

**FACTORS AFFECTING E-PROCUREMENT IMPLEMENTATION IN  
GOVERNMENT MINISTRIES IN KENYA: A CASE OF THE NATIONAL TREASURY****MUKINDIA HENRY KIRIMI****JOMO KENYATTA UNIVERSITY OF AGRICULTURE AND TECHNOLOGY****NOOR ISMAIL SHALLE, PhD****JOMO KENYATTA UNIVERSITY OF AGRICULTURE AND TECHNOLOGY**

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**ABSTRACT**

Implementation of e-procurement has been affected by numerous factors and its only yester years that blue chip organizations started taking full advantage of the value of e-procurement systems. The overall objective of this study was to examine the factors affecting e-procurement implementation in The National Treasury. The study was guided by the following research objectives which include; to determine how budget allocation affects e-procurement implementation in government ministries; to examine the effect of skilled manpower on implementation of e-procurement in government ministries; to establish how government policy affects implementation of e-procurement in government ministries and to find out the extent to which organization structure affects e-procurement implementation in Kenya. The study targeted the National Treasury, Nairobi. A descriptive research design was used in this study. The study targeted 268 staff of the National treasury. A stratified random sampling method was used to pick a sample of 73 respondents from a target population of 268 staff. Data was analyzed by using excel worksheets and statistical package for social science to come up descriptive statistics. Data was presented using pie charts, frequency tables, bars graphs and the relationship between the variables was established using regression analysis. The study concluded that budget allocation, skilled manpower, government policy and organizational structure affect e-procurement implementation. The study concluded the public sector has established specific goals for the e-procurement initiatives and communicates e-procurement needs to all stakeholders. The study concluded that a well-organized e-procurement system contributes to good governance by increasing confidence, transparency, and competition and reduce the cost of doing business. The study recommends for adaptation of the appropriate

Information and Communications Technologies (ICT) necessary for successful implementation of procurement strategy.

**Keywords:** *factors affecting e-procurement implementation in government ministries*

### Background of the Study

E-procurement refers to the use of Internet-based (integrated) information and communication technologies (ICTs) to carry out individual or all stages of the procurement process including search, sourcing, negotiation, ordering, receipt, and post-purchase review (Rasheed, 2004). There are various forms of e-Procurement that concentrate on one or many stages of the procurement process such as e-Tendering, e-sourcing, e-advertising, e-payment, e-invoicing, e-catalogue. Private and public sector organizations have been utilizing Information Technology (IT) systems to streamline and automate their purchasing and other processes over the past years. It is only in the past decade that e-Procurement systems have attracted attention. The rise of e-business in the late 1990's led to the development of new opportunities related to procurement: e-procurement, spend management, outsourcing and joint product design (Choudhury, 2004).

Public sector procurement is large and complex, accounting for between twenty and thirty percent of gross domestic product and traditionally attempts to meet many economic, social and political objectives (Thai, 2005; Aberdeen, 2011). Governments procure goods and, in order to preserve accountability and transparency services, use a complex legal and regulatory system designed to protect the public interest. While private sector procurement is practiced under the sponsorship of each individual firm's governance policies, public sector procurement must operate within a range of regulations and policies established to accomplish desirable social as well as economic financial and public audit requirements (Thai, 2005).

The benefits of e-Procurement have been verified by many leading companies worldwide and e-procurement is a significant tactic in most companies' e-Business strategies (Croom, 2005). The consensus is that e-Procurement benefits organizations with respect to procurement cost and process efficiency associated with procurement activities (Choudhury & Hartzel, 2008). This is because web-based e-Procurement solutions can support four major B2B tasks in organizations: search, processing, monitoring and control, and coordination (Croom, 2005).

The rise of e-business in the late 1990's led to the development of new opportunities related to procurement: e-procurement, spend management, outsourcing and joint product design (Baquero, 2005). The advent of the Internet as a business systems platform has been a catalyst for major changes in the operation and status of organizational procurement. Information Technologies have changed the way organizations and governments operate. As noted by Baily et al., (2005), the majority of organizational spending consists of purchasing. In order to decrease the total costs spent on purchasing process, internet technologies are used and e-Procurement has become popular to implement in the latest era by both governments and enterprises. Although the

opportunities for improvement seem abound, both private and public sector are still cautious as far as the implementation of electronic technologies is concerned Caldwell et al., (2007).

