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CHALLENGES FACING DIGITIZATION PROJECTS IN KENYA: CASE OF IMPLEMENTATION OF NATIONAL LAND INFORMATION MANAGEMENT SYSTEM

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Abstract

Purpose: Technology has been the avenues used to bridge various challenges public service delivery. The government of Kenya has invested heavily in land digitization process in order to eradicate the perennial challenges in land management, and promote a conducive economic environment for land transactions and management. The general objective of the study was to establish the influence of challenges facing the implementation of land digitization projects of the Kenya, with emphasis on the Ministry of Lands, Housing and Urban Development NLIMS project.

Methodology: A descriptive survey research design, mixture of both qualitative and quantitative research approach was adopted. A target population of 139 staff, management and vendors of NLIMS project at all land registries implementing NLIMS project were sampled. Collected primary data was analysed using qualitative method using descriptive and inferential statistical.

Results: A significance strong positive correlation between; governance, budgetary support and ICT infrastructure; and NLIMS project implementation was found. In addition, a unit change in governance, budgetary support and ICT infrastructure contributes significant factor change in NLIMS project implementation. The study concludes that governance, budgetary support and ICT infrastructure are the main challenges facing NLIMS project implements due to significant influence, and Stakeholders involvement is not a challenge at implementation phase.

Unique Contribution to Theory, Policy and Practice: The study recommends that the government should conduct training on leadership and change management to project managers and leadership or project team in general. The government should further strengthen its institutional framework to reduce the effect of leadership changes within its institutions and ensure ongoing projects are not affected. The government should avail more funds towards NLIMS project

Key words: *Digitization Project, Governance, ICT Infrastructure, Stakeholders Involvement, Budgetary Support.*

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1.0 INTRODUCTION

Land has been close to human civilization ever since time in memorial, classical economist have recognized it as a key factor of production (Ayres & War, 2009), wars have been fought over it, it has determined the future of many nation, and hardly does a day go by without claims of land grabbing in the country. According to Ayres and War (2009) land is a factor of production, that when utilized will promote economic growth. The Government of Kenya (GoK) has realizes this fact and has continuously attempted to improve land transaction operations in the country through use of legislations and Technology, dubbed National Land Information Management System (NLIMS) to increase transparency, eliminate corruption and improve the ease of doing business (Government of the Republic of Kenya, 2013).

The project have had mixed outcomes, with land related problems still a big issue within the country. Land ownership and its use is a receptive issue in Kenya and has been at the core of several conflicts in the country's history resulting to loss of lives and property in many parts of the country (Espen Sjaastad, 2007). Land pressure has further been compounded by ever increasing population and economic development needs which has led to criminal ways of acquiring title with the aid of corrupt officials and encroachment of gazetted and water catchment areas exacerbating the effects of climate change among other calamities as conflicts, loss of lives and property (Swazuri, Kuria, & Nyamasage, 2016).

Attempts have been made to determine cause(s) of land problems in Kenya. Anderson, Chipeta, Hallaq, Rothman, and Christoplos, (2013); World Bank Economic Report (2013) and Heeks (2010) have unanimously attributed land menace to weak and poor land administration system – characterised by paper-based record management - a scenario that has generated non reconciled millions of paper records both at the headquarters and the field offices distributed country-wide (Nyongesa, 2013). According to Okoth, (2005) land administration process in Kenya has become inefficient, time consuming, unreliable, restrictive, occasioned repetitiveness, unaccountable and costly, undermining efficiency and effectiveness in service delivery. In addition, the manual land administration system consequently has gradually deteriorated service delivery to citizens and accumulated large volumes of paper records to an unmanageable situation that is not tenable in this era of reforms and constant demands for citizen focused services.

In order to address these daunting challenges owing to Paper-Base Systems the Government of Kenya - through the Ministry of Land embarked on the effort to computerize its functions. The NLIMS was conceived in the year 2008 as the only solution to the foregoing challenges. According to Smith (2009) digitization would enhance effectiveness and efficiency in information/records management. Mark Zandi (2013) also noted that successful e-Governance initiatives or digitization programmes are focused at ensuring better services for the citizens by ensuring convenience, efficiency, transparency and reliability. In addition, it would address duplication of work, reduced communication costs, increased transparency in functioning of various government departments, and prompt citizen services.

