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DETERMINANTS OF ADOPTION OF E-PROCUREMENT PRACTICES: A CRITIQUE OF LITERATURE REVIEW

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ABSTRACT

Purpose: This study proposes sought to determine factors influencing the adoption of e-procurement practices.

Methodology: The paper used a desk study review methodology where relevant empirical literature was reviewed to identify main themes and to extract knowledge gaps. The study adopted a desktop literature review method (desk study). This involved an in-depth review of studies related to factors influencing the adoption of e-procurement practices. The search was done generally by searching the articles in the Article title, abstract, keywords. A second search involved fully available publications on the subject of e-procurement practices. The third step involved the selection of fully accessible publications. The drawing and interpretation of research findings and sense which is not a quantitative impact evaluation, was important in this context, which implies that qualitative and thematic analysis was most suitable in this study.

Findings*:* From the study, it was noted that E-procurement has not been fully adopted by all the agencies. Further, E-security, staffing, user acceptance and top management support were the factors that were found to be influencing adoption of e-procurement. Top management support and E-security are the major influence of E-procurement adoption especially in the public sector.

Unique contribution to theory, practice and policy: The study recommended that Top management support among the organizations should set goals, strategies and baselines that are necessary for the adoption of the E-procurement and follow up to ensure implementation. The study also recommended that due to the sensitivity of the data and the legal nature of orders and payments, security of data should be enhanced. Organizations should create personalized technology systems that create a demand adaptation of ICT at every level of the organizational operations

Keywords: *E-procurement, Procurement Process, E-security, staffing.*

INTRODUCTION

Background of the Study

Businesses face many challenges in today's fast-changing uncertain global climate (Edmiston, 2003). Many organizations have turned their attention to Electronic Commerce (eCommerce/EC) technologies to improve the efficiency of their business processes. The most prominent form of e-commerce system concerning interactions between businesses (Business-to-Business /B2B eCommerce) that has recently received attention in the literature is called electronic procurement (e-procurement) system (Hawking and Stein 2004). It automates an organization's purchasing process, reduces transaction costs, improves interorganizational coordination within the supply chain, improves relationships with business partners and offers competitive sourcing opportunities for the buyer organizations (Subramaniam and Shaw 2002). The widespread adoption of e-procurement systems by organizations in both private and public sectors will lead to national performance improvement and productivity growth and it has the potential to increase the gross domestic products (GDP) significantly (Hawking and Stein 2004).

Literature in the field of supply management and e-procurement discuss several benefits of eprocurement (Presutti, 2003). Previous literature (Edmiston, 2003; Panayiotou, et al., 2004) have identified major advantages with e-procurement, such as; reduction of supply costs, reduction of cost per tender, lead time savings, simpler ordering, reduced paperwork, decreased redundancy, less bureaucracy, standardization of processes and documentation, online reporting, clearer and more transparent processes, ensured compliance with procurement laws and regulations, minimization of errors, and easier access to information. Previous research also indicates that e-procurement may lead to increased quality and more adequate purchasing (Engström et al., 2008). In addition, e-procurement has been found to facilitate decentralization of procurement and, thereby, enable purchasing professionals to focus more efforts on strategically important issues (Panayiotou et al., 2004).

In Kenya, there are some organizations that have successfully embraced the use of eprocurement technology. For instance Nation Media group through their digital platform commonly known as N-Soko enables their clients to purchase products online (Gitahi, 2011). Awino (2011) conducted an investigation of selected strategy variables on firm's performance. The study focused on supply chain management in large private manufacturing firms in Kenya. It was established that most of the SCM strategies of large manufacturing firms in Kenya are not owned by individual firms but also other organizations within the SC that provide the required linkages towards the overall corporate performance of the manufacturing industry.

However, the adoption rate of e-procurement systems has been much lower than the initial prediction (Forrester Research 2000; Da Vila et al. 2003). In Australia, for example, only 10% of large Australian businesses are trading through some form of e-procurement systems (Stein and Hawking 2004). At the moment, there has been little evidence on the realization of e-procurement benefits since the involvement of multiple parties/stakeholders in eprocurement systems presents challenges in measuring the impact (Subramaniam and Shaw 2002). In addition, the meaning of success in the context of e-procurement is different from other contexts and, therefore, requires a unique measure which is not yet available (Chua et al. 2005). As introduction of e-procurement systems requires significant investment to replace existing technologies, without clear evidence on

the impact, many organizations are not motivated to adopt e-procurement systems (Subramaniam and Shaw 2002; De Vila et al. 2003).

