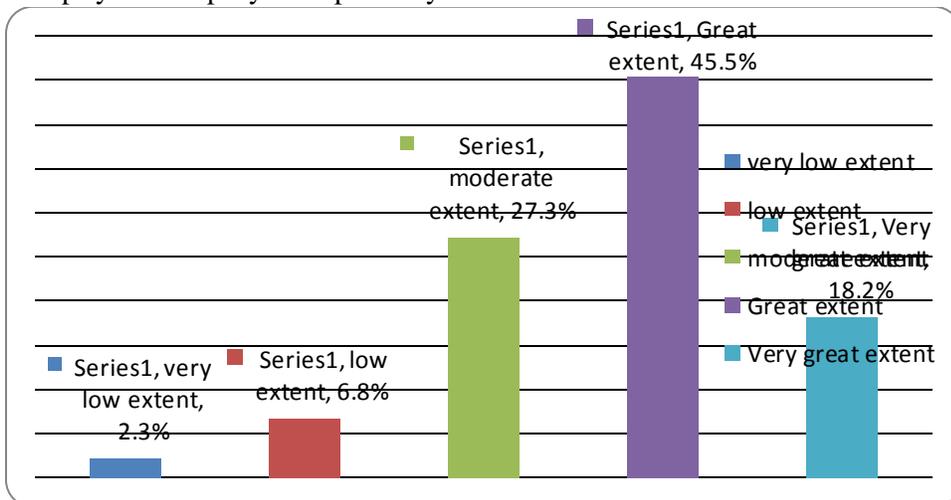


Figure 6: Extent to which Competence development influence the performance of ICT software projects in Compulynx.

User Involvement

The study sought to find out the extent to which user involvement influenced project performance of ICT software projects in Compulynx. According to Ivana Zuber (2014), when we talk about failed software projects, lack of user involvement is one of the top reasons for software project failures (Viskovic, 2008). It is not enough to finish the project on time and in budget, our end goal is to have the developed software accepted by the users who the software is being developed for. In order to make sure our product will be accepted by end users, we must include them in the development and testing phase. According to the findings, 90% of the respondents indicated that user involvement influenced project performance in the company, 10% of the respondents indicated that user involvement does not influence project performance in the organization.

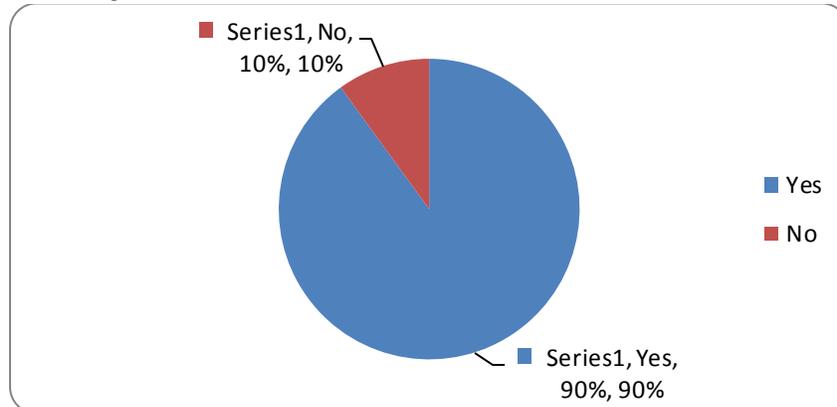


Figure 7: Whether User Involvement influenced project performance the organization

At what stage do you involve users during software development project?

The study sought to find out the stage at which users are involved during ICT software projects in Compulynx. According to the findings, 30% indicated that users are involved during user requirements specification stage, 20% during design stage, 10% during development stage while majority 40% reported that users are involved at the software testing stage.

Every software project must begin with a user requirements specification Ivana Zuber (2014). This is a list that contains all the features and specifics of the software that must be included in the end product. Secondly, during development, it is good practice to iteratively deliver numerous software versions to the stakeholders for their review. This way we make sure we are on the right track, we have the users test our product and report any issues or further requirements. Each new software version will contain additional features which will then be tested by stakeholders in the upcoming iteration. Agile methodologies, as explained by Wysocki (2012), support and encourage this kind of development – software is developed in iterations with numerous software versions, and each software version is tested and reviewed by stakeholders. The risk of rejecting the developed software at the end of the development cycle is largely reduced this way.