The NLIMS is in the process of implementation and is yet to bear any fruit. However, the project had been hampered greatly, and some of the claims that have been reported are, according to Nyakundi (2012), is the need to re-engineer land transaction processes to work with the digitized records (in place of physical records) to provide for a complete solution, financial constrain and

leadership. Therefore, this study explored these hurdles and determined challenges facing digitization project and their effects on implementation of the same.

Statement of the Problem

Digitization is purposed to eliminate inefficiencies of manual transactions. Currently the Government of Kenya Ministry of Land's central registry is undertaking up to 4000 transactions in a month, which involves physical files conversion to digital form. There are currently no local studies done on the cost of managing and more particular challenges of this exercise. According to Megill (2009), 90% of land information memory exists on paper, and this information is fragmented and risk of loss or leakages in the case of fire, theft, vandalism or misfiling. In addition, according to Megill (2009), cost on an average of managing manual land system is Ksh 1,770.00 per file documents. This figure is lower compared to developing countries that have fully digitized their operations. In addition, finding indicates that it cost Ksh 10,621.00 on average to trace a misfiled or missing documents and Ksh. 19,473.00 to reproduce a lost file or document in the land registry. All this being events common in the current land registry. Attempts to deal with the land problems by the GoK and other stakeholders: land legislation, demarcation, rationalisation and issuance of land titles, have not yielded any meaningful solution to the deeply rooted problems and it's still possible for many Kenyans to own land through criminal ways of falsification or unauthorised modification of land records and transactions (Njuguna & Baya, 2016). As an irretrievable solution, the GoK in 2007 resolved to automate all land records and transactions by developing and deploying a National Land Information Management System (NLIMS).

The NLIMS as a digitization project is capable of holding and supporting vast and diverse data sets on land ownership and transactions digitally. Nyongesa (2013), affirmed that development of the NLIMS included the digitization of all paper land records held by the ministry both at its headquarters and in its field offices countrywide. This therefore, implies NLIMS is designed to support a robust infrastructure linking the various producers and users of land records. Although anecdotal evidence indicates that the project has been implemented fairly well, no scientific evidence exists to demonstrate the challengers that have hampered the project. In addition, no study has documented the effect these challenges have on the implementation of NLIMS project. This study filled this important knowledge gap.

Objectives of the Study

The general objective of the study was to establish the influence of challenges facing the implementation of land digitization projects of the Kenya, with emphasis on the Ministry of Lands, Housing and Urban Development NLIMS project. To achieve this, the study was guided by the following specific objectives:

(i) To assess the influence of Governance on implementation of NLIMS digitization projects in Kenya.
(ii) To determine the influence of Budgetary support on the implementation of NLIMS digitization projects in Kenya

(iii) To find out the influence of ICT infrastructure on the implementation of NLIMS digitization projects in Kenya
(iv) To analyse the influence of Stakeholder involvement on the implementation of NLIMS digitization projects in Kenya.

2.0 LITERATURE REVIEW

Theoretical Review

Several theories have been put forward by researches in management practice to guide the same. Project management, being a distinct but related body of managerial practise; has drawn its theories mainly from management practices. This study was guided by governance theory, agency theory, stewardship theory, infrastructure theory and shareholders theory.

Governance Theory

Management scholars have drawn, and considerably adapted, ideas from policy research in political science to develop theories explaining the good governance of corporations (Bevir, 2013). In its most general form, corporate governance is defined as the set of rules, relationships, systems and processes by which authority is exercised and controlled in organizations. According to Clegg et al (200), corporate governance influences how organizational objectives are set and achieved and fosters self-regulation within a greater context, without determining every action of organizational actors. Hence, "governance is ultimately concerned with creating the conditions for ordered rule and collective action" (Gerry, 1988).

Agency theory assumptions have been highly influential in shaping corporate governance systems and follow a 'traditional' finance and economics perspective (Eisenhardt, 1989). Agency theory implies that the principal has difficulties in motivating the agent to act in the principal's best interests, a common example is the separation of ownership and control, which is a fundamental problem in organizations (Jensen & Meckling, 1976). This separation is the result of absent or distant owners/shareholders (i.e., principals), employing professional executives (i.e., agents) to act on their behalf (Eisenhardt, 1989). As principals need to provide agents with some level of decision-making authority, issues related to conflict of interest and moral hazard, due to asymmetric information, may arise (Williamson, 2010). In line with project management, the fundamental assumption underlying this theory is that an agent (project managers) may be self-interested and act opportunistically, rather than purely in the interest of the principal/s or agents and principals may differ in their risk attitudes. To mitigate these problems, the principal will incur 'agency costs' (Jensen & Meckling, 1976). These costs arise from the need to create outcome-based incentive systems that enable the alignment of agents' and principals' interests (e.g., performance-based contracts).

