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INFLUENCE OF ICT ON SUCCESSFUL PROJECT COMPLETION IN THE KENYAN BANKING INDUSTRY: CASE OF FIVE LARGEST BANKS

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ABSTRACT

Banks in Kenya are continuously engaging in projects due to the nature of business, technology advancements, competition and customer expectations. Introduction of new products, new channels and systems and expansion of branches and regions are examples of projects undertaken by banks. Successful project completion is a desired common goal in most projects undertaken by different entities across the world. The study examined the influence of ICT on successful project completion in the Kenyan banking industry. The study was guided by research objectives which included finding out to what extent Digital Communication Tools, automated document management software and Project Management Software contribute to successful project completion in the Kenyan banking industry. This research study used a descriptive research design. The target population of this study was 112 staff in PMO in Kenyan offices for KCB, Bank, Equity Bank, Cooperative bank, Standard Chartered bank and Barclays bank. The study used stratified sampling technique to select 30% of the target population. The sample size of this study was 34 respondents. The study used primary data which was collected by use of self-administered questionnaires. The questionnaire were administered by use of a drop off and pick later method to sampled respondents. In processing the qualitative data content analysis was used. The quantitative data in this research was analyzed by use of descriptive and inferential statistics using SSPSS. The study found that use of Project Management Software and Document Management Systems, in project management have a positive influence on successful project completion in the Kenyan banking industry.

Key Words: *ICT, Banking Industry, Successful Projects*

INTRODUCTION

The study sought to examine the influence of ICT on successful project completion in the Kenyan banking industry. A study done by Baccarini and Collins (2002) showed that there is dominance of Project success being defined wrongly using the narrow project management success criteria of time, cost, and quality. The project management community in Australia agrees that defining of project success should include project management success and product success thus includes customer satisfaction (Baccarini & Collins 2002). Ajam (2013) argues that it is difficult to measure the success of a project at project closure as most of the project's intended benefits will not be realized until a few months later. He concludes that it is the responsibility of an organization to measure project success at a point where they can meaningfully assess its outcome and determine if they realized the intended benefits.

According to Mobey and Parker (2002) to increase the chances of a project succeeding an organization must have an understanding of what are the critical success factors, to systematically and quantitatively assess these critical success factors and then choose appropriate methods of dealing with them. Following years of extensive project management exposure and after interacting with a myriad of clients in diverse project environments, Bauer (2010) came up with a list of critical success criterion from his clients which include having satisfied stakeholders, meeting the project's objectives/requirements, meeting an agreed budget, delivering on time, adding value to the client organization, meeting the client's quality requirements and achieving an acceptable sense of professional satisfaction for the project team.

In Lithuania, Gudiene, Ramelyte and Banaitis (2013) state that project management experience ,project value, project manager's experience, experience of contractor, project size, competence of project team members, clear and realistic goals, decision making, effectiveness of project management, and technical capability of project management are the most important success factors for construction projects. In Malaysia, 33.4% of the projects success amongst manufacturing companies is contributed by project mission, top management support, client consultation, technical task, personnel competency, client acceptance, troubleshooting, project plan monitoring, and effective communication (Kuen, Zailani & Fernando, 2009). In Bulgaria, Alexandrova and Ivanora (2012) considers competency of project manager, competence of project team, quality of subcontractor services, and top management support as CSFs of project success.

According to Amade, Ogbonna and Kaduru (2010) commitment of contracting firms, project staff's skills, collective responsibility among project stakeholders, project management tools and techniques, accuracy of project cost estimates, supplier commitment to project specifications, project financing, environmental factors, accuracy of designs, and accuracy of project schedules contributes to 55.2% of successful project implementation in Nigeria.

In Kenya, similar studies on CSFs for successful project completion have been carried out with a wide range of factors being identified. In his research, Mwai (2012), concluded that "project success is a matter perception and a project will most likely be perceived as successful if it meets its technical performance specifications and /or mission of the project, there is a high level of satisfaction among key people on the project team and key users or clientele of the project effort." There is also a general agreement that although schedule and budget performance alone are considered inadequate as measures of project success they are still important components of the overall construct (Mwai 2012).

Meroka (2011), concludes that financial viability, management, market analysis and the quality of project management are the critical success factors

of industrial and commercial projects in Kenya. Wambugu (2012) identifies strategy, project team capacity, project communication, monitoring and evaluation, and client consultation as factors influencing success of Constituency Development Funds (CDF) projects in Nyeri County. Kabutu (2013) contends that top management support, technology, training and competence, organizational resource, and funds management to be success factors of offshore software development and implementation projects in public organizations.