The benefits of e-Procurement have been verified by many leading companies worldwide, and eProcurement is a significant tactic in most companies' e-Business strategies (Crook and Kumar, 2008). The consensus is that e-Procurement benefits organizations with respect to procurement cost and process efficiency associated with procurement activities. This is due to web-based e-Procurement solutions can support four major B2B tasks in organizations: search, processing, monitoring and control, and coordination (Subramaniam and Shaw, 2012).

E-procurement is defined as any ICT designed to facilitate the acquisition of goods by a commercial or a governmental organization over the Internet (Davila et al., 2003). E-procurement ICT include e-procurement software, B2B auctions, B2B market exchanges and purchasing consortia that aim to automate workflows, consolidate and leverage organizational spending power and identify new sourcing opportunities online (Davila et al. 2006).

Statement of the Problem

Organizations has been experiencing a myriad of problems including corruption, nepotism and mismanagement. For example a world bank report (2003) stated that a key area for corruption busting reform is the Civil society sector which when compared to similar economies are a drain on resources that could benefit the public and locus of corruption that thrives sector especially when coupled with lax oversight, mismanagement and fiduciary control procedures. E-Procurement is the only reforms to offer expenditure management and other support service in Non-Governmental Organization. The general story is one of loss, fraud, theft and gross mismanagement which are hampering improved and sustained performance and service delivery. In view of the myriad challenges of budgetary allocations, staffing, and deterioration and near collapse of infrastructure, negative admissibility on activities of international Organization, coupled with actual and perceived concerns regarding safety and security results in negative publicity affecting Organization efforts (Emiliani et al., 2004). Organizations have been experiencing challenges on their procurement performance but organizations which have enhanced their performance through embracing e-procurement strategy have been able to supersede others in terms of accountability and transparency (Subramaniam and Shaw, 2002).

Objective of the Study

The researcher intended to analyze factors that influence the adoption of e-procurement with a view of recommending measures to be put in place to enhance adoption of electronic procurement. This will benefit organizations adapting e-procurement system and other private organizations in general that are implementing the same system as they will be more enlightened on the factors influencing adoption of electronic procurement in order to reap maximum benefits.

LITERATURE REVIEW

Theoretical review

Transaction cost theory

Transaction cost theory could serve as a good starting point for the analysis, which explains why certain tasks are performed by firms and others by markets (Holland, 2008). Transaction costs can

be divided into coordination costs and transaction risk (Harrington, 2011). Coordination costs are the direct costs of integrating decisions between economic activities (such as search and bargaining costs). Transaction risk is associated with the exposure to being exploited in the relationship (Handfield, 2013). Uncertainty and asset specificity are two factors, which increase coordination costs and transaction risk, respectively (Nolan, 2009). The use of information technology has facilitated the reduction of coordination costs, which has been extensively documented in the literature (Handfield, 2013). For example, electronic market places, facilitated through IT, reduce the cost of searching for obtaining information about product offerings and prices (Handfield, 2013). Also, collaboration facilitated by information sharing can lower transaction costs (in particular coordination costs) as companies can thereby reduce supply chain uncertainty and thus the cost of contracting. Uncertainty in the context of supply chains and more specifically in manufacturing is caused by supply uncertainty, demand uncertainty, new product development uncertainty, and technology uncertainty (Koh, 2006). Zhu and Hong (2006) classified uncertainty as primary, competitive, and supplier uncertainty. Primary uncertainty is consistent with Nolan (2009) and refers to the "lack of knowledge of states of nature" (Zhu and Hong 2006). Competitive uncertainty arises from the innocent or strategic actions of potential or actual competitors (Handfield, 2013).