Resource Dependence Theory

Resource dependence theory was developed by Pfeffer and Salancik in 1978 (Thompson, 2011). The theory holds that a firm's resource base provides crucial connection points when organizations engage in exchanges and transactions, and plays a vital role in achieving organizational success (Pfeffer & Salancik, 1978). According to the theory, resources can take a variety of forms, all of which can be argued to add to the 'capital' of a company. The variety of

available resources includes financial recourses, material recourse, machinery recourses and human resources, which can be unique to an organization, and in turn, affect its organizational performance (Thompson, 2011).

In project management, resource dependence theory allows us to think of the varied needs that organizations have at different stages of their life cycle and how resources can be used to overcome organizational challenges. According to Thomas (2004) the theory offers valuable insights into the allocation, prioritization and facilitation of organizational resources and suggests that organizational success depends on the organization's ability to control interdependent external and internal resources.

The "Fit-Viability' Theory

The fit-viability theory is used to assess the suitability of the digitized project that requires big data system to manage for example NLIMS in Kenya. The theory was originally proposed by Tjan A. K. in 2002 as a model for evaluating the adoption of the Internet by organizations (Tjan, 2001). According to the theory, 'fit' measures the extent to which new technology tools are consistent with the core competence, structure, value and culture of the adopting organization. On the other hand, theory explains that viability measures the extent to which an organization's environment is ready for the new technology tools and applications. The environmental factors include economic costs and benefits, users' readiness to apply the technology and the maturity of the organizational structure to support the technology (Tjan, 2001).

In the present study, fit measured the extent to which the salient features of big data such as volume, velocity, variety, and veracity suit the essential tasks associated with land records management at the Ministry of Land, Housing and Urban Development in Kenya. From this theory, it is possible to measure the financial or sentimental value attached to land records and transactions in Kenya (Nyongesa, 2013). On the other hand, viability measured the factors which influenced the success with which big data systems such as the NLIMS are implemented. These included economic, social, technical, infrastructural, quality and other human factors. The performance of the NLIMS is facilitated by a high technological fit and organizational viability leading to a high performance exemplified by the usability of the system and user information satisfaction.

Stakeholder Theory

Stakeholder theory challenges agency assumptions about the primacy of shareholder interests, and is based on a socially oriented perspective according to (Jones & Wicks, 1999). The theory argues that projects should be managed in the interests of all its stakeholders, such as employees, suppliers, customers, local communities and the environment, as well as society at large. Stakeholder theory, therefore, suggests that conflicting interests and claims of different organizational stakeholders need to be balanced (Donaldson & Preston, 1995). These claims can range from purely financial objectives (e.g., return on investment) to corporate social performance measures (e.g., the organization's attractiveness as an employer and its generation of goodwill).

Meeting the interests of all stakeholders can be challenging, since social goals have the potential to constrain financial performance. Hence, the underlying governance mechanisms must find a

way to balance this paradox. In stakeholder theory, performance depends on the organization's understanding of: key business and competitive drivers; its capacities for strategic thought, and its communication and leadership skills in relation to all stakeholders. Following stakeholder theory, project governance is an essential strategy to assist project teams understand, and respond to, various stakeholder groups (Blair, 2005).

Conceptual Framework

Based on the theories reviewed, the developed conceptual framework depicts the conceptualized relationship or influence of independent variable (challenges facing digitization projects) and the dependent variable (implementation of NLIMS Project). The study abstract the relationship between these variables to be expressed in a 'casual-effect' manner as illustrated on Figure 2.1.

