



DETERMINANTS OF ELECTRONIC PROCUREMENT IMPLEMENTATION IN COUNTY GOVERNMENTS IN KENYA

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ABSTRACT

The purpose of this study was to establish the determinants of e-procurement implementation in county governments in Kenya, which are forty seven in total but the study targeted ten counties. These counties comprised of the first five counties with the highest budget allocation which include Nairobi, Turkana, Mandera, Kakamega and Bungoma and five counties with the least budget allocation. These are Lamu, Isiolo, Tharaka Nithi, Elgeyo Marakwet and Taita Taveta. The general objective of the study was to investigate the determinants of electronic procurement implementation in the county governments in Kenya. The specific objectives of this study was to investigate the role of technology in the implementation of electronic procurement in county governments in Kenya and to identify the role of organizational factors in the implementation of electronic procurement in county governments in Kenya. The study used structured questionnaire consisting of open and close ended questions which was distributed to the sample size of 146 respondents to collect data form accountants, technical team from ICT department and procurement officers in the counties mentioned. The study adopted Survey design through which both qualitative and quantitative data was collected. The study used descriptive method to analyze the data collected. For quantitative data analysis, coding and editing was done in electronic spreadsheet with the aid of Statistical Package for Social Sciences (SPSS). Primary data was collected using questionnaires. Pilot test was also carried out in three Counties in the country before the actual data collection to ensure validity and reliability of the research instruments. The study revealed that organization and technology had a great effect on e-procurement implementation. Technological factors were identified to be having the most significant effect in the e-procurement implementation in county governments. The study recommended that e-procurement to be effective and become an important part of supply chain management the county governments should adopt progressive ICT policies to ensure supportive IT infrastructure is in place. Further research should also be carried out on the role of national government in implementation of e-procurement in the devolved units.

Key Words: Technology, Organization, E-procurement Implementation, County Governments in Kenya

INTRODUCTION

Electronic procurement is a phenomenon that started in the developed economies but due to the improvement in telecommunications and the development of the internet, it has been increasingly adopted in the developing world.

Pani and Agrahari (2007) define electronic procurement as the process of purchasing the goods and services needed for an organizations operation electronically. It entails acquisition by purchase, rental, lease, hire purchase, license, tenancy, franchise or by any other contractual means of any type of works, assets, services or goods including livestock or any other combination by a procuring entity electronically. Bailey, Farmer, Crocker, Jessop & Jones. (2008) adds that electronic procurement is done with a software application that includes features for supplier management and complex auctions.

According to Gunasekaran and Ngai (2008), it is clear that adoption of electronic procurement is still very low in the developing and underdeveloped countries. Thai, (2009) notes that one of the main reasons for an Electronic procurement venture is to reduce costs. Other benefits include; increased supplier competition, time saving, shortened procurement cycle, maintaining compliance, quicker evaluation and sustainability promotion, real time tracking of order status, electronic routing that eliminates the problem of lost documents and the requirement for manual tracking, reduced administration costs and automatic payments to suppliers.

The 2012 European Union Report states that organizations and individual business people have come to embrace it due to the integration benefits and the immense possibilities it brings about: collapsing space, distance and time.

Chege (2012) point out that the most common forms of electronic commerce in the Kenyan market are electronic procurement, electronic banking and mobile banking. Christiansen, Turkina & Williams, (2013) note that of the three, the internet based purchasing system has generated a lot of interest due to its ability to improve efficiency and transparency, thereby reducing the cost of operation within and between business parties . According to Cattaneo, Lifonti, Aguzzi, Bardellini, Sadee and Tax (2013), despite the benefits of electronic procurement as recognized by managers such as better coordination with suppliers, quicker transaction times, higher flexibility, better supplier integration, and lower costs not many county governments especially those located in marginalized and remote areas have been able to implement the e-procurement. With the advent of fibre optic technology, USAID partnered with Kenya to develop an E- Procurement system. There is no technology that is in place yet to enable the Government to take full advantage of Internet commerce. Therefore, this study seeks to answer the question: Is this one of the determinants that has led to the poor implementation of electronic procurement in county governments?

