ORGANISATIONAL CULTURE AND IMPLEMENTATION OF ELECTRONIC PROJECT MONITORING INFORMATION SYSTEM IN PUBLIC TERTIARY INSTITUTIONS IN KENYA

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ABSTRACT

This article highlights the influence of organisational culture on implementation of electronic project monitoring information system (e-ProMIS) in public tertiary institutions. It is based on literature review and field research by employing cross sectional descriptive survey and correlational research design. Data was collected using questionnaire from 30 tertiary institutions and a sample size of 162 members of staff selected through stratified random sampling technique. To ensure validity and reliability of the questionnaire, pretesting was conducted. Data was analysed using both descriptive and inferential statistics. The study findings indicated that majority of the Tertiary institutions in Kenya practiced bureaucratic culture followed by innovative culture then supportive culture. Correlational results using Pearson's Product Moment Technique indicated positive and significant coefficients between the indicators of organisational culture and implementation of e-ProMIS in the public tertiary institutions in Kenya. The test of hypothesis showed a statistically significant relationship between organisational culture and implementation of electronic project monitoring information system in public tertiary institutions in Kenya. Based on the research findings the null hypothesis that organisational culture has no significant influence on the implementation of Electronic Project Monitoring Information System in Public Tertiary Institutions in Kenya was rejected and it was conclude that organisational culture has a statistically significant influence on the implementation of Electronic Project Monitoring Information System in Public Tertiary Institutions in Kenya. These study findings imply that for successful implementation of e-ProMIS and other e-government systems, organisational culture is imperative.

Key Words: *organisational culture, implementation, electronic project monitoring information system, tertiary institutions*

INTRODUCTION

The organizational culture has been defined as a pattern of shared basic assumptions that are learned by a group as it solved its problems of external adoption and internal integration that has worked well enough to be considered valid and, therefore, to be taught to new members as the correct way to perceive, think, and feel in relating to those problems (Schein, 2004). Organizational culture is considered to be one of the key elements in both enhancing and inhibiting innovation. Since it influences employee behaviour, it may lead them to accept innovation as a fundamental value of the organization. In the recent times the cultural dimension has been highlighted in most branches of contemporary management studies including supply chain management, ICT management, customer relations management and knowledge management. The concept of culture provides a lens to contextualize implementation of ICT (Anumba et al., 2007). Despite the importance given to culture as a stimulant for innovation, empirical research especially in developing countries remains somewhat limited. This study therefore sought to analyze the link between organizational culture and implementation of e-ProMIS. Bureaucratic, supportive and innovative culture formed the interest of this study.

The rapid technological advancement of Information Technology (IT) industries and globalization has led to increased demand of project management solutions throughout the world as a fundamental force to complete projects within a defined scope, time, and within cost constraints. Most modern project systems deliver innovative solutions and its management process has the latest tools, techniques, systems, and schemes in use. One of these systems is Electronic Project Monitoring Information System (e-ProMIS), which is a Web-Based Project Management System (WPMS) introduced in the mid-1990s. A WPMS is conducted through extranet, which is a private network using internet protocols to transmit information and only accessible by authorised users at different predefined levels (Nitithamyong & Skibniewski, 2011). Project data are stored on centralised servers and a standard web browser is used as a gateway to access, exchange, and share information from remote locations at any time, eliminating the problems that occur in linear communication schemes (Thorpe & Mead, 2001). A basic WPMS is typically aimed at supporting project collaboration and information sharing, but advanced WPMSs also enhance users in searching for specific information or conducting business transactions completely online.

Web-Based Project Management System has been in use in developed countries like United Kingdom (UK), Unites States of America (USA) and Sweden among others. A study conducted in UK revealed that 44 per cent of users were satisfied with WPMS experience but undecided whether to adopt a WPMS on every project; 3 per cent were essentially unsure whether WPMSs are worthwhile, and 1 per cent were unsatisfied and rejected any future use (Nitithamyong & Skibniewski, 2011). AUSA-based survey also revealed that the application of WPMSs had been limited to commercial (41 per cent) and retail projects (31 per cent) (Becerik & Pollalis, 2006). In Sweden, Samuelson (2008) reported in his survey that the majority of practitioners only used WPMSs occasionally although the usage had increased considerably since the year 2010. Nitithamyong & Skibniewski (2011) observed that regardless of the proven advances in technology and the downward trend in the price charged by providers, the slow uptake may be because of unclear understanding among practitioners on how to successfully integrate the WPMS concept in their processes. The above studies show usage of WPMS in developed countries but with varying rates of adoption.