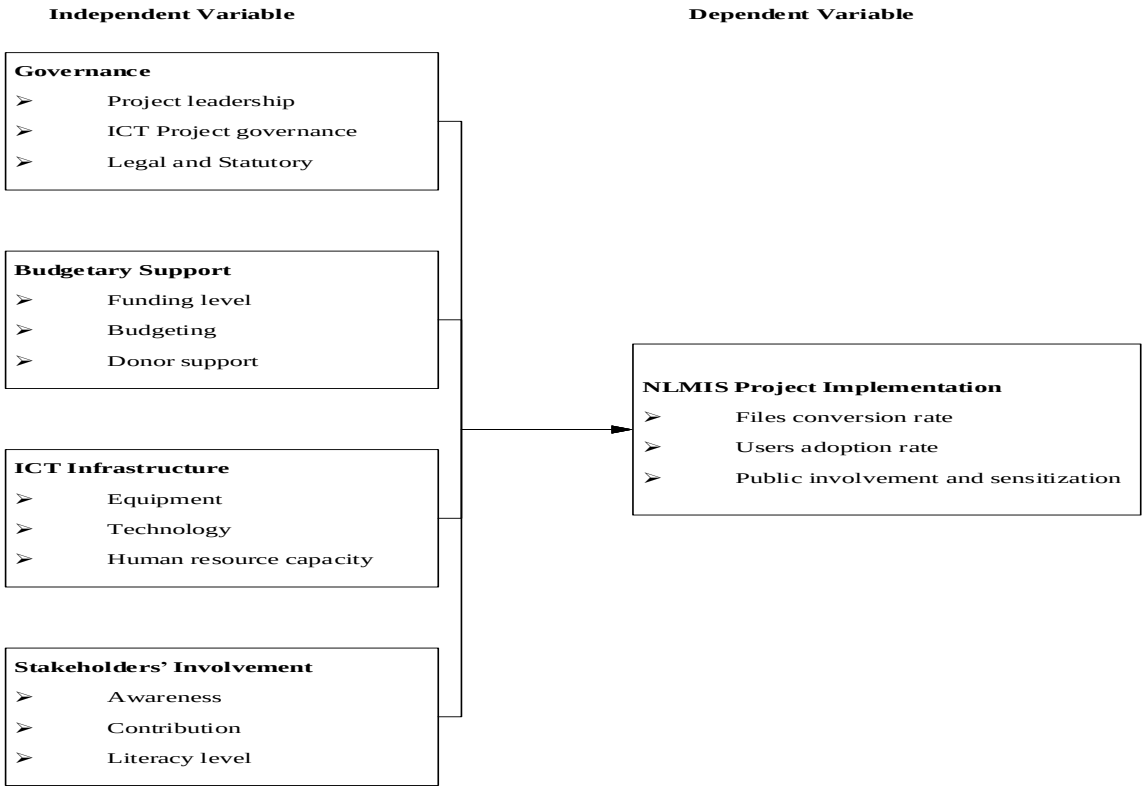

Figure 1: Conceptual Framework

Empirical Review

Governance and Implementation of Land Digitized Project

Digitization project seeks a major shift in policy areas ranging from land record maintenance, delivery and updating to re-arranging institutional and legal instruments, all which forms the scope of politics and governance influence. The politics and governance in a digitization project affect the success of the digitization project. In this regards Bailey-Hainer and Urban (2004) studied the Colorado digitization program to establish the practices that were involved in the project. The study established that the first step in the Heritage Colorado grant was to do an environmental scan of the technology and knowledge at the participant institutions. To achieve

this there was a need to marshal the political support to redraft favourable laws. The redrafting of laws paved way for environmental scan, which was used to guide the metadata working group in developing standards.

A study by Belcher and Sexton (2008) had the purpose of presenting the process, challenges and lessons learned from carrying out a small digital project to create a web resource of unique historic materials related to crime in New York City. Experiences from project administration, including management of a combination in house and outsourced digitization and metadata were discussed. Formation and management of the resulting web resource was explained, which was the product of a creative amalgamation of commercial and open source software (Belcher & Sexton, 2008). Challenges encountered were presented with suggestions for practical solutions and considerations for future projects. The study findings revealed that the project was successful due to political support and good governance which supported in-house digitization, delivered required hardware and software infrastructure, having scanning specifications and file naming conventions.

The study by Craig and Schindler (2008) revealed that before the digitization project, the project directors had gained some digital experience by scanning special collections materials requested by patrons, and electronic reserve materials for faculty. The project directors also had library school training and experience in digitization and preservation management. The study also established that The METRO digitization grant provided funds to purchase a large format good quality scanner with Silver fast AI scanning and calibration software. Also purchased was an IT8 colour calibration target to assure good quality digital masters (Belcher & Sexton, 2008). The library already had updated PC computers loaded with commercial software sufficient for digital object and metadata creation and storage.

A study by Rafiq and Ameen (2013) about digitization in university libraries of Pakistan revealed that having digitization policy, engaging in digitization best practices and having a criteria and standards for digitization and having well laid down digitization priorities were important practices. Other practices included establishing clearly the subject content of digitized resources and having clear goals of digitization activities.