E -Technology Perspective Theory

E-procurement lacks an overarching definition and encompasses a wide range of business activities. For example, (Choi and Rungtusanatham, 2001),) state that e-procurement remains a first generation concept aimed at buyers, which should progress into e-sourcing and ultimately into e-collaboration. E-collaboration allows customers and suppliers to increase coordination through the internet in terms of inventory management, demand management and production planning (Lee, 2003). This facilitates the so-called frictionless procurement paradigm (Brousseau, 2000). This research recognizes the extensive nature of e-procurement and uses the definition provided by (Min and Galle 2002,) where e-procurement is a business-to-business (B2B) purchasing practice that utilizes electronic procurement to identify potential sources of supply, to purchase goods and service, to transfer payment, and to interact with suppliers. The authors believe that this definition provides the scope to investigate the basic level of e-procurement in the Irish ICT manufacturing sector. The internet has been widely adopted by companies with the aim of improving performances both in internal processes and in processes going beyond their boundaries. Despite the fact that business-to-business (B2B) trade has enjoyed a quieter existence online than business-to-consumer (B2C) (Barratt & Rosdahl, 2002) the benefits of e-procurement in a B2B setting are significant (Min and Galle, 2001),). Indeed it has been claimed that e-procurement has become the catalyst that allows companies to finally integrate their supply chains from end-to-end, from supplier to the end user, with shared pricing, availability and performance data that allows buyers and suppliers to work to optimum and mutually beneficial prices and schedules (Morris et al, 2003).

Empirical Review

Research into the uptake and application of eprocurement has focused on a number of themes, as identified by Schoenherr& Tummala (2007) who noted that early research into e-procurement focused on EDI, the automation of formerly manual to automated processesand the impact on the business environment.Articles appearing in 2001 dealt primarily with market transformation issues

inherent in the electronic revolution, advantages of e-procurement, and recommendations and advice on successful implementations (Rajkumar, 2001).

From a sector perspective, Schoenherr & Tummala & Tummala (2007) noted that a diverse range of sectors have been researched, however, it is interesting to note that only 13% of articles relate to the government sector. Alongside these general inhibitors a number of specific inhibitors havebeen identified which relate to a specific sector. For example Panayiotou et al (2004) has noted that the inhibiting factors affecting the adoption of eprocurement in the Greek public sector includes the complexity of goods/services procured, the need fortransparency in procurement, the determinantsposed by public policy and the regulatory and legal constraints faced by public sector organizations.

The literature (Henriksen & Mahnke, 2005) reveals that these barriers and requirements tend to increase within the public sector, mainly due the impact of different economic and social factors, which influence the public domain with respect to the private sector (Gichoya, 2005). These differences have resulted in a number of specific regulations and standards that have been developed for public e-Procurement: which requires that a bureaucratic procedure be followed due to the nature of the institutions involved (Leukel & Maniatopoulos, 2005) and embraces audit, accountability and compliance standards with national and international rules to ensure supply competition and transparency in the awarding of contracts. Croom & Johnston (2003), in their research of e-procurement in the UK public sector estimate that savings of the order of 5 – 20% are achievable in the cost of materials, with savings of the order of 50 – 70% can be achieved in relation to administration. More recent research by Puschmann & Alt (2005), in the private sector, noted that the introduction of e-procurement resulted in administrative savings of the order of 50 – 80%, however, they conclude that this range of potential savings may not be applicable to other sectors (e.g. the public sector) given the difficulties in reducing staff numbers.

Muchelule and Shalle (2017) conducted a research on the determinants of E-Procurement Adoption in the Kenyan Public Sector at Kakamega County. Both primary and secondary data was used for the study. The research study used a questionnaire as a key instrument for primary data collection. Qualitative data was analyzed through content analysis. Some of the determinants arising while responding to these technological changes include lack of employee competence and the legal framework. From the study, it was revealed that employee competency and the legal framework was a challenge to eprocurement adoption in the organizations under review. The study recommended that among others, due to continuous turnover of the employees', continuous training for the incoming staff was required on eprocurement. In addition, formal recognition should be encouraged. Integration of the organizations system and those of the suppliers, demonstration of the positive impact of the system, and installation of linkages between all Governments agencies should be encouraged.