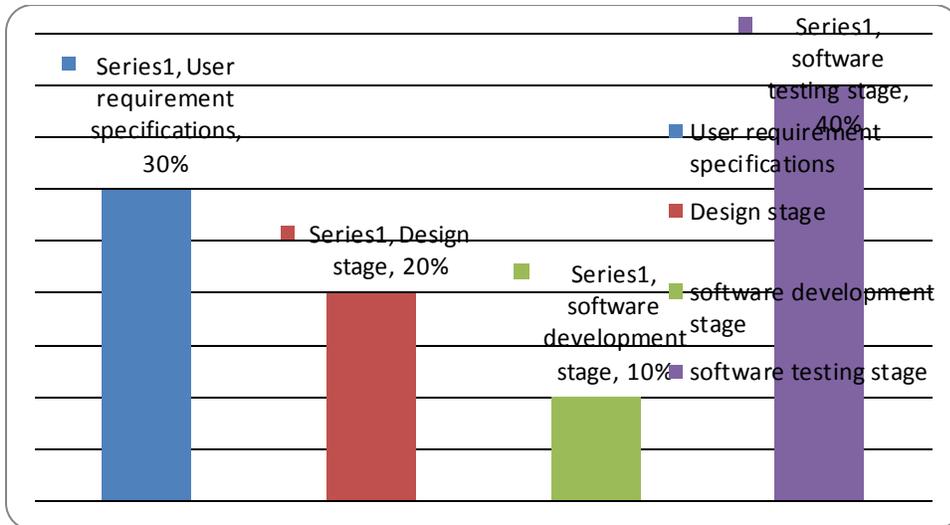


Figure 8: Stage users involvement during software development project?

Project Monitoring

The study sought to find out the extent to which project Monitoring contributed to project performance of ICT software projects. According to the findings, 80% of the respondents indicated that project Monitoring influenced project performance in the company, 20% of the respondents indicated that project Monitoring does not influence project performance in the organization. Project developers often describe usability as fuzzy and ungraspable Shang et al. (2010). In order to reach a goal, you have to know what the goal is. In order to improve usability, you need a shared understanding of it Walton et al. (2008). Project can be used by specified users to achieve specified goals, with effectiveness, efficiency and satisfaction, in a specified context of use.” Admittedly, due to its somewhat generic formulation this definition does need to be made more specific to be useful (Mudgal et al., 2009). Defining monitoring is one approach, but creating shared understanding might not require establishing a formal, explicit definition Wang (2005). This study is therefore a support to studies done by other scholars.

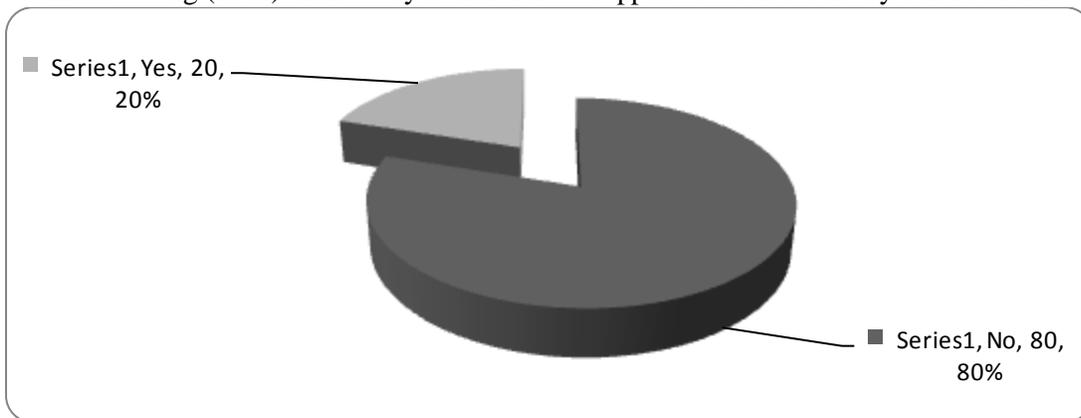


Figure 9. Whether Project Monitoring influenced project performance the organization