Overall Public Procurement in China represents over 20% of China's rapidly growing economy. The procurement activity in this economy is fragmented, inefficient, inconsistent and unevenly implemented. In its current state, the regulatory framework for government procurement in China is a drag on efficiency and innovation for the Chinese economy as a whole and therefore the government decided to adopt electronic procurement in order to streamline the public procurement. (EU Chambers of commerce, 2016)

In Japan, the public procurement market is one of the huge potential, with the European Union estimates ranging from EUR 550 Billion to EUR 565

Billion with the main export goods being cars, electronic devices and computers. The EU companies that are presently active in this market are primarily larger global players, with a sizeable presence in Japan. In Japan, the majority of government procurement is conducted via competitive tendering procedures. (www.eubusinessinJapan.eu).

Public procurement is a linchpin for good governance and effective public service delivery, both of which are critical to sustainable development in Africa. Today, many countries in Africa are strengthening procurement to address weaknesses in public sector governance which has become a priority. Electronic procurement has proven itself to be one of the more effective and efficient tools for bringing good governance to the procurement process. (Hassan, 2015)

In Tanzania, the Electronic Government Agency was established under the executive Agencies Act, Cap 245 as a semi-autonomous institution charged with the mandate of providing, coordination, oversight and provision of electronic government initiatives and enforcement of electronic government standards such as electronic procurement to public institutions. Accordingly, the agency developed a five year strategic plan from 2012/2013 through 2016/2017 to provide guidance for effective and efficient e-procurement. (E-government agency, 2015).

In the past decades, the public procurement system in Kenya has undergone significant developments. From being a system with no regulations in the 1960s, and a system regulated by Treasury Circulars in the 1970s, 1980s and 1990s and the most recent is integrated financial management information system (IFMIS) which was rolled out in the public sector in 2003. The public procurement in the Kenyan perspective has been undergoing reforms starting with the Public

Procurement and Disposal Act 2005 that saw the creation of Public Procurement Oversight Authority (PPOA). According to E-government strategy paper, electronic procurement was one of the medium term objectives which were to be implemented by June 2007, but the process has been very slow. The manual processes are costly, slow, inefficient and data storage and retrieval is very poor (Papadopoulos & Kanellis, 2010). In the year 2011, the IFMIS was re-engineered to enhance stability and implementation in the public sector and later in the year 2013, it was launched in the county governments. In the year 2015, the PPAD Act 2005 was amended to give birth to public procurement and asset disposal Act 2015 which came into action from 7th of January 2016. The next step was the implementation of electronic procurement for the public sector. With the advent of fibre optic technology, USAID partnered with Kenya to develop an E- Procurement system. There is no sufficient technology that is in place yet to enable the Government to take full advantage of Internet commerce. With the Jubilee government taking power in 2013, their major manifesto was to digitalize all the government operations after looking at the previous governments and the problems they faced. With the ever changing technology in the global market, there is need for Kenya as a country to be at par with the changes for her to remain competitive. According to Mutuku & Nzuki (2015) E-business has become part and parcel of everyday life in many business circles as a large number of organizations are involved in one form of e- business or another such as electronic procurement. Technological emphasis has been done with the aim of enhancing transactional activities in order to gain operating efficiencies. During the launch of electronic procurement, President Uhuru Kenyatta said that electronic procurement is expected ensure public financial resources are used prudently and for the intended purposes. "Over the years, we have heard

complaints from Kenyans that the Government is being overcharged for goods and services that it purchases. By introducing transparency and accountability through electronic procurement, we expect to eliminate the abuse of our procurement system," President Kenyatta said.

County governments are devolved units which were proposed during the making of the new constitution and later on established on 4th 2013 after the general election. They are forty seven in total. This number is based on the delineation of administrative districts as created under the provinces and districts Act of 1992. The structure of county government includes the county assembly and county executive devolution in Kenya is the pillar of the constitution and seeks to bring government closer to the people, with county governments at the center of dispersing political power and economic resources to Kenyans at the grassroots. The primary objective of devolution is to delegate power, transfer resources and provide for extensive representation down to the local level. Therefore, the greatest expectation in the hearts and minds of many Kenyans is to regularly participate in their own governance in order to deliver the promise of faster developments and access to basic amenities and services, to foster national unity by recognizing diversity, to recognize the rights of communities to manage their own affairs and to further their development, to protect and promote the interests and rights of minorities and marginalized communities and to ensure equitable sharing of national and local resources throughout Kenya.