The study by Belcher and Sexton (2008) documents that file-naming conventions are very important for managing all digital object collections. Tracking and identifying digital objects was eased by following a logical file naming convention. Some programs only allow a certain number of characters in file names. In addition, carefully controlled file-naming conventions were useful for sorting like objects together in search and browse results. For this project a file naming convention was developed that resulted in “readable” and predictable names, based on information about the collection from which the original artefact came, and indicators of the front, back and related original documents.

Budgetary Support and Implementation Digitized Land Project

Financial recourse has been observed by many scholars as the major challenge for digitization project across the globe. This is because of the budgetary requirement for implementing such projects. To commence with, a study by Bailey-Hainer and Urban (2004) established that one of the main problems for digitized project is funding. Funds are needed for acquisition of ICT

infrastructure and training of employees. The study reported that many digitised project depended on internal funding mainly from government. Due to low budgetary allocation, many projects run behind schedules.

In a study, by Liu (2004), of the best practices, standards and techniques for digitizing library materials in USA established that the main technological issues, problems and concerns for libraries that were digitizing collections concerned methods for capturing printed information for use in a digital setting. The equipment being used for the process in many instances was unreliable providing low quality images, which was a challenge in many digitization projects. Much attention focused on the reliability of equipment and software, which Liu (2004) study revealed were obsolete. The recommends that modern state of art infrastructure was need for successful implementation.

Han (2010) in a study of digitization projects in Afghanistan aimed at addressing the digitization tasks, workflow, challenges, and solutions. Persistent identifiers, file naming conventions, page-naming rules, and a digitization management system were discussed in detail since they were critical to the success of the project. The study analysed the unique challenges for a long-distance collaboration on digitization. The study found that several components such as persistent identifiers, file-naming conventions, page-naming rules, and digitization management system were critical to the success of the project (Han, 2010).

A study by Iwhiwhu and Eyekpegha (2009) on digitization of Nigerian university libraries applied both qualitative and quantitative methods. The respondents constituted 40 professional and para-professional staffers drawn from universities. Findings revealed that the libraries lacked written policy on digitization, inadequate ICT infrastructures and manpower, fund, and inadequate government support (Iwhiwhu & Eyekpegha, 2009). Users were not given user education/digital literacy to enable them adequately utilize the available digitized resources and services, thus posing challenges to effective information delivery.

ICT Infrastructure and Implementation of Digitized Land Project

For digitization projects to be a success, equipment and infrastructure must be available and up to date. Everything needed for digitization in form of equipment and infrastructure include electricity, quality scanners, storage units and IT infrastructure (Sabbagh, Friedrich, El-Darwiche, & Singh, 2013). Communication is another important aspect in digitization. Communication serves four major functions within a group: control, motivation, emotional expression, and information. In a digitization project, teams primarily focus on two functions: motivation (what is to be done, how well we do, what we can improve) and information (what was done, make decisions by transmitting data to identify and evaluate alternatives).

Training is another important process. Building the digitization infrastructure and implementing digitization projects require technical expertise (Koelling, 2004). To ensure a strong start for the project, it is critical to have digitization training for all staff to understand the fundamentals of digital imaging. The training should include topics such as basics of digital images, scanning modes, file naming conventions, image file formats, an overview of image compression, resolution targets, and quality control. The staff members are then expected to go back and train other staff.

The primary goal of any digitization project is to preserve and provide access to the materials and records. In digital imaging, there is no difference in terms of digitization standards and best practices. Standards should be set for the project and best practices should be documented and followed during the implementation process (Yakout, Adly, & Nagi, 2006). This requires state of art infrastructure to implement. According to Hughes (2004), modern hardware and software would yield quality in digitized project. For instance, in scanning and quality control, there should be workers responsible for this important aspect. ICT Infrastructure will enhance quality control (QC) which in turn affects files integrity, file readability, image quality, directory structures, and file naming.

Another similar finding on ICT infrastructure is given by Manzuch's (2009) study that established that public institutions that have implemented digitization projects, 76,66 percent did not have adequate infrastructure, 15.00 percent of the organizations had adequate infrastructure, and 8.33 percent could not estimate whether they had adequate infrastructure for digitization or not. The study by (Manzuch, 2009) also revealed that institutions which digitize records or material on their own need effective and up to date infrastructure not the old, inadequate or inexistent infrastructure.