Statement of the Problem

The banking industry is a highly competitive industry characterized by diversification of products and innovations. According to Kenya Bankers Association (2014) banks failed to meet the March 31st 2014 deadline on the switch to chip based ATM project and were facing major challenges in the implementation phase of the project. A new bond trading system implemented by the CBK in early 2012 slowed down activities in the bond market with trading declining by almost half in one particular week just after the new system implementation project had been hailed as successful (CBK Publications, 2012).These instances on the projects in the Kenyan banking industry show that successful project completion is a problem.

A study done by Baljkas (2000) found that projects managed by computer software had a 67.9% success rate as opposed to those that are not managed by computer software which had a 45% success rate. “Integration of information and communication technologies (ICT) into the project management became almost an obligation for each organization. ICT literature shows that use of ICT in organization reflects on strategic importance and general optimism concerning ICT potential for creating advantage. From that point of view, ICT became irreplaceable element and help in project management. ICT skills became an eliminated factor for becoming a project team member” (Drouin & Besner, 2012, 179).

Reviewed literature show that studies have focused on successful completion of ICT projects and not on how ICT influences successful project completion. This study therefore sought to analyze the influence of ICT on successful project completion.

Research Objectives

The overall objective of the study was to examine the influence of ICT on successful project completion in the Kenyan banking industry. This was supported by the specific objectives which are to find out the influence of use Project Management Software project management and Document Management System in project management on successful project completion in the Kenyan banking industry.

Research Questions

i. To what extent does use of Project Management Software in project management influence the successful project completion?

ii. How does use of Document Management System in project management influence the successful project completion?

Scope of the Study

This study focused on the influence of ICT on successful project completion and researched on activities within the scope of the issues addressed by the research objectives. The study focused on two independent variables which include; Project Management Software and Document Management Systems. The study was restricted to four measurements of successful project completion; on time, within budget, within scope and customer specification. The study examined how the independent variables influence the four aspects of measurement of successful project completion.

LITERATURE REVIEW

Theoretical Review

A theory is a set of statements or principles devised to explain a group of facts or phenomena especially

one that has been repeatedly tested or is widely accepted and can be used to make predictions about natural phenomena (Popper, 1963).

a) Rogers's innovation diffusion theory

Rogers (1983), considers the process on innovation diffusion as one which is dictated by uncertainty reduction behavior amongst potential adopters during the introduction of technological innovations. Though innovations offer new ways of tackling problems, the uncertainty of whether the new ways will be superior to existing ones becomes an obstacle to the adoption process. To counter this uncertainty, potential adopters are motivated to seek additional information, particularly from their workplace peers (Niederman, Brancheau & Wetherbe, 1991).Many innovations take long from when they become available to when they are actually adopted, the common problem amongst individuals and organizations is how to speed up the rate of diffusion of an innovation (Rogers, 1983).

According to Sahin (2006) there are four key characteristics of innovation that consistently influence the adoption of new technologies; relative advantage, which is the degree to which a technology is perceived to be better that the idea it supersedes; compatibility, is the degree to which a technology is perceived as being consistent with existing values, past experiences and needs of potential adopters; complexity is the degree to which an innovation is perceived as difficult to understand and use; and trial ability, which is the extent to which an innovation may be experimented with on limited basis.

Moreover, Moore and Benbasat (1991) add that image and visibility are also key features of innovation that determine the diffusion rate. Image is the self-perception that adopting an innovation could result in enhanced social status for individual amongst his/her peers. Visibility on the other hand is the degree to which prospective users see an innovation as being visible in the adoption context.

There are various reasons why an organization chooses to invest in Project Management Software. These reasons include making the work of a project manager easier and more efficient, providing applications to aid in planning, managing of project costs, tracking activities and monitor project schedules (Marti & O'Brien, 2005).However Davis (1989) advises that the benefits derived from use of Information technology can be undermined by user reluctance to accept and use new technologies at their disposal.

PMS benefits can only be realized if the intended users utilize the systems in a way that will enable successful project completion and hence contribute to the strategic and operational objectives of the organization. The innovation diffusion theory addresses the first research question which asked to what extent to which use of Project Management Software in project management influences successful project completion.

b) Systems Theory

The systems theory is a method of organizing the interaction between component parts of a larger organism, the theory seeks to organize information rather than explain observations (Boulding, 2004).A system is an organized whole consisting of various components that interact in a way distinct from their interaction with other entities and which lasts over a given period of time (Anderson, Lowe & Carter, 1999).According to Brandell (2010) systems theory enables us to understand the components and dynamics of client systems in order to interpret problems and develop balanced intervention strategies so that the "goodness to fit" between individuals and their environments is maintained.