The web-based project management system in Kenya is in form of Electronic Project Monitoring Information System for the Government of Kenya. This is an automated information management system designed to improve efficiency and transparency of national development planning and coordination of reconstruction activities within the country. It is also a powerful tool for tracking and analysing aid flows. The system serves as the main database and reporting system for the government of Kenya, donor and NGO community as it ensures effective access to development data. The main objective of the e-ProMIS Kenya is to serve as a reliable and credible source of information on overall donor contributions to Kenya's reconstruction, economic recovery and socio-economic development, as well as to support the Government in effectively managing development assistance and promoting the accountable and transparent use of resources (GOK, 2001-2012). E-ProMIS Kenya is a powerful tool that allows the user to view project data organized into lists, reports, charts, and maps. In e-ProMIS Kenya, the user is able to present the project data in the form of list, chart

and map reports, memorize/save the reports, print them, and export them into PDF, MS Word and MS Excel format files. The developments of E-ProMIS Kenya was completed in December 2009 by Synergy International Systems Inc. and from 2010 over 150 trainers and users were trained to spearhead mainstreaming in the ministries. Between 18th and 23rd February 2013, training of Ministry monitoring and evaluation, project officers and committee members was conducted. The Ministry of Education, Science and Technology conducted training of three officers from each tertiary institution in Kenya to be the lead persons in the implementation of the system. The implementation process involves uploading information in the e-ProMIS for monitoring, analysis and reporting on the projects being implemented in these institutions.

STATEMENT OF THE PROBLEM

In order to address challenges of management and monitoring of government projects in Kenya, the government adopted a WPMIS known as Electronic Project Monitoring Information System (e-ProMIS) in 2009.This is an automated information management system designed to improve efficiency and transparency of national development planning and coordination of reconstruction activities within the country. Its objective is to serve as a reliable and credible source of information to support the government in effectively managing development assistance and promoting the accountable and transparent use of resources. The Electronic Project Monitoring Information System was developed by Synergy International Systems Inc. in December 2009. In 2010 government officers were trained to spearhead implementation in the Ministries and other government institutions. However, the backend reports from e-ProMIS platform have shown that most institutions have not been updating information on their project regularly. This has caused concern in Treasury as to why institutions are not uploading project data into the monitoring system (MOEST circular, 20th March 2013 &7th April 2014). Retraining of staff on e-ProMIS conducted in February 2013 and April 2014 still does not seem to change the situation. It became necessary to carry out a study on why institutions were finding it difficult to implement the electronic based monitoring system. Probably other factors within the organisational context were influencing the implementation process. Researchers have discussed how to implement WPMIS in developed countries (Nitithamyong & Skibniewski, 2011). But it appeared that little attention was drawn on developing countries, especially Kenya. It is therefore, against this background that this study sought to establish the influence of organisational culture on the implementation of e-ProMIS in public tertiary institutions in Kenya.

OBJECTIVE OF THE STUDY

To determine the extent to which organisational culture influences the implementation of electronic project monitoring information system in public tertiary institutions in Kenya.

RESEARCH HYPOTHESIS

$\mathbf{H_1}$: Organisational culture has a significant influence on the implementation of electronic project monitoring information system in public tertiary institutions in Kenya.

THEORETICAL PERSPECTIVE

The study was guided by Diffusion of Innovation Theory. The Diffusion of Innovation Theory (DOI) was introduced by Rogers (1995) and remains a popular model in the investigation of the behavior of users in adopting new technological innovation. The DOI is a broad psychological or sociological theory used to describe the patterns of adoption, explain the mechanism and assist in predicting whether and how a new invention will be successful. Diffusion has been defined as a process in which technological innovation and managerial innovation have been introduced into work processes and adopted by a specific group or across the whole organization (Bresnen & Marshall, 2011). Innovation on the other hand, is defined as an idea, practice, or object that is perceived to be new by an individual or other unit of adoption.