Stakeholders Involvement and Implementation Digitized Land Project

Digitization of national and library resources poses a great deal of challenge to the major stakeholders, that is, the management/government, employees and users (Mwirigi & Kinyanjui, 2012). The organization or government has to source for funds for the digitization project. Management of the digitization project entails policy initiation, setting priorities and planning. These are challenging tasks for the project management. The project management needs to consult other successful government or entities that had digitized their materials so as to learn from their experiences. This guides a lot while formulating policies on the digital project. A planning committee has to be set up. It is the responsibility of this committee to draw plans and budget for the project.

The project management also needs to prioritize the different activities involved and assign each task to a committee. Time limits should be assigned for completion of each task (Kenney & Rieger, 2000). The task of carrying along all the staff and guiding employees and users can be challenging. Some of the staff likes to resist change, particularly those that are not computer literate. It is essential for the project management to explain the essence of the project to them and arrange to retrain the employees so that they can participate in the project and remain functional in a digital office (Grout, Purdy, & Rymer, 2001). Some of the content users definitely find it difficult to search for materials in the digital terrain. It is good for public servants to be available to render assistance.

Research Gap

From the reviewed literature and critiques of relevant studies, research up to this point indicates that challenges facing digitization projects vary based on project type and the organization setting (Han, 2010; Kenney and Rieger, 2000; Swasuri, 2014) probably due to background diversity of implementing organization. What current researchers have failed to reveal is the influence of these challenges and whether or not there is a causal relationship between challenges

facing digitization and implementation of digitized projects specifically state sponsored projects. To bridge this important gap, the study did not only try to establish the relationship between challenges digitization project and project implementation, but also explained the nature of their influence specific to implementation process of NLIMS project in Kenya.

3.0 RESEARCH METHODOLOGY

The study used a descriptive survey research design to allow for the exploration of relationships between variables according to (Gall, Gall, & Borg, 2007). The choice of this research design was informed by the fact that it allowed the researcher to establish and explain the influence of challenges facing digitization projects on project success. In addition, the study employed qualitative and quantitative design approaches. As argued by Thies (2002), one of the major concerns regarding the use of qualitative research in studies involving social or behavioural content is the possibility of researcher bias and influence induced by human persuasion. Therefore, a quantitative descriptive approach helped minimize the potential for researcher bias as well as minimizes the need for subjective evaluation of data as aurgued by (Creswell and Clark,2011).

In research, population refers to an entire group of persons or elements that have atleast one thing in commom (Kumar, 2011). Within the context of this research, the target population comprised all land digitization project vendors, ICT project staffs, ICT authority staffs and ministry of land staffs who are currently attached or working in digitization projects. According to data obtained from National Ministry of Land, the target population is was 139.

Creswell and Clark (2011) noted that sample size is the unit or set of observations drawn from a target population by a defined procedure for the purposes of analysis. However due to small nature of sample size there was no sample size as the study adopted census (Kothari, 2009). To enhance reliability, the study used both primary and secondary data. The instruments of primary data collection were structured questionnaire and interview guides. Rasmussen, Ostergaard and Beckmann (2006) argued that questionnaires are useful for getting in-depth understanding of the issues under investigation rather than measuring those issues. Prior to actual data collection, instruments were subjected to Cronbach's alpha Reliability Tests (Cronbach, 1951) to analyse the internal consistency reliability.

The study used qualitative and quantitative data analysis to draw linkages between the study problem and theory. Specifically, content data analysis of secondary material was done for their relevance, strength and weakness as regards the study questions. Primary data was converted to quantitative and analysed using descriptive statistics with the aid of SPSS to draw inferential and measures of dispersions. The contribution of independent variable on dependent variable was established using multiple correlation analysis at 5% level of significance and 95% level of confidence. The significance of influence was tested using z-test statistics.

4.0 DATA ANALYSIS AND FINDINGS

The study conducted Karl Pearson's coefficient of correlation (Pearson product correlation coefficient) to measure the strength of a linear association between variables. Findings are depicted in Table 1, and indicates that there is a strong positive correlation r=0.613 between

governance and NLIMS projects implementation, statistically significant (P=0.02<0.05) at 95% confidence level; a strong correlation (r=0.565) between budgetary support and NLIMS projects implementation, statistically significant (P=0.02<0.05) at 95% confidence level; very strong positive correlation (r=0.772) between ICT infrastructure and NLIMS project implementation statistically significant (P=0.06<0.05) at 95% confidence level; and a weak correlation (r=0.362) between stakeholders involvement and NLIMS project implementation statistically insignificant (P=0.302>0.05) at 95% confidence level. This finding implies that ICT Infrastructure, Governance and Budgetary Support have significant relationship with NLIMS project implementation, while stakeholders' involvement has insignificance relationship with NLIMS implementation.