According to Tao and Tan (2013) the behavior of specific complex systems relies on how the components interact and how they relate to each other. This helps in understanding fundamental structure of various systems applying similar underlying issues. In projects the fundamental factors are similar for project managers, project teams, funding

agencies, consumers, time, budgets and communication practice. The way in which these factors relate with each other is what makes a project special and unique with its own dynamics

Kishore, Abraham and Sinfield (2011) state that he individuals who have taken part in projects appreciate that impacts take longer time to clearly be noted and mostly small causes can have great influence on the people and project itself. Human issues such as the motivation of project members and the clients' satisfaction are all vital factors in this phenomenon. Insufficient communication can lead to disagreements and slow collapse of the project.

Even though great weight is laid on controlling technical hitches in projects, the actual causes of the project malfunctions are mostly as a result of human and information issues. Considering general complex projects, it is clear that most of the rules that describe any complex system are also relevant to projects (Kishore et al., 2011).

Haslett and Sankaran (2009) state that project managers are dealing with complex systems defined by numerous stakeholders, nonlinearities, multiple interdependencies and feedback systems. Typical nonlinearities are often unanticipated changes in the scope of the project, dismissal of key project members or termination of project funding arrangements while interdependencies are the relationships between project team, stakeholders, clients, contractors and suppliers. The feedback systems are rework cycles, progress updates and performance reviews (Haslett & Sankaran, 2009).

Communication is the process of transmitting information and common understanding from one person to another or to many others (Keyton, 2011).This definition shows that unless the sending and receiving parties have a common understanding of the information shared, then there is no effective communication.

According to Lunenburg (2010) communication involves various elements which include the sender, who is the person initiating the communication. The sender encodes the information he/she intends to share into a certain format using words, symbols or gestures. The second element is the message which is the outcome of the encoding which is in either verbal, non-verbal or written form. The message is then sent through a channel or medium which is the third element. This medium can either be a face to face communication, email, telephone call, social media platform or radio. The receiver is the fourth element and is the individual(s) who receive the message and decode it to meaningful information. Feedback as the fifth element is a response from the receiver to the sender in regards to the received message.

Noise is anything that distorts the message leading to lack of a common understanding between the sender and receiver (Lunenburg, 2010).Keyton (2011) concludes that the elements of communication determine the quality of communication and a problem in any of these elements reduces the effectiveness of the communication

Conceptual Framework

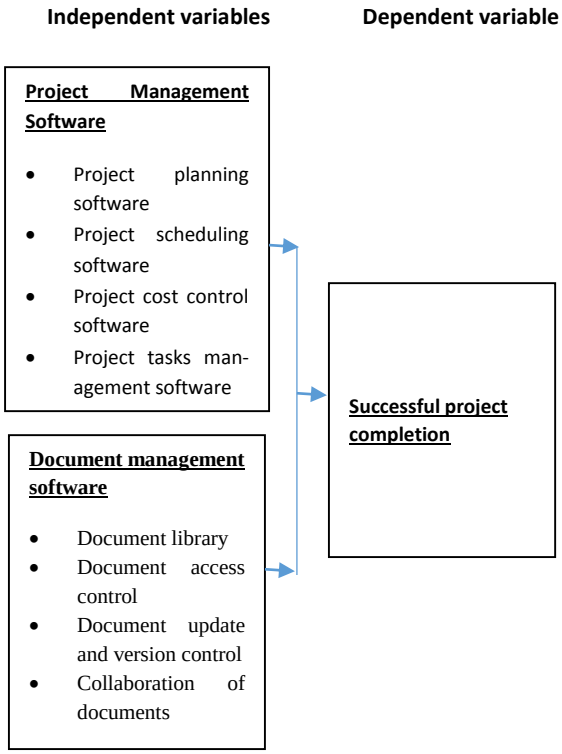

Figure 1: Conceptual Framework

a) Project Management Software

Project Management Software are computer tools used to track people, time, resources and tasks over the duration of a project (Horton, 2008).Project Management Software is a term that covers many kinds of software, including project planning, project scheduling, cost control and budget management, resource allocation, collaboration software, communication, task and time tracking (Pellerin, Perrier, Guillot, & Leger,2013)

According to Marti & O'Brien (2005), Project Management Software is used to make the work of a project manager easier and more efficient by providing applications to aid planning, tracking of activities, managing project costs and monitoring schedules. Project Management Software facilitate the integration of project data, enables interaction with other enterprise systems and also allows interoperability with other new technologies (Pellerin et al., 2013). According to Horton, (2008) besides optimizing the project teams' productivity, Project Management Software allows implementation of effective project management practices, improved decision making and maintaining of a competitive advantage.