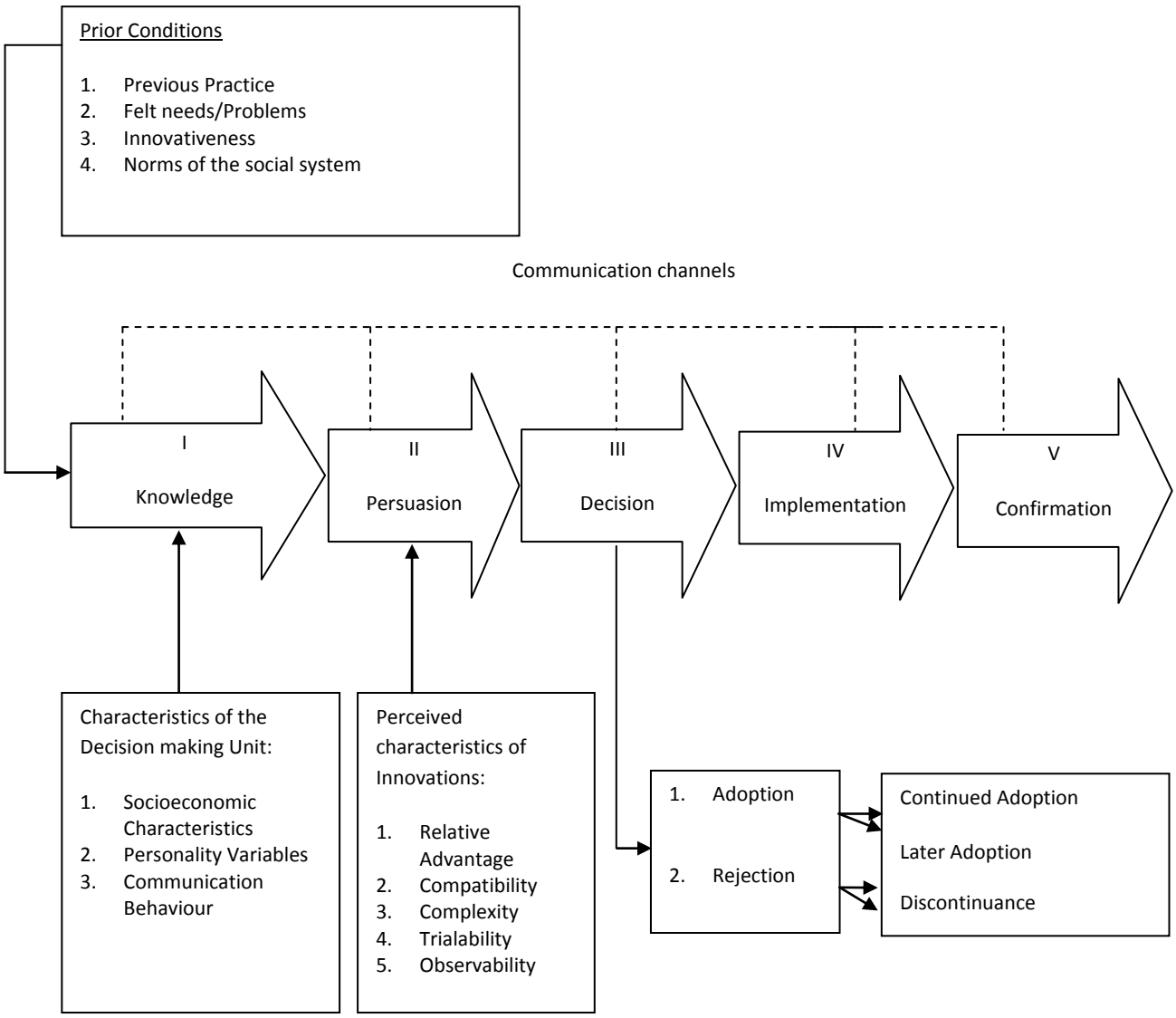

Figure 1: Diffusion of Technology Innovation Mode

Source: Rogers (1995). Diffusion of Innovation, Free Press, New York, NY.

Tan et al., (2008) observed that diffusion of innovation theory is concerned with the manner in which new technological ideas migrate from creation to use and that technological innovation is communicated through particular channels, overtime, among the members of a social system. Figure 1 depicts the DOI process channel.