According to (Soudry, 2007), 60% of Information Technology application in procurement initiatives and projects do not deliver the expected benefits. Despite the great benefits of e-procurement technologies, their implementation is still at their early stages (Aboelmaged, 2010). A variety of factors may affect a firm's decision to adopt and implement a particular ICT. In consolidating prior studies examining innovation, (Aboelmaged, 2010) classified variables that potentially influence ICT adoption and implementation into five broad categories: individual, task and innovation related, organizational and environmental characteristics. Patterson et al., (2003) also showed that the following organizational and environmental factors positively affected the implementation of ICT in SCM: organizational size; decentralized organizational structure; supply chain strategy integration; transactional climate and supply chain member pressure, and environmental uncertainty.

Kaufmann, (2009) also suggested that these factors may be important to differing degrees depending on the context or technology. For example, individual factors such as age or education are often more relevant with individual adoption of technology rather than organizational innovation whereby decisions are made by committees. As this study examines the organizational implementation of e-procurement systems, the focus is limited.

### Statement of the Problem

In the modern competitive business environment, organizations need to embrace information communications technology in order to remain competitive. A number of public sector agencies worldwide have identified E-Procurement as a priority government agenda and have implemented or are in the process of implementing e-procurement systems (Kishor et al, 2006). According to ROK, (2009), the five years ending 2007 had indeed been a period when government took bold steps to implement reforms under the Economic Recovery Strategy for Wealth Creation (ERS). As a result, real GDP grew steadily from 0.5% in 2002 to 7% in 2007 and per capita income increased from US\$ 430 to US\$735. E-procurement implementation was one of the strategy framework that have been identified to yield significant benefits for government in terms of procurement cost reduction, enhancing efficiency and fighting corruption considering that 60% of government expenditure is spent through public procurement.

Globally, 60% of Information Technology applications in public procurement initiatives and projects do not deliver the expected benefits, (Soudry, 2007). Despite the great benefits of e-procurement technologies, its implementation is still at early stages (Aboelmaged, 2010). Studies done locally on the implementation of e-procurement have concentrated on other sectors other than the government ministries, (Kangogo & Gakure, 2013; Odago & Mwajuma 2013) &

Omany et al., 2013). According to Kangogo and Gakure, (2013), private entities such as Nation Media Group and Second-hand Motor vehicle importers have successfully embraced the use of e-procurement technology. This diverse nature of the outcomes in implementation of e-procurement systems may have attracted a number of researchers who want to understand the reasons for this diversity. Kishor et al, (2006) concluded that if e-Procurement initiatives in the public sector are to assist the development of e-procurement across the information economy, there should be wider discussion on what constitutes the critical success factors (CSF). A million dollar question is that despite numerous benefits on the use of E-procurement in the government, its implementation has largely been slow. Therefore there exists a gap of knowledge on factors affecting e-procurement implementation in the government ministries. This study is therefore intended to bridge the knowledge gap by seeking to examine factors affecting implementation of e-procurement in government ministries in Kenya.

## LITERATURE REVIEW

### Empirical Review

According to Van, (2006), e-procurement is more likely to be beneficial in dispersed supply chains as it helps coordination of procurement activities. Different actors in supply chains have got different power, legitimacy and urgency to implement e-procurement and e-procurement can have an effect on trust in supply chain relationships. Different industries show different propensities to e-procurement adoption, related to existing use of information exchange infrastructures prior to the advent of the internet (Odhiambo & Kamau, 2003). The greatest benefits of e-procurement occur when its application is fully integrated throughout the supply chain (Venable et al., 2005). Some literature has pointed out e-procurement is more likely to be adopted if it is perceived that suppliers have capability to deal with it.

The potentials of e-procurement have already been proven in a number of studies. (Aberdeen, 2011). According to these studies, e-procurement enables companies to decentralize operational procurement processes and centralize strategic procurement processes as a result of the higher supply chain transparency provided by e-procurement systems. A company's procurement function is subdivided into strategic and operational processes since activities and priorities in these two areas are entirely different. Prior to e-procurement, strategic procurement often had to deal with administrative routine work as well, such as individual transactions, converting purchase requests into purchase orders or ensuring the correct allocation of invoices received, (Kaufmann, 2009). Despite the potentials promised by the vendors of such systems, e-procurement got off to a slow start. Although the adoption of e-procurement has rapidly increased in recent years, companies face different challenges associated with the advent and use of e-procurement.