Statement of the problem

The internet had its origins in defense systems in the US in the 1970s. It then moved into universities in the 1980s and soon became the standard worldwide means of communication. The literature that is currently available shows that most of the

government procurement processes are still manual with the internet only being used for communications like e-mails and web browsing. (IRC, August 2007). Despite the benefits of e-procurement as recognized by managers such as better coordination with suppliers, quicker transaction times, higher flexibility, better supplier integration, and lower costs, according to Gunasekaran and Ngai (2008), it is clear that adaption of e-procurement is still very low especially in public sector.

The Kenyan government spends approximately 60% of the national budget. Both national and county governments have lost a lot of money in the procurement processes, conflict of interests, poor records keeping, inadequate transparency and accountability, transaction inefficiencies, delays in delivery and collusion with suppliers. Electronic procurement aims to improve efficiency in service delivery to the public and poor procurement planning strategies. (Onsongo, Okioga, Otieno & Mongare, 2012)

According to Minyori (2012) an electronic procurement system manages tenders through a web site that can be accessed anywhere globally and has greatly improved the accessibility of tenders. On 13th of August 2014, the president of the republic of Kenya launched the Electronic procurement system in county governments in Kenya that calls for transparency, accountability and prudent use of public resources to ensure Kenyans receive quality services and get value for their money. The Integrated financial Management Information System was first rolled out to government ministries in 2003. It was later rolled out to all the 47 counties in March 2014 following the establishment of devolved government units. Some of the procurement processes that can be facilitated through the IFMIS includes supplier management, requisition process leading to auto

creation of purchase order (PO), invoicing and electronic payment. However, it has not been a walk in the park for the county governments in the implementation of the IFMIS. County governments have been experiencing hard time when using the online procurement system due to constant breakdowns. The breakdowns of IFMIS begun three months after it was launched which led to inefficiency in service delivery (Makau, 2014).

Despite the mandatory requirement for the county governments to fully implement e-procurement, the quarterly reports from the controller of budget on counties' budget implementation review have consistently highlighted the failure of these counties to fully implement e-procurement in their operations. The reports also notes that operations of the county assembly have largely remained manual contrary to section 12(1) (e) of the PFA Act 2012. (OCOB, 2014)

It is against this report that the author decided to carry out this study to investigate the determinants of the e-procurement implementation in county governments. This study sought to find out the role of technology in the implementation of electronic procurement. This study also investigated if the organizational factors such as training have any contribution towards the failed adoption of electronic procurement.

Study Objectives

The general objective was to investigate the determinants of e-procurement implementation in county governments in Kenya. The specific objectives were:-

- To analyze the technological factors determining the e-procurement implementation in county governments in Kenya.
- To identify the effect of organizational factors on the e-procurement implementation in county governments in Kenya.

LITERATURE REVIEW

Theoretical Review

Theory Of Planned Behavior

Theory of planned behavior has been used a lot to examine the user's acceptance, in relation to the technology. According to Ajzen (1991) the Theory of planned behavior is a theory designed to foresee and explain the human behavior in specific contexts, for example, in information systems. The perceived behavioral control reflects the belief about the access to the resources and to the necessary opportunities to perform determined behavior (Júnior, 2006). As general rule, the stronger the intention to get involved in a behavior, the more probable should be its performance.

Ajzen (1991) understand that the behavior intention is reflected in the behavior if the person decide on his own will to adopt or not the behavior, what means, by the perceived control that he has about the desired behavior. The behavior is the product of a succession of cognitive and affective events, preceded many times by the conscious intention of acting. Therefore this theory helped the researcher to cover the first variable on what role technology plays in the implementation of e-procurement.

