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EFFECTS OF ENTERPRISE RESOURCE PLANNING ON ORGANISATIONAL PERFORMANCE ON KENYA POWER AND LIGHTING COMPANY: A CASE STUDY OF KENYA POWER AND LIGHTING COMPANY VOI BRANCH

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Abstract: *The adoption of Enterprise Resource Planning systems has many business implications. The purpose of this study was to determine the effects of enterprise resource planning on organisational performance of Kenya Power and Lighting Company with a case study of Kenya Power and Lighting Company Voi branch. The specific objectives of this study were; to establish the effects Enterprise Resource Planning on reduction of costs, managerial efficacy, and competitiveness instrumental mentality in relation to organisational performance. Descriptive research design was used in this study and the sample size was 125 respondents. The data was collected using a questionnaire developed by the researcher and administered by research assistant. It was analysed through SPSS software and results presented in frequencies through tables and figures by using ANOVA. The study found that the organisation experienced reduced operation costs; management efficiency, competitive advantage and increased shareholder's profitability. All the factors had great extent of affecting the organisation's performance. The study recommended that top leadership should support the adoption of ERP system for to be successful, adoption of cost effective modules to improve efficiency, adoption of cost friendly modules and organisations should embrace change for them to reap the full benefits of technology.*

Keywords: *Enterprise Resource Planning, Instrumental Mentality, Competitiveness, Managerial efficacy, software, capital base.*

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INTRODUCTION

1.1 Background of the Study

Enterprise Resource Planning (ERP) is the technological term used to refer to the management software that include modules such as production, finance, marketing and human resources and that allow companies to plan their goods and services. According to Otieno (2008), Enterprise Resource Planning (ERP) systems integrate internal and external management information across an entire organization, embracing finance/accounting, manufacturing, sales and service and customer relationship management. ERP systems automate this activity with an integrated software application. The purpose of ERP in an organisation is to facilitate the flow of information between all business functions inside the boundaries of the organization and manage the connections to outside stakeholders. This software, used by many enterprises, has a critical role in ensuring increased efficiency.

This study thus was aimed at looking at the effects of Enterprise Resource Planning on organisational performance on Kenya Power and Lighting Company with a case study of Voi branch. The Kenya Power and Lighting Company (KPLC) is a limited liability company whose main responsibility is the transmission, distribution and retail of electricity in Kenya. Its core business activities include the transmission, distribution and retailing of electricity purchased in bulk from the Kenya Electricity Generating Company Limited (KenGen), Independent Power Producers (IPPs) and the Uganda Electricity Transmission Company Limited (UETCL). The company owns and operates the national transmission and distribution grid.

This research was done in Voi area, Taita Taveta County. This is because, for a study to be successful, the ideal setting for any study is one that is directly related to the researcher's interests as avidly observed by Singleton (1993). As Iam currently working within the county, I have an interest to do the research at the county. At the same time and most importantly, no research has been carried out on the effects of Enterprise Resource Planning on organisational performance on Kenya Power and Lighting Company in Voi..Further, Singleton (1993) further argued that the ideal setting for any study should be easily accessible to the researcher. This is an important consideration for me due to the limited time and resources at my disposal. Taita Taveta County thus is accessible and convenient for me.

1.2 Statement of the Problem

An effective business strategy centres on an aggressive, efficient use of information technology; for this reason the ERP systems have emerged as the core of successful information management, and the enterprise backbone of many organizations. ERP is built on the promise that all critical information will be totally integrated into one single database, however, in practice things have worked different for many organizations. There are many researchers who have researched on ERP. For example, Abdelghaffar et al (2010) and Hawking (2006). In Kenya, Nyandiere (2002) investigated challenges facing ERP systems implementation in Kenya. Kangethe (2007) evaluated successful implementation of ERP at HACO industries.

These studies have largely focused on success factors of implementation. Adhiambo (2013) did a study which revealed that enterprise resource planning system approach is an important investment that institutions need to consider to remain competitive. Other scholars (Kiburi, 2008, Katana, 2011 and Ogada, 2013) have done studies related to ERP systems and procurement in various Kenyan organizations. Based on the above researches, no substantive research has been done geared towards the effects of ERP in the performance of Kenyan public organizations thus the need for this research.

1.3.0 Objective of the Study

The general objective of this study was to establish the effects of Enterprise Resource Planning on organisational performance of Kenya Power and Lighting Company, Voi branch.