Extent to which project Monitoring influenced ICT project performance in your organization

The study sought to find out the extent to which project monitoring influenced project performance in the organisation. According to the findings, 40% of the respondents indicated that Project Monitoring influenced project performance in the organization to a very great extent, 28% of the respondents indicated that Project Monitoring influenced project performance in the organization to a great extent, 21% of the respondents indicated that Project Monitoring influenced project performance in the organization to a moderate extent, 4% of the respondents indicated that Project Monitoring influenced

project performance in the organization to a low extent while only 2% of the respondents indicated that Project Monitoring influenced project performance in the organization to a very low extent. This implies that Project Monitoring may be compromised because workers may have more knowledge of the complex parts compared to the entity, thus they need to be involved during the requirement and specification development stage if possible for high quality results from Project Monitoring. This is in line with the research done by Edler and Uyarra (2012) that further highlighted that sufficient planning, defining and user engagement early in the project performance process are crucial to spur Project Monitoring in the project implementation.

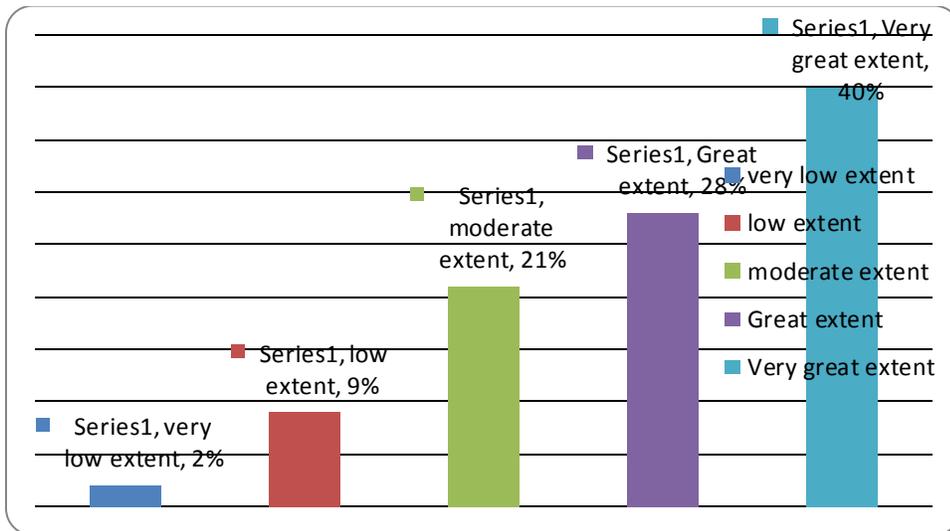


Figure 10: Extent to which Project Monitoring influence project performance in the organization

Table 2: Respondents level of agreement with statements about the Project Monitoring

Project Monitoring Statements	Mean	Stdev
Identify corrective actions to address issues	4.0	0.2
Monitoring the project variables	4.3	0.3
Continuing support of end-users.	3.7	0.3
Measuring the ongoing project activities	4.6	0.1

It was observed that Project performance means measuring the ongoing project activities as shown by a mean of 4.6; that Monitoring the project variables is very closely linked with project performance needs at Compulynx as shown by a mean of 4.3; that Identifying corrective actions to address issues is necessary to achieving project performance at Compulynx as shown by a mean of 4.0; and that Continuing support of end-users provide expertise, technical support and coordinate the customer interface to select the best project which is in line with project performance policy at Compulynx thus reducing operation costs as shown by a mean of 3.7. Moreover, some researchers state that more extensive management skills are needed at the buyer's side to understand suppliers' potential to respond to demand signals for project performance (Schapper et al 2006).

Regression Analysis

In addition, the researcher conducted a linear multiple regression analysis so as to test the relationship among variables (independent) on the ICT software project performance. The researcher applied the statistical package for social sciences (SPSS) to code, enter and compute the measurements of the multiple regressions for the study.

Table 3: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.896 ^a	.881	.132	.3295

The adjusted R² is the coefficient of determination. This value explains how project performance practices varied with Project Management Practices, Top Management Support, User Involvement and Project Monitoring. The four independent variables that were studied, explain 88.1% of the factor affecting ICT software projects performance as represented by the R². Therefore, a further research should be conducted to investigate the other factors (19.9%) that affects ICT software projects performance in Kenya.