Organizational Theory

Modern organization theory is rooted in concepts developed during the beginnings of the Industrial Revolution in the late 1800s and early 1900s. Of considerable import during that period was the research done by of German sociologist Max Weber (1864—1920). Weber believed that bureaucracies, staffed by bureaucrats, represented the ideal organizational form. Weber based his model bureaucracy on legal and absolute authority, logic, and order. In Weber's idealized organizational structure, responsibilities for workers are clearly defined and behavior is tightly controlled by rules, policies, and procedures. Weber's theories of organizations, like others of the period, reflected an impersonal attitude toward the people in the

organization. Indeed, the work force, with its personal frailties and imperfections, was regarded as a potential detriment to the efficiency of any system. Although his theories are now considered mechanistic and outdated, Weber's views on bureaucracy provided important insight into the era's conceptions of process efficiency, division of labor, and authority. Organizational theory instigated the second objective on what role was the organizational factor in the implementation of e-procurement.

Conceptual Framework

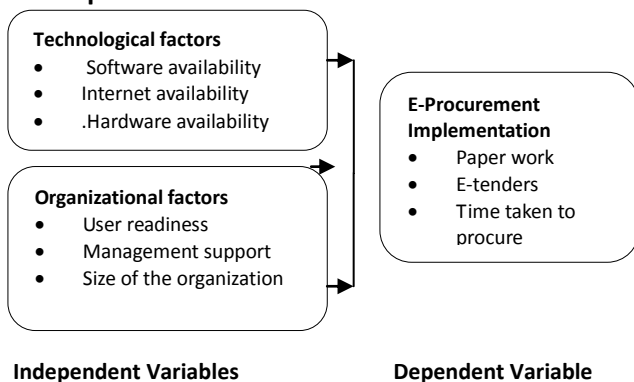


Figure 1: Conceptual Framework

Technological Factors

Technology is crucial for e-procurement implementation; it has enabled practices such as, Enterprise Resource Planning, Early in 2010. Analysts of technology research firm Forrester estimated that the global EP market would reach almost \$4bn in sales during that calendar year (Bartels 2010). The term E-Procurement refers to the information technologies that automate supply chain processes and associated finance processes in a comprehensive manner ("purchase-to-pay"). While proponents of EP have long argued qualitatively in favor of its benefits, are unaware of any empirical evidence regarding its actual impact on the operational performance of the two affected corporate functions,

Procurement and Finance, and on organizational performance overall.(Bartels, 2010)

Many people tend to accept that IT infrastructure is important for the implementation of E-procurement and that the IT infrastructure in many counties is still inadequate to support the implementation of E procurement (Mwajuma and Ondago, 2013). Reliability and capability of the organizations' IT infrastructure impact directly on the operation performance of E-procurement and that it links to all suppliers not directly over the internet but through existing EDI, automated fax or mail print outs.(Noor, 2013)

Makau (2014) points out that internet available need to be reliable enough to facilitate e-procurement activities of a company. Lack of technology cripples down the e-procurement system.

Organizational Factors

Organizational characteristics and organizational influences' are significant motivators to the use of e-procurement. Croom & Johnston (2003) observed that compliance by internal users is critical to the achievement of cost and efficiency gains from electronic procurement, and therefore internal customer satisfaction should be a key concern in the development, adoption and deployment of such systems. In other words, the level of compliance with e-procurement is strongly influenced by the general disposition of the organization as a whole to either electronic process redesign or the desire to gain perceived benefits from electronic procurement.

Odago and Mwanjuma, (2013) found out from a case study on the implementation of e-procurement in Kajiado County that management support was very crucial in implementing e-procurement in the county governments as it acted as the driving force behind the whole implementation process. Budgetary allocations of

the county governments are also necessary to support the full implementation of e-procurement.

Top management support and knowledge affect the rate and speed at which users' uptake the e-procurement technology since the top management is tasked with policy making and resource allocation. Moreover, when users of the system are involved in planning and introducing the e-procurement system they feel part of the large organization and therefore, they take it as their responsibility to ensure that the system functions effectively (Kangogo ,2013)

E-Procurement Implementation

According to Panayiotou, Sotiris and Tasiopoulos (2004), e-procurement is the acquisition of goods and services without the use of paper processes. According to De Boer, L., Harink, J., & Heijboer, G. (2002), Electronic procurement (E-procurement) is the application of Information technology in material and service procurement. It involves the use of various forms of Information Technology (IT) to automate and streamline the procurement process, improving efficiency and transparency, thereby reducing the cost of operation within and between business parties.