E-procurement adoption has to be managed well to achieve the firm's performance goals. There are several key success factors, related to both the competency of the e-procurement service provided by an online auction intermediary and to the organization's own internal capabilities. Johnston (2005) argues that one key success factor relating to e-procurement is technical capability of the system. Technical service quality in terms of system quality (security, reliability, easy to use, accessibility) and service quality (e.g. responsiveness of service). In addition, trust in the service provider is another major success factor for electronic service adoption.

Although Kishor et al., (2006) cautioned that increased use of information technology may not improve the level of trust between buyer and sellers, many scholars have shown that increased use of e-procurement can enhance the buyer-seller relationship. The greater use of e-procurement and inter-organizational systems can enhance trading partners' relationship and the online auction intermediary can be considered one of the trading parties of the e-procurement system (Archer & Yuan, 2010).

Organizational factors also have a major influence on the deployment of e-procurement (Croom & Brandon-Jones, 2007). Organizational readiness is an important driver for increasing internal process improvement, enhancing learning and innovation including the knowledge of purchasing personnel, their computer skill and resources. Management support is another key influence on new electronic service adoption (Archer & Yuan, 2010). Positive management support for e-procurement can ensure system adoption success. Training is the best support to enable personnel to use the e-procurement more efficiently. Croom and Brandon-Jones (2007) found that governance structure is one key success factor of e-procurement implementation management.

## RESEARCH METHODOLOGY

A descriptive research design was used in this study. In this study, the target population was obtained from the employees of the National Treasury Kenya. This study produced both quantitative and qualitative data. Once the questionnaires are received they were coded and edited for completeness and consistency. Descriptive statistics includes statistical procedures that were used to describe the population of the study.

## FINDINGS AND DATA PRESENTATION

### Regression Analysis

In this study a multiple linear regression model was implemented to identify the relationship between the four independent variables and the dependent variable which is the E-Procurement Implementation. The researcher applied the statistical package for social sciences (SPSS) to

code, enter and compute the measurements of the multiple regressions for the study. The finding of the study is as shown in table 4.9 below.

**Table 4. 1: Model Summary**

Model	R	R Square	Adjusted R <sup>2</sup>	Std. Error of the Estimate
1	.860 <sup>a</sup>	.739	.716	0.69097

#### Source, Author (2014)

All the four independent variables that were studied, explain only 71.6% of the E-Procurement Implementation as represented by the adjusted R<sup>2</sup>. This therefore means that other factors not studied in this research contribute 28.4% of the E-Procurement Implementation. Therefore, further research should be conducted to investigate the other examine factors affecting implementation of e-procurement in government ministries in Kenya (28.4%) towards E-Procurement Implementation.

#### 4.8 Analysis of Variance (ANOVA)

In trying to test the significant of the model, the study used ANOVA. From table 4.10 the significance value is 0.001 which is less than 0.05 thus the model is statistically significant in predicting how budgetary allocation, skilled manpower, government policy and organizational structure affect implementation of e-procurement in government ministries in Kenya. The F critical at 5% level of significance was 2.5365. Since F calculated (value =3.916) is greater than the F critical, this shows that the overall model was significant.

**Table4. 2: Analysis of Variance (ANOVA)**

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	0.196	4	0.249	3.916	.001
	Residual	1.762	56	0.034		
	Total	1.958	60			

#### Source, Author (2014)

#### Multiple Regression

As per the SPSS generated;

$Y = \beta_0 + \beta_1X_1 + \beta_2X_2 + \beta_3X_3 + \beta_4X_4 + \varepsilon$ ) become:

$$Y = 1.830 + 0.165 X_1 + 0.502 X_2 + 0.118 X_3 + 0.385X_4$$

The regression equation above has established that taking all factors into account (budgetary allocation, skilled manpower, government policy and organizational structure) constant at zero, implementation of e-procurement will be 1.830. The findings presented also shows that taking all other independent variables at zero, a unit increase in budget allocation will lead to a 0.165 increase in implementation of e-procurement; a unit increase in skilled manpower will lead to a 0.502 increase in implementation of e-procurement; a unit increase in government policy will lead to a 0.385 increase implementation of e-procurement and a unit increase in organizational structure will lead to a 0.118 increase in implementation of e-procurement. This infers that skilled manpower influence implementation of e-procurement most followed by government policy, then budget allocation while organizational structure had the least influence on implementation of e-procurement. This notwithstanding, all the variables were significant as their P-values were less than 0.05. According to von Hippel (2004) to in the case of non regular public procurement such as innovative public procurement, the conditions are not the same as in regular procurement. In contrast to mainstream economics, innovation theory treats public innovative procurement as a special case of user-producer interaction. This means that the process is not regarded as the result of anonymous market process as a mainstream economics perspective would suggest, but as the result of user- producer cooperation and information sharing. This understanding is also emphasized in the systems of innovation, where innovation is seen as a complex and interactive process influenced by many factors such as budgetary allocation, skilled manpower, government policy and organizational structure employee training, suppliers involvement, top management commitment, infrastructures among other factors and due to these characteristics, firms almost never innovate in isolation (Edquist, 2007).