1.3.1 Specific Objectives

Specifically, this study sought:

1. To establish the effects of reduction of operational costs on the performance of Kenya Power and lighting Company; Voi branch.

1.3.2 Research Questions

1. What is the effect of reduced operational costs on the performance of Kenya Power and Lighting; Voi branch?

LITERATURE REVIEW

2.0 Management Efficacy

An ERP system in a way open up an organization and makes the data flow through the organization without obstacles between business units. This way more data points are

accessible and the ERP system also has a very tight control over the flow of resource movements (Shang & Seddon, 2007).

However, when using multiple process sources of data for a report or a function, input from every source is required, imposing unnecessary bureaucratic crosschecks leading to a delay. The streamlined processes enabled by ERP can help in reduce redundancy and duplicate work because data just have to be entered one time. This leads to increased responsibility and skill requirement for stakeholders at all levels, a change that can be met with resistance and low morale. Shang and Seddon (2007) also points out that there might be discrepancies between the quality of the different modules and the processes they propose. Newer versions with new functionality might not have been tested enough in real world companies and therefore aren't to be considered as best practice.

ERP systems can be a useful tool for organizations to build sound and robust information systems infrastructure and enable management to take better decisions based on accurate and on-time information. These systems improve product quality and process efficiency and also enhance information sharing and information quality among different functions inside the company as well as to suppliers and other partners in the procurement process. This enhanced overall organization efficiency, particularly procurement efficiency, help to achieve good performance of the entire organization and improve long term profitability.

Amongst the programs integrated in an ERP system is what is called the Procurement Information System .is a database that collects, records, interprets, analyzes, reports and disseminates data regarding procurement. This data is crucial as it is used for making critical management decisions regarding organizational procurement. An effective and efficient procurement information system is the one that assists in making delivery of goods and services at appropriate cost through a clear policy regarding the procurement procedures of the company (Majed, 2002). The ERP system controls offer the service platform to improve the efficiency of enterprise work among them, procurement, accounting, management etc. (Tomblin, 2010).

2.1 Measurement of Performance of State Corporations

Firm performance is one of the most important constructs in management research. The definition of firm performance could vary from one person and another. According to Richard et al. (2009) organizational performance encompasses three specific areas of firm

outcomes: financial performance (profits, return on assets, return on investment, etc.); product market performance (sales, market share, etc.); and shareholder return (total shareholder return, economic value added, etc.). Over the last decade, organizations have renewed their interest in measuring organization programs and their impact. This interest is as a result of many factors including efficient planning, the desire for accountability, the increasing interest of multi stakeholders, concerns of funders among others. The use of performance measurement systems is also frequently recommended for facilitating strategy implementation and enhancing organizational performance.

Performance measurement refers to the selection and use of quantitative and qualitative measures of program/project capacities, processes and outcomes to inform the public or designated public agency about critical aspects of a project (Ong'olo, 2006). Neely & Bourne (2003) defined it as the use of a multi-dimensional set of performance measures. The adoption of new management practices over the years has also led to inquiries with regards to the suitability of existing performance measurement systems. In particular, there is need to evaluate the existing performance measurement systems in order to develop and adopt innovative and robust solutions for organizations.

A common pragmatic approach to performance measurement is based on a process-oriented model, in which performance measures can be categorized into input, process, output, and outcome measures, although variations in the classification also exist (Foltin, 1999). This approach can be used as a basis for self-assessments and reporting on performance by managers for internal decision making and external accountability purposes, as well as a basis for evaluations by external regulatory and funding agencies. Input measures quantify resources used in providing services; output measures indicate the amount of work completed; process measures reflect the relationships between inputs and outputs, or efficiency in the use of resources; and outcome measures relate to the intended outcomes or effects of services provided, or effectiveness.

2.2 Theoretical framework

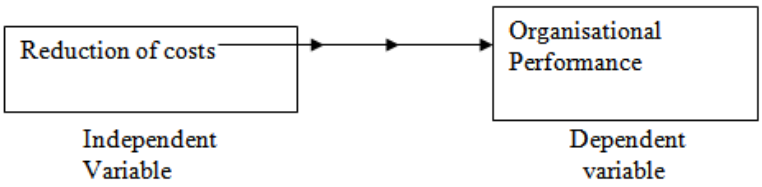
2.2.1 Organisation Control Theory

The concept of control and its application in ERP systems is used as a sensitizing device (Walsham, 1993) in the current research. In this context, the term control is said to connote organizational control which can (a) influence or (b) become engendered by the use of an

ERP system. As such, the concept of control falls under Orlikowski's (1991) classification of "control through technology". Although the focus is on control through technology, this forms part of overall organizational control. The latter in the context of this proposal is interpreted to mean adherence to the company's processes and procedures, as well as efficient management of the company's data.