Implementation is the realization of an application or execution of a plan, idea, model, design, standard, or policy. According to Laudon K. and Laudon J. (2010) Implementation in the IT Industry refers to post-sales process of guiding a client from purchase to use of the software or hardware that was purchased. This includes requirements analysis, scope analysis, customizations, systems integrations, user policies, user training and delivery. These steps are often overseen by a project manager using project management methodologies.

Software Implementations involve several professionals that are relatively new to the

knowledge based economy such as business analysts, technical analysts, solutions architects, and project managers. This study therefore defined e-procurement implementation as the execution of an electronic system of managing the entire supply chain activities in the public sector.

Empirical Review

Technological Factors

A study conducted by Odago and Mwajuma in 2013 based in Kajiado county found out that many people tend to accept that IT infrastructure is important for the implementation of E-procurement and that the IT infrastructure in Kajiado county was inadequate to support the implementation of E procurement. Noor Ismail Shalle, Wario Guyo and Iravo Amuhaya (2013) on the study about factors affecting the implementation of e procurement in the public service in Kenya basing their study on the Ministry of Finance found out that the reliability and capability of the organizations IT infrastructure impacted directly on the operation performance of E-procurement and that links to all suppliers was not directly over the internet but through existing EDI, automated fax or mail print outs.

A study by Makau Joseph (2014) on challenges facing adoption of e-procurement in public sector in Kenya based on Nairobi water and sewerage Company found out that internet available was not reliable enough to facilitate e-procurement and that the company could not operate the e-procurement technology required this was due to the lack of IT infrastructure to support the system.

Organizational Factors

Odago and Mwajuma (2013) found out from a case study on the implementation of e-procurement in Kajiado County that management support was very crucial in implementing e- procurement in the county governments as it acted as the driving force behind the whole implementation process.

Budgetary allocations from the county governments were also inadequate to support the full implementation of e-procurement.

Kangogo and Gakure (2013) in their study on the implementation of e-procurement in the automobile industry found out that organizational factors were to do with user involvement and customer interaction. Top management support and knowledge affected the rate and speed at which users' uptake the e-procurement technology. Baily (2008), E-procurement (electronic procurement, sometimes also known as supplier exchange) is the business-to-business or business-to-consumer or business-to-government purchase and sale of supplies, work, and services through the Internet as well as other information and networking systems, such as electronic data interchange and enterprise resource planning.

According to Vaidya& Callender (2006) on critical factors that influence e -procurement implementation success in the public sector, the study identified a number of relevant variables for each CSF , It also analysed the relative importance of different CSFs and observes that organization and management factors are the most important

category for success of e-Procurement initiatives. It further identified that e-Procurement initiatives in the public sector are to assist the development of e-Procurement across the information economy.

RESEARCH METHODOLOGY

This study adopted a descriptive research design. Descriptive design according to Kothari (2011) is concerned with describing, recording, analyzing and interpreting the conditions that either exists or existed. The population for this study was drawn from ten counties, namely, Nairobi, Turkana, Mandera, Kakamega, Bungoma, Lamu, Isiolo, Tharaka Nithi, Elgeyo Marakwet, and Taita Taveta. This study adopted both primary and secondary sources of data.

RESEARCH FINDINGS

Technological Factors

The researcher requested the respondent to indicate their level of agreement on the aspects relating to information technology infrastructures that influence e-procurement implementation as shown in table 1.

Table 1: Technological Factors

	Underlying factor	Mean	Std. Deviation
Use of signatory in electronic document	0.21	4.021	0.757
Lack of adequate internet access	0.24	4.025	0.625
Data protection by the firm	0.445	3.65	1.118
Lack of technical standards	-230	4.255	0.525
Rise in security and authentication issues	0.053	4.165	0.785
Online marketing on e- procurement	0.323	4.513	0.865
Cost associated with adopting website	0.28	3.026	1.865
The level of taxation	0.323	4.513	0.865
Lack of system integration to fit in the supply chain	0.167	3.025	1.925
Amount of paper work	0.811	4.252	0.758
Data retention	0.729	3.954	1.265

Internet connection failure	0.652	3.569	1.255
Improved decision making	-0.053	3.655	1.119
Internet speed availability	0.167	3.567	1.092