According to Aadamsoo (2010), PMS represent a rapidly growing technology in IT and the number of users who utilize PMS continue to grow. Marti & O'Brien (2005), discovered that the use of PMS as a tool for managing and organizing work has grown and continues to grow at a rapid pace across all industries. IT and information systems nowadays play an important role in efficient project management and key to this is the use of PMS (Pellerin et al., 2013).Using PMIS while not singly an insurance to project success, has become a necessity in most organizations (Raymond & Bergeron, 2008).A study by Ali, Anbari and Money (2008) adds that PMS usage to project success factors empirically confirming that PMS usage enhances project professionals' performance and provides a positive impact on the results of their projects

The PMS literature has found that the use of PMS use has rapidly grown over the last few years across all industries (Aadamsoo, 2010; Pellerin et al., 2013; Horton, 2007; Marti & O'Brien, 2005; Raymond & Bergeron, 2008; Ali et al., 2008). These studies indicate that PMS have a positive contribution to effective project management and the successful project completion.

In view of the evidence provided in the reviewed literature, the researcher hypothesized that use of PMS has a positive contribution towards the successful project completion.

b) Document Management Systems (DMS)

Document Management System is a central repository for uploading, updating and accessing current copies of shared strategic and operational documents (Irmler, 2009).DMS is a computer system that enables centralized storage, access, sharing and collaboration of documents by several users (Sulankivi, 2003).

Centralized digital information management is used to support project management, management and distribution of project information and to promote cooperation in the project delivery process. Several commercial computerized tools have been created for document management and this tools have been adapted across industries at a high rate (Sulankivi, 2003).Ineffective document management issues are common across the United States and United Kingdom and have led to lost productivity, lost business and reduced morale amongst employees in organizations.(Seiwald,2013).According Heckman (2008) to medium and large organizations with tens or hundreds of thousands of documents, using a DMS is an absolute necessity. In view of the evidence provided in the reviewed literature, the researcher hypothesized that use of DMS has a positive contribution towards the successful project completion.

c) Successful project completion

Successful project completion is traditionally measured using the "golden triangle", which means

completing the project on time, within budget and to specification (PMI, 2004).This is the operational mindset which is influenced by the "get the job done "approach (Dvir, Sadeh, & Malach-Pines, 2006).Cleland, Cleland and King (1988), argue that satisfaction of all project stakeholders is what defines successful project completion. Properly maintained schedules and correctly utilized budgets will not be of importance if project outcomes do not satisfy stakeholders. Flannes and Levin (2001), emphasize that projects survival is based internal and external clientele. Project success involves meeting customer expectations and consumer utilization of the project results.

Other studies support the inclusion of customer satisfaction as the fourth dimension of success (Lipovetsky, Tishler, Dvir & Shenhar, 1997; Lim and Mohammed, 1999; Zwikael and Sadeh, 2007, Kerzner, 2006).

Empirical literature review

A study done by Pellerin et al. (2013), attempted to study the relationship between use of Project Management Software, project performance and project characteristics in Canada. 21 projects were selected from an engineering company and were the focus of the study. Statistical tests were performed in SPSS using project data from the engineering firm. Results from this study showed that less performing projects present significantly low Project Management Software utilization than the other projects.

Alexandrova and Ivanova (2012), attempted to study the critical success factors of project management in Bulgaria .Questionnaires were distributed to 132 project managers and project team members of projects supported by EU programs. There was 98% response rate (129 respondents out of 132).One of the conclusion of this study was that technical competence of the project manager is a critical success factor in project management.

Baljkas (2000), in his research performed on a sample of 50 companies, shows that 59% companies in Croatia use certain software for planning and managing projects. The findings of his research showed that in Croatia, project managed by computer software had a 67.9% success rate as opposed to those that are not managed by computer software which had a 45% success rate.

Bardhan, Krishnan and Lin (2012), attempted to study team dispersion, information technology and project management in the United States of America (USA).780 questionnaires were distributed to project managers across a large cross-section of USA firms. The overall response rate was 82 % (637 respondents).

Critique of the review

Olalusi and Jesulolowa (2013), made a research on the impact of information technology on the Nigerian construction industry. From the research project management is one of the areas that is positively impacted by Information technology. This research was however not focused the banking industry and the study was in Nigeria.