Based on the DOI model, Roger (1995) proposed five important perceived characteristics of innovation. They are: relative advantage which refers to the degree in which the innovation is perceived to be better than what it supersedes; comparability referring to the degree to which the innovation is consistent with existing values, past experiences and needs; complexity which refers to the degree to which the innovation is difficult to understand and use; trialability referring the degree to which the innovation can be experimented on a limited basis; and observability which refers to the degree of visibility of the new innovation results.

According to Tan et. al., (2008) many researchers have adopted this model along with its characteristics to study innovations (Behnham & Raymond, 1996); Brancheau & Wetherbe, 1990; Hussin & Noor, 2005 among others). In Kenya, Mulwa, (2012) applied it in her study on the influence of institutional and human factors on readiness to adopt E-learning in secondary school in Kitui district.

EMPIRICAL REVIEW

Information system implementation research has evolved as successive generations of researchers and practitioners have observed and commented on the issue surrounding the process (Anumba et al. 2007). Implementation has been defined as the whole process of introducing a system into an organization from conception of an idea, through the analysis, design, installation and operation of the developed system (Anumba et al., 2007).Other conceptions of implementation have viewed it as a process of influence (Gibson and Smilor, 1991), as an interaction system between designer and user, and as a problem solving exercise. In breaking down the implementation process into discreet steps, Walton and McKersie (1991) see three broad sub-tasks involved in the implementation. These are designing the IT system, developing enabling human resource policies to support the end user and managing the implementation process. This represents a socio-technical approach in that both the requirements of technology and the requirements of the organization are taken into account simultaneously (Anumba et. al., 2007). Stewart et al., (2000) had earlier suggested that implementation should be seen as technology diffusion through a social system. These social-technical factors are what make organizational internal context that this study investigated so as to establish how they influence the implementation process of e-ProMIS.

Organizational culture is generally seen as a set of key values, assumptions, understandings, and norms that are shared by members of an organization and taught to new members as correct (Yiing &Ahmad, 2008).Culture theorists have suggested a variety of definitions, ranging from notions of accepted behavioral rules, norms and rituals to shared values, ideologies and beliefs, and at an underlying level, shared patterns of meaning or understanding (Linnenluecke & Griffins, 2010). The common themes found in organization culture research are that: first, scholars have attempted to develop frameworks to categories important dimensions and to provide a conceptual foundation for the study of organization

culture. Second, values, ideologies and beliefs are considered to be particularly important for understanding an organization's culture and have been viewed as a reliable representation. The assessment and measurement of organizational culture has typically focused on organizational values. A third aspect of cultural research has been the role of an organization's culture (and its underlying values and ideology of management) in hindering or fastening the implementation of managerial innovations or technological innovations (Linnenlueck & Griffins, 2010).

A study of organizational culture can take on a multiple of aspects, including levels (visible expressed values, and underlying assumptions), strength (strong or weak), and adaptiveness (adaptive or unadaptive) (Yiing & Ahmad, 2008). Organizational culture can be assessed along many dimensions, resulting in conceptually different, but fundamentally similar models and theories. Kandie (2009) used Harrisons (1972) ideas that described the four dimensions of culture using single pictograms and making reference to Greek mythology. These four dimensions of culture are power, role, task and person. Power culture is characterized by a single source of power from which rays of influence spread throughout the organization. Role culture is characterized by bureaucracy and its strength lies in its functions and specialists, which are coordinated and controlled by senior executives. Rules procedures and job descriptions dominate the internal environment. Task culture is characterized by accomplishing the job at hand by availing resources to make the project successful. Person culture is characterized by a group of people who come together to champion their own interests rather than on an individual basis. The above approach has been found to be more suitable for private business oriented organizations as opposed to public organizations.

Another approach to organization culture has been developed by Wallach (1983) and used by Mulabe (2013) to study the influence of organizational culture on the performance of state corporations in Kenya. Wallach (1983) looked at culture as a combination of three categories, bureaucratic, innovative or supportive to varying degrees. Wallach (1983) states that the organizational culture index (OCI), profile culture on the three stereotypical dimensions. He asserts that the flavor of an organization can be derived from the combination of these three dimensions. A bureaucratic culture is hierarchical compartmentalized organized systematical and has clear lines of responsibility and authority. An innovative culture refers to a creative, result-oriented, challenging work environment. A supportive culture exhibits teamwork and a people oriented encouraging trust work environment. Although a number of typologies, categorizations and instruments for measuring organizational culture exist, there is little agreement on which ones are more appropriate or superior to the other (Yiing & Ahmad, 2008).