Organizational control influencing the use of the ERP system in this case can include (pre-existing) internal organizational factors such as the presence and influence of the IT department over the use of the system, or the power given to certain users in the system. It can also include the need to adhere to external mandates such as legislation, necessitating the implementation of the necessary control procedures in the system. It can also arise from the level of integration of the ERP functionalities (with more integration meaning better control over the company's data and procedures).

Organizational control as an outcome of ERP use can then encompass both behaviour and output control (Ouchi, 1977). Behaviour control can be facilitated with access controls for the use of the system, as well as the panoptic (visibility) features of the ERP system. Output control can then be facilitated with the production of reports from the system.



RESEARCH METHODOLOGY

3.1 Research Design

Research design is about the type of information that is required to be collected so as to address the research question (Kothari, 2009). The study will adopt a quantitative descriptive research design. This is because descriptive quantitative research allows manipulation of one variable at a time filtering out external factors (Sow & Sia, 2004).

The study was intended to manipulate the dependent variable against the independent variable of Enterprise Resource Planning systems in public organizations in Kenya.This concurs with Orotho (2000), when he said that the descriptive approach can be used when the problem is specific and the researcher has an emphasis of determination of how the problem is influenced by the different variables under study.

3.2 Population

According to Mugenda & Mugenda (2003) study population refers to an entire group of individuals, events or objects having common observable characteristics. The target population in this research was all the workers working with Kenya Power and Lighting Company in Voi, Taita Taveta County. The target population comprised of senior staff, middle level staff, junior level staff and support staff. The population of all the workers at the KPLC county offices stood at 250 employees which were given by the Human Resource department, KPLC County Headquarters.

3.3 Sampling Frame

In this research, the sampling frame was guided by the position individual respondents held in the organisation. It was subdivided into senior management, middle level management, junior staff and support staff. A sampling frame in statistics is a term that is used to connote a set of information used to identify a sample population for statistical treatment. It includes a numerical identifier for each individual about characteristics of the individuals, to aid in analysis and allow for division into further frames for more in-depth analysis (Mugenda & Mugenda 2003).

3.4: Sample and Sampling Technique

3.4.1: Sampling Technique

In selecting the sample of respondents the researcher used a multi paradigm approach where more than one sampling technique was used. More specifically, the researcher used stratified and purposive sampling procedure in which the target population was sampled according to the position they held in the organisation. According to Mugenda & Mugenda (2003), in purposive sampling, sample elements are chosen because they fulfil certain criteria with which the research is concerned with. For this study, the sample composed senior staff, middle level staff, junior level staff and support staff. In each sample, a sample of half of the population was selected.

3.4.2: Sample Size

In this research, out of the 250 target population, the researcher had a representative sample of at least 50% of the total respondents. Therefore, 125 respondents were issued with questionnaires. According to Bloomington, (2010)[50], a 50% sample size was ideal to cater for non-response error.

3.4.3: Data Collection Instruments

Data collection instruments are tools used for collecting data during a study (Mugenda and Mugenda, 2003). The study used only the questionnaires. Questionnaires were preferred as they were economical in as far as data collection was concerned. The researcher used a questionnaire which was self administered, structured and had open ended questions deriving the information for analysis. The questionnaire was divided into 2 parts. Part A asked the background information of the respondent and lighting Company.

3.4.4 Data Collection Procedure

This research greatly relied on both primary and secondary data. Primary data was the data that was collected directly from the respondents while secondary data was the data that was collected from other sources. Primary data was collected by means of a questionnaire from the various strata as proposed above. The questionnaire was delivered to the respondents who were required to fill and the researcher collected them at pre-agreed time (within two weeks). Secondary data was documented. Archival search included; relevant I.S publications, Industry reports as well as from websites.