Table 1: Pearson Correlation Results

Variables		Project Performance	Governance	Budgetary support	ICT infrastructure	Stakeholders involvement
Project Performance	Pearson Correlation	1				
	Sig. (2-tailed)					
Governance	Pearson Correlation	613(*)	1			
	Sig. (2-tailed)	.02				
Budgetary support	Pearson Correlation	.565(*)	.564(*)	1		
	Sig. (2-tailed)	0.02	.04			
ICT infrastructure	Pearson Correlation	.772(*)	.504(*)	.390(*)	1	
	Sig. (2-tailed)	.006	.001	.004		
Stakeholders involvement	Pearson Correlation	.362	.733(*)	.402(*)	.350(*)	1
	Sig. (2-tailed)	.302	.002	.02	.02	

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

4.1 Regression Analysis

The finding of multiple regression analysis to determine the change effect/factor attributed to dependent variable by unit change in independent variable is depicted in Table 2. The finding reveals a coefficient of determination 'R' square of 0.458 with adjusted R square of 0.433 significance at 0.05 level. This implies that 45.8% of variation in the NLIMS project implementation is explained by variables analysed namely Governance, Budgetary Support, ICT infrastructure and Stakeholders Involvement.

Table 2: Model Summary

Model	R	R Square[b]	Adjusted R Square	Std. Error of the Estimate
1	.0.677a	.458	.433	0.025

a. Predictors: (constant), governance, budgetary support, ICT infrastructure and stakeholders involvement

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Results of Analysis of Variance (ANOVA) is shown in Table 3 and indicates a total variance of 16.593 and F value of 11.338. The higher value of F-statistic (F_{Cal} =11.338 > F_{Cri} = 4.123) denoted that there existed a significant goodness of fit of the model $Y = \beta_0 + \beta_1X_1 + \beta_2X_2 + \beta_3X_3 + \beta_4X_4 + \varepsilon$, implying the used regression model was fit for the study.

Table 3: ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	3.595	4	.928	11.338	.000[a]
	Residual	12.998	69	.016		
	Total	**16.593**	**73**			

a. Predictors: (constant), governance, budgetary support, ICT infrastructure and stakeholders involvement

Finally findings for multiple regression beta coefficient are shown in Table 5, and reveals that, holding all variable under study to a constant zero, NLIMS project implementation would be at 0.454. For the study variables; a unit change in governance would lead to a factor change of 0.429 in NLIMS project implementation; a unit change in budgetary support would lead to a factor change of 0.395 in NLIMS project implementation; a unit change in ICT infrastructure would lead to a factor change of 0.455 in NLIMS project implementation and; a unit change in stakeholders involvement would lead to a factor change of 0.232 in NLIMS project implementation. This finding reveals that the most influential variable that contributes to implementation of NLIMS project is ICT infrastructure, followed by governance and budgetary support. Stakeholder's involvement has insignificance contributing to NLIMS project implementation. Thus, the finding establishes the following regression equation.

$$Y = 0.454 + 0.455X_1 + 429X_2 + 0.395X_3 + 0.232X_4$$

Where: Y – NLIMS project implementation
X_1 – ICT infrastructure
X_2 – Governance
X_3 – Budgetary support
X_4 – Stakeholders involvement.

Table 4: Coefficient Analysis

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	.454	.231		2.522	0.015
	Governance	.429	.009	.320	3.304	0.022
	Budgetary support	.395	.027	.125	4.124	0.012
	ICT infrastructure	.455	.050	.405	3.882	0.002
	Stakeholder involvement	.232	.067	.200	2.124	0.068

a. Predictors: (constant), governance, budgetary support, ICT infrastructure and stakeholders involvement
b. Dependent variable: NLIMS project implementation.

5.0 DISCUSSION, CONCLUSION AND RECOMMENDATION

Discussions

Influence of Governance

Influence of governance revealed that project leadership and change management poses high challenge to implementation of NLIMS project. The leadership challenge could be attributed to the bureaucratic nature of government operation and particularly in decision making. This finding corroborated with Blair (2005), who commented that it's quite cumbersome for public-sector activities/projects to be coordinated internally and externally if governance structure are not clear on leadership and this derail project implementation. In addition, statutory legislations for land management has low challenge to the implementation of NLIMS project due to numerous laws that have been enacted towards land management in Kenya. This finding is in agreement with Bailey-Hainer and Urban (2004) who observed that leadership is needed to marshal the political support to redraft favourable laws that supports implementation. The findings further revealed a significance strong positive correlation between governance and NLIMS projects implementation and a unit change in governance would lead to a significant factor change in NLIMS project implementation.