Pellerin et al. (2013), in their study on the relationship between use of Project Management Software, project performance and project characteristics, found that less performing projects present significantly low Project Management Software utilization than the other projects. This study was however focused on the engineering sector, not banking, and was done in Canada.

Baljkas (2000), examined the impact of using Project Management Software by companies in Croatia. His research showed that companies that use PMS had higher chances of success as opposed to those that did not. This research although done on companies from different economic sectors was not specific to the banking industry and was also in Croatia.

Alexandrova and Ivanova (2012), made a research in Bulgaria on the critical success factors of project management and though their research concluded that technical competence of the project manager was one of the critical success factors, it was not

explicit on the extent to which technical competence influences successful project completion.

Research Gaps

The empirical study indicates that research in the area of influence of various factors of ICT on successful project completion has been done but not in a comprehensive approach. Most studies on influence of ICT have also been done in developed countries outside Africa.

Most studies on the influence of ICT have been focused on other areas rather than on the banking sector. Acar, Kocak, Sey and Arditi (2005), did a research to assess use of ICT by SMEs in building construction. The results of the research revealed common underutilization of ICTs by SMEs in building construction. This study focused on SMEs, not large organizations and in the construction industry not banking.

Studies on ICT have also focused on other factors other than successful project completion. Mboya (2013) attempted to study the influence of adoption of ICT on organization performance by Kenya Wildlife Services (KWS).This study is focused on organizational performance rather than project performance.

This study therefore intended to fill these pertinent gaps in literature by studying the influence of the selected ICT independent variables on successful project completion in the Kenyan banking industry. This study sought to add value to the existing literature by providing empirical evidence on the influence of ICT of successful project completion in the Kenyan banking industry.

RESEARCH METHODOLOGY

Research Design

The research study used a descriptive research design. Descriptive design portrays the variables by answering who, what, and how questions (Babbie,2007). The reason descriptive research design was chosen is because it gives the opportunity to use quantitative and qualitative data, in order to find data and characteristics about a population or phenomenon that is being studied (Barbie, 2007).The researcher was able to gain new insights, develop new concepts or perspectives about the phenomenon and discover new problems that exist within the said phenomenon. The researcher was also able to generalize findings to a larger population.

Target Population

The target population was therefore 112 employees working in the respective project management offices for the banks.

Sample and Sampling Technique

According to Cooper and Schindler (2006), a sample size of 30% is a good representation of the target population. Patton (2002), says that the sample size depends on what one wants to know, the purpose of the inquiry, what is at stake, what is useful, what credibility and what can be done with available time and resources. Therefore a proportionate sample size of 34 respondents which is 30% of the population was selected.

Table 1: Sample Size

Stratum	Target Population	Percentage (%)	Sample size
KCB	15	30	5
Equity Bank	40	30	12
Coop Bank	30	30	9
Stan Chart	17	30	5
Barclays	10	30	3
Total	112	30	34

Data Collection Instruments

The study used primary data which was collected by use of self-administered questionnaires. The questionnaires included structured and unstructured questions. Denscombe (2007) observed that,

a questionnaire defines the problem and the specific study objectives of a study. Questionnaire items may be closed ended or open ended type. Closed ended questions allow specific types of responses such as yes, no and likely scales. Open ended questions allows the respondents to give responses as they wish.

The structured questions were used in an effort to conserve time and to facilitate an easier analysis as they are in immediate usable form. The unstructured questions were used to encourage the respondents to feel free to elaborate and not feel restricted.

Data collection Procedure

The study used a drop off and pick up later method to administer the questionnaires to the sampled respondents. According to Glicken (2008), the use of Drop-off/Pick Up (DOPU) method results in significantly high response rates. DOPU technique is also preferred as it is economical, and will save time.

Data analysis and presentation

The type of data analysis tool used is dependent on the type of data, that is; is the data qualitative or quantitative? (Babbie, 2007) Qualitative data was checked for completeness and cleaned up ready for data analysis. In processing the data content analysis was used. Content analysis is majorly a summarizing, qualitative analysis of data that greatly relies on the scientific method, which include attention to objectivity, inter subjectivity and priori design.

The quantitative data in the research was analyzed by use of descriptive and inferential statistics by use of Statistical Package for Social Sciences (SPSS).Descriptive statistics such as mean, frequency, standard deviation and percentages were used to profile sample characteristics and major patterns emerging from the data .Further, correlation analysis was used to establish the relationship between the dependent and independent variables.