3.4.5Data processing

According to Mugenda and Mugenda (2003) data analysis is the process of systematically applying statistical and/or logical techniques to describe and illustrate, condense and recap, and evaluate data. The researcher collected data quantitatively. The completed questionnaires were edited at first for completeness and consistency before they were processed. The Statistical Package for Social Sciences (SPSS) was used in the analysis.

The researcher used quantitative data analysis because of accurate results and limited personal bias involved in the analysis (Gay, 2009). Quantitative data was coded, summarized and analyzed using descriptive statistics such as distribution tables and percentages. Analysis was done through calculating frequencies, percentages and tabulating them appropriately. It was then presented using frequency tables. ANOVA was used to carry out regression analysis to find out the relationship between the independent variable and dependent variable.

DATA ANALYSIS, RESULTS AND DISCUSSION

4.1 Reduction of costs on organisation performance

According to the study findings majority of the respondents who recorded a mean of 4 said that to a great extent, the adoption of ERP system in the organisation les to the reduction of operation costs within the organisation. There are benefits in reduction of transaction costs, negotiation costs, contracting costs and coordination costs, led to reduction of contracting costs. These automated systems enabled the organization to control and manage purchasing decisions and procurement process. This has the effect of leading high efficiency and more profitable business as supported by Ehie et al (2005)

4.2 Organisational Performance

A variable is an object, event, idea, feeling, time period, or any other category that the researcher is trying to measure. On the other hand, a dependent variable is a variable that depends on other variables (Mugenda & Mugenda 2003). In this research, the dependent variable was the organisational performance. From the analysis in table 4.7 below, most of the respondents were of the view that each of the five factors; increased corporate profits, increased market share, increased entry of new customers, increased branch network and increased asset base had a great extent of affecting the organisational performance as it recorded an average mean of 4 as seen below.

SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1: Summary

The research project has identified that there is a wide range of benefits to Public organisations as a result of adopting ERP. On the issue of reduction of costs, most of the respondents thought that the adoption of an ERP system in the organisation recorded a mean of 4 which meant that it had a great extent of reducing operation costs.

5.2 Conclusions

Based on the findings of the study concluded that ERP systems had reduced cost in operation and also time used to perform certain duties in the organization. The study however found that the implementation cost of the ERP system was too expensive with the least company spending a cost range into millions of dollars.

The study concluded that ERP enables companies to break down traditional organization's granaries and thus increase the profits of the organisation significantly. They have replaced them with a tightly integrated horizontal structure whereby the strategy, culture of the organization, process and technology are tightly aligned. By using integration technologies

to integrate management of document activities, human resource intervention is only necessary in activity control.

5.3: Recommendations

The study recommends that the top management should provide the necessary resources in terms of leadership, financial support and provision of expertise in order for implementation of ERP to be successful. Top management may also be involved to monitor and evaluate the implementation process from time to time in order to determine the success and areas to improve on after the assessments in order for implementation to be successful

Finally in regard to the effect of Enterprise Resource Planning on instrumental mentality, the study recommends that the organization should embrace technological changes as they change within the environment that the organization exists. This has the effect of increasing the organisational profitability

5.4: Areas of Further Research

Based on the findings a comparative study on the effect of Enterprise Resource Planning (ERP) systems in both service based and goods based industries should be done

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TABLES

Table 4.2: Reliability and validity test

	Variable	Alpha test	Decision
1	Reduction of costs	0.786	Accept
2	Management efficacy	0.766	Accept
3	Competitiveness	0.840	Accept
4	Instrumental mentality	0.795	Accept

Table 4.5: Whether ERP leads to reduction of costs

	Factor leading to reduced operation costs	Mean	Standard deviation
1	Leads to the re-engineering of the business processes within the organisation	3.6	1.14
2	Enhances coordination and communication of all the activities within the organisation	3.6	1.58
3	Enables the organisation to manage its procurement process	3.4	1.14
4	Leads to reduced negotiation costs	3.2	1.30
5	Leads to reduced contracting costs	3.8	1.64
	Average mean	**3.52>4**	

Table 4.9: Factors reflecting on organisational performance

	Factor reflecting on organisational performance	Mean	Standard deviation
E1	Increased corporate profits.	3.8	0.84
E2	Increased market share	3.2	0.84
E3	Increased entry of new customers	4.2	0.84
E4	Increased branch network	3.4	0.89
E5	Increased asset base	3.6	1.67
	Average mean	**3.64>4**	