Organizational culture has often been cited as the primary reason of the failure of implementing organizational change programs. Songer et al., (2001) argue that organizational culture is mainly the reason for poor implementation of information technology systems rather than technology issues. Amanda (2006) in his study on understanding cultural impediments to ICT system integration; observed that it's important to recognize that technology and culture are intertwined, as technology affects and is affected by the prevailing cultural environment. He further came up with commitment from top

management, continuing support for users, involvement of users and nature of control systems as cultural factors affecting ICT system integration.

A study by Mansor et al. (2012) on organization factors influencing performance management commitment, internal resources performance, oriented culture, employee engagement and maturity of PMS indicates that leadership is important in designing and developing effective performance management system and as a consequence could influence employees commitment to achieving targets and improving g performance. They also observed that culture can influence organization power relationship and their response to change. Gasendran and Brewer (2007) argue that most ICT systems fail due to lack of management attention to complex organizational factors preferring to concentrate solely on technical or strategic matters. Through the review of the above literature it is evident that organizational culture has an influence on implementation of management information systems. However, these studies were conducted in business organizations and not government owned institutions. They also focused on general ICT as opposed to electronic project monitoring systems. Finally they were conducted in developed countries and might not accurately portray the situation in developing countries like Kenya. Wallach (1993) definition was adopted for this study because it was found to be more suitable for state or public corporations (Mulabe, 2013).

RESEARCH METHODOLOGY

The study employed a mixed mode approach to conduct cross sectional descriptive survey and correlational research design. This approach was chosen because of its suitability for obtaining robust data set and results (Kothari, 2004).The population of the study was all public tertiary institutions implementing e-ProMIS which included Technical Training Institutes, Institutes of Technology and National Polytechnics in Kenya. The unit of analysis for the study was the institutions. Information from the Ministry of Education, Science and Technology showed that there were thirty five (35) tertiary institutions implementing e-ProMIS. Three members of staff from each tertiary institution who had been trained and given passwords by the Ministry of Education, Science and Technology so as to access and upload data into the e-ProMIS system formed part of the target for this study. The study also targeted Deputy Principals, Registrars and Heads of Department. The total target population of the study was 460 members of staff from the 35 tertiary institutions made up of 105 e-ProMIS trained staff and 355 deputy principals, registrars and HODs. Considering that the unit of analysis was the institution, a census of all 35 tertiary institutions implementing e-ProMIS was taken in this study because their number is small. The sample size of respondents from the tertiary institutions was calculated using the formula suggested by Krejcie and Morgan (1970), as indicated below;

$$s = x^2NP(1-P) \div d^2\,(N-1) + x^2P(1-P).$$

Where:

s=required sample size

x^2 =the table value of chi-square for 1 degree of freedom at the desired confidence level (3.841)

N= the population size

P= the population proportion (assumed to be 0.50 since it would provide the maximum sample size).

d= the degree of accuracy expressed as a proportion (0.05)

Therefore;

$s=3.841(460)(.50)(1-.50) \div 0.05^2\,(460-1)+3.841(.50)(1-.50)=209.5671$

approximately 210 respondents. This sample size corresponds with sample size given by the Krejcie and Morgan (1970) table.

The study employed a combination of stratified and simple random sampling techniques. All the three members of staff trained on e-ProMIS were sampled in the study because of their knowledge on implementation of e-ProMIS in the institutions. Considering that the tertiary institutions have almost the same number of deputy principals, registrars and heads of departments, three were sampled from each of the thirty five institutions. The sample size was 210 members of staff made up of 105 e-ProMIS trained staff and 105 deputy principals and HODs was selected.