Results from qualitative data was presented in prose form while quantitative data was presented in form of tables and figures. Figures will include bar charts and pie charts

DATA ANALYSIS AND INTERPRETATION OF FINDINGS

Response Rate

This study had a sample of 34 respondents out of which 29 responses were obtained. This represented an 85.29% response rate. According to Babbie (2007) any response of 50% and above is adequate for analysis thus 85.29% formed an acceptable basis for drawing conclusions.

General Information

As part of the general information, the respondents were asked to indicate their age bracket, level of education and working experience.

Table 2: Characteristics of Respondents

Variable	Category	Frequency	Percentage
Age Bracket	Below 30 years	6	20.69
	30 to 40 years	18	62.07
	Above 40 years	5	17.24
Level of Education	Post graduate	17	58.62
	Bachelor	8	27.59
	Other (certificate, diploma)	4	13.79
Working Experience	Less than 2 years	3	10.34
	Between 2 to 5years	7	24.14
	Between 5 to 10 years	5	17.24
	Over 10 years	14	48.28

Table 2 above shows the frequency distribution of the general bank industry information as indicated

by the respondents. The information is organized with the age bracket starting, followed by their level of education and then the working experience. From the findings, majority of the respondents (62.07%) were aged between 30 to 40 years followed by those who aged below 30 years with 20.69% of all the respondents and finally, those aged above 40 years made 17.24% of the respondents as well.

In addition, 58.62% of the respondents indicated that their highest level of education was postgraduate education, 27.59% indicated bachelor's degree level while 13.79% indicated they were below degree level. Most of the respondents therefore indicated that their highest level of education was postgraduate education.

Further, 48.28% of the respondents indicated that their working experience in the institution was over 10 years, 24.14% indicated it was between 2 to5 years, 17.24% indicated it was between 5 to 10 years while 10.34% indicated it was less than 2 years. Majority of the respondents clearly indicated that their working experience in the institution was over 10 years.

Successful project completion

The question requested the respondents to rate the extent to which the stated aspects project management were used to measure successful project completion in their organization. The following findings were obtained;

Table 3: Extent to which certain aspects of project management are used to measure successful project completion

	Mean	Std. Deviation
Timeliness of the project	2.176	1.018
Expenditure within budget	2.705	1.020
Delivery of the project within scope	3.029	.750
Meeting customer expectations	3.323	.719

According to the findings, the respondents indicated with a mean of 3.323 and a standard deviation of 0.719 that in measuring successful project completion meeting customer expectations was moderately used as a measure in their bank. Additionally, respondents indicated with a mean of 3.029 and a standard deviation of 0.750 that delivery of the project within scope was moderately used as a measure of successful project completion in their bank. The respondents also indicated with a mean of 2.705 and a standard deviation of 1.020 that expenditure within budget was used lowly as a measure of successful project completion in their bank. The respondents also indicated that completion within timeline was used lowly as a measure of successful project completion in their bank with a mean of 2.176 and a standard deviation of 1.018.

a) Project Management Software

The study sought to find out the influence of using PMS in project management on successful project completion within the Kenyan banking industry.

Use of Project Management Software

The first question sought to find out to whether the respondents used PMS for project management in their organizations.

From the findings 86.12% of the respondents indicated that PMS was used for project management while 13.88% of the respondents indicated that PMS was not used for project management. From the findings it is clear that majority of the respondents indicated that PMS was used for project management in their banks.

Influence of Project Management Software on successful project completion

The question was requesting the respondents to indicate whether PMS influences successful project completion in their institution.

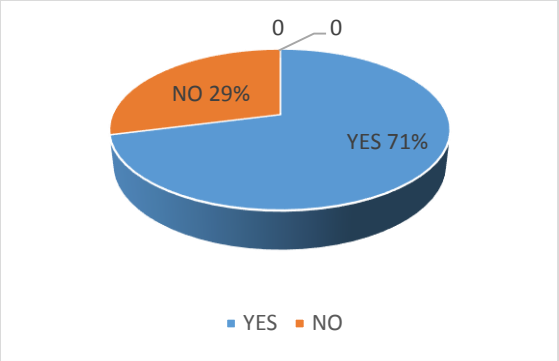

Figure 1. Rating on Influence of PMS on Successful Project Completion

From the findings, 70.80% of the respondents indicated that PMS affects project success while 29.20% of the respondents indicated that that PMS does not affect successful project completion. This shows that PMS influences project success in their institution. The respondents further indicated that PMS gives control on project milestones which the project members are guided by.