From the findings most of the respondents agreed that computer technologies and rapid technology changes influenced e-procurement implementation to a great extent as shown by mean score ranging from a low mean of 3.025 to 4.513. Likewise, respondents pointed that information security risks and networking infrastructure influences e-procurement implementation to a moderate extent as illustrated by mean score of 3.569 and 3.655 respectively. The finding illustrated that availability of Information technology infrastructure lowered searching and filtering costs hence increasing the number of sourcing options beneficiary can access from the service provider. According to Mose, Njihia & Magutu (2013) private and public sector organizations had been utilizing information technology (IT) systems to streamline and automate their purchasing and other processes over the past years.

The study further requested the respondent to indicate whether their counties had adequate IT infrastructure. From the findings, 77% of the respondents pointed out that their counties had

adequate IT Infrastructure while the rest (23%) indicted that their counties did not have adequate infrastructure that could handle the volume of the work required in e-procurement implementation. This implied that technological resources were an important factor for successful adoption and implementation of innovation systems. Failed investments in technology infrastructure may cause operation breakdown and also lead to dissatisfaction among employees or the targeted group (Venkatesh, 2000). On the other hand, Turban et al, (2006) pointed that the development and implementation of electronic commerce business models such as a procurement portal in organizations was a challenge that went beyond mere technological functionality.

Organizational Factors

The second underlying factor was organization factors which had 9 underlying factors. Table 2 showed that these factors ranged from 3.02 to 4.2 which showed that organizational factors moderately influenced implementation of e-procurement in county governments.

Table 2: Organizational Factors

	Underlying factor	Mean	Std. Deviation
The size of the county	0.864	3.099	1.254
Financial Resources available to the firm	0.717	3.525	1.86
Lack of managerial support	0.233	4.033	0.725
The management support	0.831	3.523	1.86
Increase customization online	-0.298	4.207	0.715
The top management support	-0.019	4.172	0.787
Multiple access levels	0.232	3.025	1.254
Poor infrastructure in the firm	0.142	4.138	0.772
The cost of implementation	-0.316	4.026	0.725

The study sought to establish whether top management was committed to e-procurement implementation. Table 2 presented the results of

the findings on whether top management was committed to e-procurement adoption. Majority (77%) of the respondents indicated that the top

management was extremely committed on e-procurement implementation while 23% diverged with the majority opinions. If the e-procurement system did not have the full support of the top management team, there was every reason for it to fail. Considerable attention and support should be provided by senior management to ensure that the procurement reform had been well understood in the agency (Grandon & Pearson, 2004). Most of the respondent agreed that monitoring processes set by the top management influenced e-procurement to a great extent as indicated by a mean of 4.172. Further, respondents agreed that financial resources available to the firm influenced e-procurement to a great extent as shown by mean score of 3.525, lastly respondents agreed that coordination of activities and management support influences e-procurement to a great extent as depicted by the mean score of 4.033. World Bank (2003) illustrated that the executive management team was responsible for setting the vision and goals, bringing about collective commitment for change in process and organizational structures and formulating the policies and strategies necessary to put an e-Procurement initiative in place.

SUMMARY, CONCLUSION, AND RECOMMENDATIONS

The study established that e-procurement implementation in county governments in Kenya was significantly affected by technological factors. It implied that e-procurement implementation cannot be effective if county governments lack necessary technological factors. For instance, lack of e-procurement knowledge can occur when a county government has an older generation of employees that are change resistant regarding IT related issues, relying on traditional forms and means of procurement, which can be solved by training employees and by creating a knowledge sharing centre to spread the IT concept of e-procurement through the institution or key personnel.

Technology is an adoption driver, encapsulates IT infrastructure, information security risks and rapid changes of technology. It is an important determinant of information system adoption. The adoption of new technologies can bring significant changes to the work practices of an institution and resistance to change is a normal organizational reaction.

The study further indicated that software availability such as the IFMIS programmes which was the backbone of the e-procurement was necessary for the functioning and implementation of the e-procurement. Internet availability was also crucial in implementing e-procurement because according to this study, it was established that lack of reliable and strong internet could cause a breakdown in the e-procurement implementation. Moreover, computer hardware was also vital to the implementation of e-procurement. This included laptops, desktops, modems, ups and scanners.