Data was collected using questionnaires. To ensure reliability of the research instrument self-administered approach was used in data collection and Cronbach coefficient Alpha was determined so as to measure internal consistency of the research instrument. The results of the Cronbach coefficient Alpha were 0.764 on the section of implementation of e-ProMIS and 0.755 on the organizational culture section of the questionnaire. According to the rule of the thumb provided by George and Mallery (2003) coefficients greater than $\alpha > 0.7$ are acceptable.Data was analysed through data clean up, data reduction, data differentiation and data explanation. Parametric testes were used because they are more powerful and able to reduce chances of committing type II error, less likely to not reject a null hypothesis which should be rejected. Hypothesis was tested using correlation and regression analysis.

RESEARCH RESULTS

Bureaucratic culture

Bureaucratic culture was measured by requesting respondents to indicate the extent to which their institutions utilised bureaucratic culture. They were given five items rated on a five point Likert scale ranging from: To a very great extent (VGE); To a great extent (GE); To a moderate extent (ME); To a little extent (LE) and To a very little extent (VLE) from which to choose. The research findings indicated that majority of the respondents indicated that in the public tertiary institutions in Kenya to a little extent managers do not delegate important task (25.9%), managers coordinate, organize and monitor people and processes (42.0%) and that Jobs are highly standardized and formalized with clearly defined rules, procedures and work processes that are strictly followed (30.2%). They also indicated that to a moderate extent power is centralized at the top (30.2%) and managers are decision makers and decisions are made autocratically (30.2%).

Research findings also indicated that in tertiary institutions to a little extent (M=2.44, SD=1.20) power was centralized at the top; to a moderate extent (M=2.80, SD=1.21) managers were decision makers, decisions were made autocratically and did not delegate important task (M=3.17, SD=1.30). To a little extent (M=2.31, SD=1.04) managers coordinated, organized, monitored people and processes and that jobs were highly standardized and formalized with clearly defined rules, procedures and work processes that were strictly followed (M=2.48, SD=1.15). On the overall tertiary institutions practiced a bureaucratic culture to a moderate extent (M=2.64, SD=0.72).

Supportive culture

Supportive culture was measured by providing respondents with statements rated on a five point Likert scale ranging from: To a very great extent (VGE); To a great extent (GE); To a moderate extent (ME); To a little extent (LE) and To a very little extent (VLE) from which to choose. The research findings in Table 3 show that majority of the respondents indicated that in public tertiary institutions to a very little extent an open, safe and friendly working environment where teamwork, support participation and consensus is encouraged (29.0 %). They also indicate that to a little extent stability performance and efficient operations are long term goals (40.7%), success means dependable delivery, smooth scheduling and low cost (40.1%), the focus is on internal integration, stability, order and control (38.9%), and power and decision making is decentralized (31.5%). To a moderate extent leaders are mentors/parental heads, encouraging and sociable (32.1%).

Research findings also indicated that in tertiary institutions to a little extent (M=2.25, SD=1.02) stability performance and efficient operations were long term goals, success meant dependable delivery, smooth scheduling and low cost (M=2.30, SD=1.02), the focus was on internal integration, stability, order and control (M=2.33, SD=1.00) and to a moderate extent (M=2.62, SD=1.20) power and decision making was decentralized To a little extent (M=2.41, SD=1.25) an open, safe and friendly working environment where teamwork, support participation and consensus was encouraged and leaders were mentors/parental heads, encouraging and sociable (M=2.52, SD=1.19). On the overall tertiary institutions practiced supportive culture only to a little extent (M=2.45, SD=1.09).

Innovative culture

Supportive culture was measured by providing respondents with statements rated on a five point Likert scale ranging from: To a very great extent (VGE); To a great extent (GE); To a moderate extent (ME); To a little extent (LE) and To a very little extent (VLE) from which to choose. The research findings in Table 5 show that most of the respondents indicated that in public tertiary institutions in Kenya to a little extent innovation, risk-taking and challenges are embraced and individual initiatives and freedoms are encouraged (34.6%), the focus is to be on the leading edge/being an industry leader (35.2 %), the long-term emphasis is on empowerment, growth development and job security (32.1%) and success means gaining unique and new products /services (32.1 %).

Research findings also indicated that in tertiary institutions in Kenya to a moderate extent (M=2.68, SD=1.10) innovation, risk-taking and challenges were embraced and individual initiatives and freedoms were encouraged and commitment to experimentation and thinking differently was encouraged to moderate extent (M=2.81, SD=1.12). To a little extent (M=2.53, SD=1.05) the focus was to be on the leading edge/being an industry leader while the long-term emphasis is on empowerment, growth development, job security was encouraged (M=2.53, SD=1.03) and that success means gaining unique and new products services (M=2.51, SD=1.13). In overall tertiary institutions practiced innovative culture to a moderate extent (M=2.61, SD=1.95).