Aspects of Project Management Software

The researcher asked the respondents to indicate the extent to which the certain aspects of project management when supported by PMS influence successful project completion in their Bank. The findings were as tabled below;

Table 4: Extent to which certain aspects of Project Management when supported by PMS influence successful project completion

	Mean	Std. Deviation
Project planning	4.147	.916
Project scheduling	3.794	.904
Project task management	3.264	1.250
Project cost control	4.058	.768

The respondents indicated with a mean of 4.147 and a standard deviation of 0.916 that when PMS was used for project planning, the influence on successful project completion was to a great extent. The respondents also indicated with a mean of 4.058 and standard deviation of 0.768 that use of PMS for project cost control influences successful project completion to a great extent. They further indicated with a mean of 3.794 and a standard deviation of 0.904 that use of PMS for project scheduling influences successful project completion to a moderate extent. In addition, the respondents indicated with a mean of 3.264 and a standard deviation 1.250 that use of PMS for project task management influences successful project completion to a moderate extent.

b) Document Management Systems

The study sought to assess the role of Document Management Systems and successful project completion in the Kenyan banking industry.

Use of Document Management Systems

The question in this section requested the respondents to rate their organization' use of DMS in project management.

According to the findings, the respondents' ratings on the use of DMS in project management in their banks were 64.7% moderate, 17.6% low, and 5.9% high, the same percentage rated it as very high and also very low. From these findings, the researcher deduced that use of DMS in project management in the Kenyan banking industry was moderate.

Influence of using Document Management Systems in project management on successful project completion

The respondents were requested to indicate the extent to which Document Management Systems when used in project management influence successful project completion in their organization.

According to the findings, 38.2% of the respondents indicated that use of DMS in project management influences successful project completion in

their organization to a very great extent while another 35.3% of the respondents indicated to a great extent. This was in comparison to 11.8% who indicated to a moderate extent, 8.8% to a low extent and 5.9% to no extent at all. From these findings, we can deduce that use of Document Management Systems influences successful project completion in their organization to a great extent.

Functionalities of Document Management Systems

The question in this section requested the respondents to indicate the extent to which use of DMS in project management to support the stated functionalities influence influences successful project completion in their Bank. The results were as tabled below.

Table 5: Extent to which use of DMS in project management to support document handling functionalities influence influences successful project completion

	Mean	Std. Deviation
Document library	4.264	.782
Document collaboration	4.176	.750
Document update and version control	3.382	.690
Document access control	3.764	1.006

From the findings, the respondents indicated with a mean of 4.264 and a standard deviation of 0.782 that using DMS to support a document library for projects influences successful project completion in their Bank to a great extent. Additionally, the respondents indicated with a mean of 4.176 and a standard deviation of 0.750 that using DMS to support document collaboration in projects influences successful project completion in their Bank to a great extent. Further, the respondents indicated with a mean of 3.764 and standard deviation of 1.006 that using DMS to support document access control for project documentation influences successful project completion in their Bank to a moderate extent. Also, the respondents indicated with a mean of 3.382 and a standard deviation of 0.690 that using DMS to support document update and version control for project documentation influences successful project completion in their Bank to a moderate extent.

Regression Analysis

A multivariate regression analysis was used to establish the relationship between the dependent and the independent variables. The multivariate regression model was;

$$Y = \beta 0 + \beta 1X1 + \beta 2X2 + \varepsilon$$

Where: Y = Successful project completion; β0 = Constant Term; β1 and β2, = Beta coefficients; X1= Project Management Software; X2= Document Management System and ε = Error term

Table 6: Model Summary

Model	R	R Square	Adjusted Square	RStd. Error of the Estimate
1	.709[a]	. 503	.483	.51430

a. Predictors: (Constant), Project Management Software, Document Management System

The two independent variables that were studied, explain 48.3% of successful project completion within the Kenyan banking industry as represented by the R^2. This therefore means that other factors not studied in this research contribute 51.7% of successful project completion within the Kenyan banking industry.

Table 7: ANOVA

Model		Sum of Squares	df	Mean square	F	Sig.
1	Regression	26.000	2	6.500	24.574	.000[b]
	Residual	25.657	26	.265		
	Total	51.657	28			

The significance value is 0.000 which is less that 0.05 thus the model is statistically significant in

a. Dependent Variable: successful project completion

b. Predictors: (Constant), Project Management Software, Document Management System

predicting how Project Management Software and Document Management System influence successful project completion in the Kenyan banking industry. The F critical at 5% level of significance was 2.4472. Since F calculated (24.574) is greater than the F critical, this shows that the overall model was significant.