Organizational Factors

Top management support, firm's size, skills and knowledge and organization policy were considered to be factors that influence an institution's willingness to adopt of e-procurement. The study noted that top management supported to be one of the critical predictors of e-procurement implementation in county governments in Kenya. Top management can stimulate change by communicating and reinforcing values through an articulated vision for the institution. Top management support is critical for creating a supportive climate for the adoption of new technologies.

According to this study, it was established that, the user readiness was one of the critical aspect an organization needs to look at before implementing e-procurement. People were mostly affected by the change should show some readiness to accept the change. The management should also offer

unwavering support to its people since the top management has all the resources which can ensure that e-procurement is fully implemented. The size of the county also affected the e-procurement implementation in the sense that big counties with high population needs more budget allocation to ensure that they have enough funds to cater for all their needs.

Conclusion

The study concluded that technological and organizational factors had a significant positive relationship with successful implementation of e-procurement in county governments.

Good technological and technical links between the potential suppliers and the county government would therefore increase the chances of successful implementation of e-procurement. Therefore county offices having good ICT resources, technical expertise, and proper organization and other factors held constant were likely to easily implement e-procurement and consequently benefit in terms of reduced costs and increased efficiency associated with e-procurement. Computer technologies and rapid technology change, information security risks and availability of robust networking infrastructure influences e-procurement implementation to a great extent.

Having the right hardware and software appliances of computers could increase the chances of implementing e-procurement in any county successfully. Internet availability also affected the implementation of e-procurement because it was the environment or the ground upon which the e-procurement operated. The available internet should be reliable and fast to ensure there are no delays when connecting with the stakeholders of the county as well as when placing orders.

In regard to organizational factors, the study established that developing employee skills, competences, operational flexibility and form of

training and monitoring and planning staff training influences e-procurement implementation to a great extent. Managerial commitment to the well-being of an organization, specifically to e-procurement, is accompanied by an increased ease of implementation of the e-procurement procedure in an organization.

Therefore companies which train and motivate employee by addressing their needs, would have committed workforce and therefore had ease of implementation of the e-procurement. Based on the findings, this study concludes that, improving employee skills, through training in ICT and e-procurement regulations and procedures results in increased employee competence. It also concluded that the budget allocation should be done according to the size and population density of the county and consequently resulting to ease of implementation of e-procurement.

Recommendations

The study recommended that for e-procurement to be effective and become an important part of supply chain management the county governments should adopt progressive ICT policies to ensure supportive IT infrastructure are in place for example enough computers, servers for backing up voluminous data regarding the e procurement. Government should play a crucial role in ensuring that IT infrastructure and thus technology is available to the public institutions so as to support e procurement strategies. This can be done through increased ICT budget allocations and consultative stakeholder roundtables.

There was also need for the County governments to provide continuous learning and education with comparative benchmarking opportunities to ensure the optimum use of the implemented e-procurement system. There is also need to establish and develop the IT competences of supply chain staff so as to acquire the requisite knowledge and

skills which are necessary for the successful implementation of a public e-procurement system. This could be done through periodic comprehensive training need analysis. The study also recommended increased budget allocations to ensuring costs associated to implementation of e-procurement are met. Particular benefits of e-procurement in the county governments were thought to include greater transparency in procurement through electronic publishing of tender notices and contract awards. This in turn was likely to enhance accountability and reduce the instances of corruption and abuse of office. This study therefore recommended that the government critically assess the baseline benefits and costs associated with the process of e-procurement implementation in order to understand and proactively develop the necessary strategies to deal with the probable outcomes of the process.

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Areas of further Research

The study sought to establish the determinants of e-procurement implementation in county government with a focus on ten county governments. The independent variables that were used in the study were organizational and technological factors. The researcher thus recommended further comparative research studies on the factors that influence implementation of e-procurement in the parastatals and private sector.

Further research should also be carried out on the role of national government in implementation of e-procurement in the devolved units. Further, research studies in this area of e-procurement implementation would improve literature on the topic as well as improve the capacity of government ministries, departments and agencies to fast track the implementation of e-procurement.

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