Overall analysis on Organisational Culture

Findings indicated that the overall mean for organisational culture in public tertiary institutions was 2.54 and standard deviation of 0.69. Majority of them had bureaucratic culture (M=2.64, SD=0.72) followed by innovative culture (M=2.61, SD=0.95) and then supportive culture (M=2.41, SD=0.92). This implies that most of tertiary institutions had hierarchical compartmentalized organized systematically and had clear lines of responsibility and authority.

CORRELATIONAL ANALYSIS

Correlational analysis using Pearson's Product Moment technique was done to determine the relationship between indicators of organisational culture and implementation of e-ProMIS. It was meant to identify the strength and direction of the association between the indicators of organisational culture and implementation of e-ProMIS. The correlational results are presented in table 1.

Table 1: Correlation Matrix for Organisational Culture and implementation of e-ProMIS

		Bureaucratic culture	Supportive culture	Innovative Culture	Composite Organizational Culture
Implementation of e-ProMIS	Pearson Correlation	.380**	.333**	.362**	.447**
	Sig. (2-tailed	.000	.000	.000	.000
	N	162	162	162	162

***. Correlation is significant at the 0.01 level (2-tailed).*

The correlation results in Table 8 indicate positive and significant coefficients between the indicators of organisational culture and implementation of e-ProMIS. Bureaucratic, supportive and innovative cultures had a moderate and significant relationship with implementation of e-ProMIS (r=380, p-value<0.01), (r=333, p-value<0.01) and (r=362, p-value<0.01) respectively. Complexity organizational culture had a moderate and significant relationship with e-ProMIS (r=372, p-value<0.01). Composite organisational structure had

moderate and significant relationship (r=447, p-value<0.01) with implementation of e-ProMIS.

INFERENTIAL ANALYSIS

The objective of the study was to establish the influence of organisational culture on implementation of Electronic Project Monitoring Information System (e-ProMIS). The literature and empirical evidence had suggested that organisational culture would be associated with implementation of e-ProMIS. Organisational culture was an independent variable in the study and was measured using indicators of three types of organizational culture namely bureaucratic, supportive and innovative culture. Data was collected using 16 items, each consisting of a statement that was measured on a five point Likert-type scale. Composite index for each of the three types of organisational culture were computed and used in testing the hypothesis. To satisfy the fourth objective, the following hypothesis was tested using simple linear regression model.

H_0: Organisational culture has no significant influence on the implementation of Electronic Project Monitoring Information System in Public Tertiary Institutions in Kenya.

H_1: Organisational culture has a significant influence on the implementation of Electronic Project Monitoring Information System in Public Tertiary Institutions in Kenya.

The null hypothesis was tested using the following linear regression model:

$$y = a + \beta_4 X_4 + e$$

Where:

y= Implementation of E-ProMIS
a=constant
β_4= Beta coefficient
X_4= Organisational culture
e= error term

Table 2: Regression Results of Influence of Organisational culture on implementation of e-ProMIS

Model	Unstandardized Coefficients		Standardized Coefficients	t	P-Value
	B	Std. Error	Beta		
(Constant)	1.799	.155		15.642	.000
Bureaucratic Culture	.184	.036	.358	5.055	.000
Supportive Culture	-.026	.054	-.065	-.482	.630
Innovative Culture	.150	.052	.385	2.892	.004
Predictors: Bureaucratic culture, Supportive culture, Innovative culture					
Dependent Variable: Implementation of e-ProMIS					
R= 0.504					
R square=0.254					
F(3,158)=17.892 at level of significance p = 0.000<0.05					

The study findings on table 2 indicates that r is equal to 0.504 meaning that organisational culture has a strong influence on implementation of e-ProMIS. The value of R squared is 0.254 indicating that organisational culture explains 25.4% of the variation in the implementation of electronic project monitoring information system in public tertiary institutions in Kenya. The β coefficient of bureaucratic culture is 0.358, that of supportive culture is -0.065 and innovative culture is 0.385. Comparing the coefficients, it can be noted that bureaucratic culture (β=0.358, t=5.055, p=0.000<0.05) and innovative culture (β=0.385, t=2.892, p=0.004<0.05) are both statistically significant. Only supportive culture was statistically insignificant (β=-0.065, t=-0.482, p=0.630>0.05). The results imply that one unit change in implementation of e-ProMIS is explained by 35.8% changes in bureaucratic culture and 38.5% change in innovative culture. The β value of supportive culture is affected inversely (β= -0.065). This finding was surprising and contrary to what was expected. It was difficulty for the researcher to explain why supportive culture would be inversely affected by implementation of e-ProMIS.