**Table4. 3: Regression Coefficients**

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.830	6.385		13.756	.000
	Budget Allocation	.165	.063	.176	-2.633	.010
	Skilled	.502	1.344	.252	9.824	.000

Manpower					
Government Policy	.385	.043	.677	8.877	.001
Organizational Structure	.185	.032	.252	3.667	.002

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Source, Author (2014)

### Summary of the Findings

The objectives of this study were to determine how budget allocation affect e-procurement implementation in government ministries in Kenya, to examine the effect of skilled manpower on e-procurement implementation in government ministries in Kenya, to establish how government policy affects e-procurement implantation in government ministries in Kenya and to find out the extent to which organization structure affects e-procurement implementation in government ministries in Kenya with reference to the national treasury.

#### Budget Allocation

The study established that budget allocation determine the level of e-procurement implementation. The study showed that allocation of finances for e-procurement enhances its implementation and management financial support leads to implementation of e-procurement. The accessibility and adequacy of funds enhances implementation of e-procurement systems. The cost of buying computers and software also affect implementation of e-procurement to a big extent. E-procurement strategy requires enormous capital investments which may not be readily available. Process efficiency and process integration capabilities of a procurement process provide a significant contribution to the ministry's performance.

#### Skilled manpower

The study indicated that the availability of skilled manpower affect the level of e-procurement implementation to a great extent. The study revealed that Staffs years of experience in IT related activities and Staff training leads to effective implementation on e-procurement. According to Schiavo-Campo & Sundaram, (2000), organizations with competent skills are able to appreciate the need for introduction of new systems.

### Government Policy

The study indicated that government policy affect implementation of procurement policies. The study further showed that government of Kenya supports e-procurement through training as an incentive to encourage e-procurement implementation achieved. Government policy supports integration of all the ministries so that the benefits of e-procurement can be achieved

### Organizational Structure

The study showed that organizational structure affect implementation of procurement policies. The study found out that top management level support, ICT applications and tools by staff, defined job responsibilities, availability of e-procurement management systems, Organizational policies and Capacity of organization's staff affect e-procurement. From the literature, the structure of an organization affects not only the productivity and the efficiency of the economy but also the morale and job satisfaction of the work force. Therefore the Structure should be designed in such a way to encourage the willing participation of members of the organization and effective organizational performance.

### Conclusion

The study concluded that despite lack of a legislative framework and limited financial resources, information and communications technology (ICT) is not fully used to implement e-procurement in Kenya. The study concluded that government ministries have e-procurement policy to guide implementation of e-procurement. The study showed that most public sectors are reluctant to assess current e-procurement practices through regular auditing.

The study concluded the public sector has established specific goals for the e-procurement initiatives and communicates e-procurement needs to all stakeholders. The study concluded that a well-organized e-procurement system contributes to good governance by increasing confidence, transparency, competition and reduce the cost of doing business that public funds are well spent (Hui et al, 2011). The study showed that increased use of e-procurement can enhance the accountability and transparency in the public sector.

### Recommendations

The study recommended that there should be adaptation of the appropriate Information and Communications Technologies (ICT) necessary for successful implementation of procurement strategy. Therefore the Structure should be designed in such a way to encourage the willing participation of members of the organization and effective organizational performance. The study recommends that government ministries should established e-procurement team with IT expertise and improves their knowledge and skills through regular training. The study recommends the use of E-procurement solutions, the Internet technology platforms, and services that make corporate purchasing activities more efficient and cost effective.

### Suggestions for Further studies

The study was only carried out at the National treasury thus the same study should be carried out in the other government ministries to find out if the same results will be obtained. Equally there is room for further research on external factors that affect implementation of e-procurement in government ministries in Kenya.

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