Influence of Budgetary Support

Influence of budgetary support revealed that government funding is a high challenge to the implementation of NLIMS project as justified by low funding level of the ministry; donor support is a low challenge probably due to fact that land is not a social problem. This finding is in agreement with Belcher and Sexton (2008) who observed that adequate funding has been a challenge to digitization projects. In addition, Bailey-Hainer and Urban (2004) also corroborates the finding by establishing that one of the main problems for digitized project is funding. Budgeting process is a very low challenge on implementation NLIMS project. This finding is also in agreement with Bailey-Hainer and Urban (2004) when reported that many digitised project depended on internal funding, mainly from government, and due to low budgetary allocation, they run behind schedules. Further findings reveal a significant and strong correlation between budgetary support and NLIMS project implementation and a unit change in budgetary support lead to a significant factor change in NLIMS project implementation.

Influence of ICT Infrastructure

Influence of ICT infrastructure revealed that equipment poses high challenge to the implementation of NLIMS project. The finding could be attributed to lack of funds to acquire modern ICT equipment or poor tendering process experienced in most government tender awards. This finding is in agreement with Liu (2004), who found that use of obsolete or unreliable equipment affected digitization process by providing low quality images, a challenge in many digitization projects. As further noted by Nyongesa (2013), the government has made some strides in equipping the ministry with necessary infrastructure however due to funding and local market capacity challenges, the author concurs that there is an equipment gap that still needs to be filled to ensure all registries within the country can support the digital processes. In addition, finding shows that ICT technology is a high challenge to the implementation of NLIMS project. This corroborates with Belcher and Sexton (2008) who reported that in-house

digitization projects lacks required hardware and software infrastructure for scanning specifications and file naming conventions. Conversantly, Han (2010) observation also coroborates the finding by noting that several components such as persistent identifiers, file-naming conventions, page-naming rules, and digitization management system were critical to the success of the project. Further finding showed there is significance and very strong positive correlation between ICT infrastructure and NLIMS project implementation and a unit change in ICT infrastructure would lead to a significant factor change in NLIMS project implementation.

Stakeholders Involvement

Influence of stakeholder involvement revealed that stakeholder awareness is a high challenge on the implementation of NLIMS project due to low project awareness among the stakeholders. stakeholder contribution has a high challenge to the implementation of NLIMS project. This finding is supported by Iwhiwhu and Eyekpegha (2009) who reported that digitization projects lacked written policy on stakeholder's engagement and this has derail its success. In addition, the study also reported that users were not given 'user education/digital literacy' to enable them adequately utilize the available digitized resources and services, thus posing challenges to effective information delivery. Further finding showed a weak insignificance correlation between stakeholder's involvement and NLIMS project implementation and a unit change in stakeholder's involvement would lead to an insignificant factor change in NLIMS project implementation.

Conclusions

The study concludes that governance is a challenge to implementation of NLIMS project. Specifically, project leadership and change management are the major threats. In addition, there are favourable statutory legislations for land management and governance significantly contributes to implementation. For budgetary support, the study concludes that government funding is challenge to the implementation of SLIMS project due to low funding of the ministry. However, donor support and budgeting process are not challenges in implementation of SLIMS projects. Budgetary support significantly contributes to implementation of SLIMS project.IT infrastructure is a challenge to the implementation of SLIMS project with equipment and IT technology being the issues of concern. In addition, human resource is not a challenge and IT infrastructure significantly contributes to implementation. Stakeholder involvement is not a serious challenge, however awareness and contribution being challenges to the implementation of NLIMS project. Stakeholder involvement has low influence on implementation.

Recommendations

The study recommends that the government should conduct training on leadership and change management to project managers and leadership or project team in general. The government should further strengthen its institutional framework to reduce the effect of leadership changes within its institutions and ensure ongoing projects are not affected. The government should avail more funds towards NLIMS project. In addition, the government should lobby for donor support to caution fund constraint. The management should also acquire modern equipment and ICT technology which are compatible and can be easily integrated within the existing framework.

The government can explore the possibility of outsourcing services that rely heavily on specialized technology which require heavy capital investment and expertise in maintaining. Management to conduct awareness and encourage contribution by stakeholders towards implementation of NLIMS project

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