The overall F statistics (3,158) =17.892 at level of significance p = 0.000<0.05suggesting that there was a statistically significant relationship between organisational culture and implementation of electronic project monitoring information system in public tertiary institutions in Kenya. Based on the research findings we reject the null hypothesis that organisational culture has no significant influence on the implementation of Electronic Project Monitoring Information System in Public Tertiary Institutions in Kenya and conclude that organisational culture has a statistically significant influence on the implementation of Electronic Project Monitoring Information System in Public Tertiary Institutions in Kenya. Table 4.41 presents the estimates for coefficients of the model.

Using the statistical findings the regression model can be substituted as follows;

y= 1.799+0.358B+-0.065S+0.385I

Where:

y=Implementation of e-ProMIS
B= Bureaucratic culture
S= Supportive culture
I= Innovative culture

Past studies confirm that a key piece of organisational infrastructure for e-Government systems like e-ProMIS lies in changing internal government employee culture or the way that things are done in an organisation (Kamungo & Jain, 2011). Government institutions typically tend to exhibit strong cultures that can inhibit or facilitate the success of various initiatives including the e-government (Rainey & Steinbauer, 1999). Results from a study by Koskin et al., (2010) showed the existence of a strong relationship between organisational culture and participation in decision making hence influencing how implementation of e-government strategies. This agrees with the argument of Leppeveld (2001) that the main issue in implementation of information systems is that they are managed and used by people who have certain beliefs, attitudes and practices and changing them takes time. The findings further agree with results from a study by Hadi (2004) in Malaysian government institutions

that the implementation of information monitoring systems in government organisations is greatly influenced by the organisations' cultural dimensions. A study from Ibua (2014) established that performance of an organisation is influenced by organisational culture adopted by that organisation.

CONCLUSIONS

The research objective was to examine the extent to which organisational culture influenced the implementation of electronic project monitoring information system in public tertiary institutions in Kenya. Organisational culture was categorized into bureaucratic, supportive and innovative culture. Indicators for each of the cultural types were adapted from previous studies and include in the research instrument. Descriptive statistics showed that majority of the tertiary institutions had a bureaucratic culture followed by innovative and then supportive culture. It can therefore be concluded that in majority of the tertiary institutions there is hierarchical compartmentalized organised system with clear lines of responsibility and authority. Results from inferential statistics indicated that organisational culture had a strong positive influence on the implementation of e-ProMIS. Bureaucratic and innovative culture was found to have an influence on implementation of e-ProMIS, but supportive culture had a negative influence. It can therefore be concluded that the most ideal cultural background for implementation of e-ProMIS is bureaucratic.

IMPLICATION OF THE STUDY TO POLICY AND PRACTICE

Considering that the Government of Kenya is moving towards implementation of e-government in various aspects of service delivery including e-ProMIS, e-procurement and filling of tax through itax among others, this study has implications to the government, implementing agencies and citizens. The study findings have indicated that organisational culture has a statistically significant influence on implementation of e-ProMIS. This implies that for successful implementation of e-ProMIS and other e-government systems organisational culture is imperative. In this era of digital systems public and private institutions that intend to implement ICT based technologies should ensure that their organisations adopted the right culture that is well aligned to supporting e-government systems.

Policy makers need to design a training curriculum that would equip the implementers with the necessary knowledge and skills to implement the new systems. Clear understanding of the new technology is imperative for implementation to be effective. For organisations to be effective and efficient in implementation of the electronic systems they must analyse their internal dynamics so as to position themselves strategically to embrace electronic technology. Public and private institutions can apply the findings of this study in areas of human resource development such as training, strategic development and cultural development.

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