Table 4: ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	11.534	5	2.868	52.410	.0072
	Residual	186.555	27	2.139		
	Total	198.089	32			

According to Mugenda&Mugenda, 2003, ANOVA is a data analysis procedure that is used to determine whether there are significant differences between two or more groups or samples at a selected probability level. An independent variable is said to be a significant predictor of the dependent variable if the absolute t-value of the regression coefficient associated with that independent variable is greater than the absolute critical t-value. The regression analysis also yields an F-statistic where if the calculated F-value is greater than the critical or tabled F-value, the prediction will be rejected. In this study, the significance value is .0073 which is less than 0.05 thus the model is statistically significant in predicting Project Management Practices, Top Management Support, User Involvement and Project Monitoring.

Table 5: Coefficient of determination

Model		Unstandardized Coefficients	t	Sig.
1	(Constant)	3.757	0.787	0.255
	Project Management Practices	0.554	1.091	0.002
	Top Management Support	0.879	0.687	0.005
	User Involvement	0.568	0.97	0.013
	Project Monitoring	0.685	0.349	0.032

Source: Research, 2015

The researcher conducted a multiple regression analysis so as to determine the relationship between ICT Software Project Management Performance and the four variables. As per the SPSS generated table above, the equation ($Y = \beta_0 + \beta_1X_1 + \beta_2X_2 + \beta_3X_3 + \beta_4X_4 + \epsilon$) becomes:

As per the SPSS generated the established regression equation was:

$$Y = 3.757 + 0.554 X_1 + 0.879 X_2 + 0.568 X_3 + 0.685 X_4 + \epsilon \text{ where:}$$

X₁= Project management Practices

X₂= Top Management support

X₃= User Involvement

X₄= Project monitoring

ε = the error

According to the regression equation established, taking all factors into account (Project Management Practices, Top Management Support, User Involvement and Project Monitoring) constant at zero, ICT Software Project Management Performance will be 3.757. The data findings analyzed also show that taking all other independent variables at zero, a unit increase in Project management Practices will lead to a 0.554 increase in ICT Software Project Management Performance; a unit increase in Top Management support will lead to a 0.879 increase in ICT Software Project Management Performance, a unit increase in User Involvement will lead to a 0.568 increase in ICT Software Project Management Performance and a unit increase in Project monitoring will lead to a 0.685 increase in ICT Software Project Management Performance. This infers that Top Management support contribute more to the ICT Software Project Management Performance followed by the project monitoring.

At 5% level of significance and 95% level of confidence, Project management Practices had a 0.002 level of significance; Top Management support showed a 0.005 level of significant, User Involvement showed a 0.013 level of significant, Project monitoring had a 0.032 level of significant, and hence the most significant factor is Top Management support.

CONCLUSIONS

The core of this study was to explore the factor affecting the performance of ICT software projects in Compulynx. Based on previous studies, independent variables were expected to have positive relation with performance of ICT software project in compulynx. The output given from the findings indicate that there is a significant positive relationship between independent variables namely Project management practices, Top management support, User Involvement, Project Monitoring with successful completion of ICT software projects in Compulynx.

The findings also indicated that project management practices have been a major contributor towards the performance of ICT software projects in Compulynx. Project managers typically use several tools and techniques to help them orchestrate activities along a project life cycle. The results also revealed that the Top management support, User Involvement and Project Monitoring have positive relationship with performance of ICT software projects in Compulynx.

RECOMMENDATIONS

Policy and practice for project performance should be carefully evaluated and the results of that evaluation fed back into improved approaches. It is important that the evaluation considers the full range of costs and benefits. The organisation should have sufficient special technical and project management knowledge and openness to new, effective methods when initiating ICT software projects. Staffs should be equipped with the specific skills and competencies needed to design and develop software using the appropriate software development process.

Project performance initiatives appear to be instrumental for improving organizational performance, by harmonizing purchases, launching co-ordination initiatives, setting standards and building skills. As such, the management of the Compulynx should adopt project performance initiatives. However, the main focus of project performances should be to reduce risk of rejecting the developed software at the end of the development cycle.

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