Table 8: Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.505	.356		1.421	.159
	Project Management Software	.334	.094	.442	3.550	.001
	Document Management Systems	.290	.075	.292	3.865	.000

a. Dependent Variable: Successful project completion

The regression equation was;

Y = 0.505 + 0.334 X1 + 0.290X2 + 0.51430

The regression equation above has established that taking all factors into account (Project Management Software, Document Management System,) constant at zero the successful project completion within the Kenyan banking industry will be 0.505 units. The findings presented also show that there is a positive significant relationship between Project Management Software and successful project completion within the Kenyan banking industry as shown by a coefficient of 0.334 (p-value=0.001). This shows that a unit increase in use of Project Management Software in project management would lead to a 0.334 improvement in successful project completion within the Kenyan banking industry.

Further, the findings show that there is a significant positive relationship between use of Document Management Systems in project management and successful project completion within the Kenyan banking industry as shown by a coefficient of 0.290 (p-value = 0.000). A unit increase in use of Document Management Systems in project management would lead to a 0.290 improvement in successful project completion within the Kenyan banking industry.

This infers that use of use of Project Management Software and use of Document Management Systems are significant.

SUMMARY OF FINDINGS

The purpose of this study was to assess the influence of ICT on successful project completion in the Kenyan banking industry. The study findings were established from 29 individuals that responded. Out of those who responded 18 respondents (60.07%) were aged between 30 and 40 years followed by those who were aged below 30 years who were 6 (20.69%) with another 5 respondents (17.24%) aged above 40 years. Additionally, 17 of the respondents (58.62%) indicated that their highest level of education was postgraduate education, 8 indicated bachelor's degree level (27.59%) while 4 indicated below bachelor degree level (13.79%). Moreover, 14 of the respondents indicated that their working experience in the institution was over10 years (48.28%), 7 indicated it was between 2 to 5 years (24.14%), 5 indicated it was between 5 to 10 years (17.24%) while 3 indicated it was less than 2 years (10.34%).

a) To what extent does use of Project Management Software in project management influence the successful project completion?

The study established that in most of the organizations PMS was used in project management to support certain aspects of project management. The study also established that use of PMS for project management in the Kenyan banking industry had positive significant influence on successful project completion. With regard to aspects of PMS, the study established that use of PMS for project planning and project cost control influence successful project completion to a great extent. Use of PMS in Project scheduling and project task scheduling had a moderate influence on successful project completion. Marti & O'Brien (2005), argued that Project Management Software is used to make the work of a project manager easier and more efficient by providing applications to aid planning, tracking of activities, managing project costs and monitoring schedules

b) To what degree does use of Document Management System in project management influence the successful project completion?

The study established that the extent to which Document Management Systems influence successful project completion in their organization was great. Centralized digital information management is used to support project management, management and distribution of project information and to promote cooperation in the project delivery process. Several commercial computerized tools have been created for document management and this tools have been adapted across industries at a high rate (Sulankivi, 2003).

The study established that use of a document library affected successful project completion in the Kenyan banking industry to a very great extent. Projects involve a lot of documentation which need a storage. Document collaboration also affects successful project completion to a great extent Ability to have a central repository where different stakeholders can work on shared documents was found to be an important need in project management. Further, the study found that document access control and document update and version control affects successful project completion in the Kenyan banking industry to a moderate extent.

Conclusion

The objective of this study was to examine the influence of ICT on successful project completion in the Kenyan banking industry. Based on previous studies, independent variables were expected to have positive relation with successful project completion. The output given from the findings indicate that there is a significant positive relationship between independent variables namely Project Management Software and Document Management Systems in the Kenyan banking industry.

The results also revealed that, Project management Software and Document Management Systems in project management have positive relationship with successful project completion in the Kenyan banking industry.

Recommendations

Given the role played by ICT components; PMS, DCTS, on successful project completion, this study recommends immediate enhancement of these aspects to ensure that in future successful project completion rate is higher. This can be done by holding meetings with project management offices to assess the level of use of PMS and DMS in project management so that the teams can devise ways of enhancing their use together.

The study established that the extent to which PMS and DCTs influences successful project completion in their organization was great. The study therefore recommends that such banks should invest in this tools to improve successful project completion rate.

It was established that in some banks there is no formal analysis of successful project completion. This may lead to challenges in measuring project deliverables and lack of accountability for projects

done. The management should create ways of assessing whether projects were successfully completed or not, this would increase the success rates for the projects undertaken by the bank.

Recommendations for Further Studies

This study was limited to 5 large banks in Kenya. This study therefore recommends further studies in other leading banks in Kenya as well as the banking industry in Africa. Further, the study was also limited to selected components of Project Management Software and Document Management Systems, there is need for further studies in other ICT components to make more informed and valid conclusion regarding the influence of ICT in successful project completion within the Kenyan banking industry.

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