Tsuma and Kanda (2017) studied the factors affecting the adoption of e-procurement systems among international NGOs in Kenya. This research based its objectives on four procurement related factors on e-procurement; organization factors, innovation related factors, supply factors and strategic factors. The research shall adopt a descriptive cross-sectional research design while targeting the 510 International NGOs in Kenya with their procurement operations office in Nairobi. The organizational factors influence e-procurement up to 82% of e-procurement, 93.5% the results indicated that innovation related factors influence the adoption of technology on

procurement operations, 94% NGO managers find strategic factors to influence adoption of e-procurement among international NGOs and over 72% found the influence to be at great extent and even beyond. Organizational structures and processes have a great influence on the adaptation of e-procurement systems in the organizations including their financial capacity, infrastructure and organizational power. Therefore, a buying firm with a large purchasing unit is more likely to possess the financial, skill resources and bargaining power to achieve the economies of scale required. Characteristics of innovation as perceived by the adopting firm were found crucial to impact on technology adoption.

Koech, Ayoyi and Mugambi (2016) studied the factors influencing adoption of e-procurement in Kenya's public sector. This study aimed to explore the barriers of e-procurement adoption in Kenya and to understand e-procurement success, and why success has not been achieved using desktop research design. Insights that will be obtained from systematic evaluations regarding the barriers of e-procurement systems will help to develop an instrument to measure success; identify barriers to achieving success and establish a framework to promote success of e-procurement in the public sector in Kenya. E-procurement system contributes significantly to national productivity growth through the removal of non-value added activities in procurement process. However, the adoption has been slow in Kenya and there is still a lack of studies assessing the impact of e-procurement.

Research gaps

Contextual gap is the gap presented as a result in differences in the contextual properties. Koech, Ayoyi and Mugambi (2016) studied the factors influencing adoption of e-procurement in Kenya's public sector with objective of understanding the barriers of e-procurement adoption in Kenya and to understand e-procurement success. This study's focus is exclusively on the factors of e-procurement adoption.

Geographical gap is a knowledge gap that considers, the untapped potential or missing/limited research literature, in the geographical area that has not yet been explored or is under-explored. Engström, Salehi-Sangari and Wallström (2008) studied the evolution of e-procurement within Swedish municipalities from 2001 to 2008. The study was based in Sweden thus presenting a geographical gap.

Methodological gap **is** the gap that is presented as a result in limitations in the methods and techniques used in the research (explains the situation as it is, avoids bias, positivism, etc.). Tsuma and Kanda (2017) studied the factors affecting the adoption of e-procurement systems among international NGOs in Kenya and adopted a descriptive cross-sectional research design while targeting the 510 International NGOs in Kenya with their procurement operations office in Nairobi. The study used primary data while the current study uses literature/desktop review thus presenting a methodological gap. Muchelule and Shalle (2017) conducted a research on the determinants of E-Procurement Adoption in the Kenyan Public Sector at Kakamega County and used primary and secondary data was used for the study. Qualitative data was analyzed through content analysis. The study adopted a descriptive research design which allowed him to analyze the interaction stated above. This study adopted a desk study.

METHODOLOGY

The study adopted a desktop literature review method (desk study). This involved an in-depth review of studies related to factors influencing the adoption of e-procurement practices. Three sorting stages were implemented on the subject under study in order to determine the viability of the subject for research. This is the first stage that comprised the initial identification of all articles that were based on factors influencing the adoption of e-procurement practices. The search was done generally by searching the articles in the Article title, abstract, keywords. A second search involved fully available publications on the subject of e-procurement practices. The third step involved the selection of fully accessible publications. Reduction of the literature to only fully accessible publications yielded specificity and allowed the researcher to focus on the articles that related to factors influencing the adoption of e-procurement practices which was split into top key words. After an in-depth search into the top key words (E-procurement, Procurement Process, Procurement systems), the researcher arrived at 10 articles that were suitable for analysis. The drawing and interpretation of research findings and sense which is not a quantitative impact evaluation, was important in this context, which implies that qualitative and thematic analysis was most suitable in this study.

CONCLUSION AND POLICY IMPLICATION FOR FURTHER STUDY

Conclusion

From the study, it was revealed that top management support, E-security, user acceptance and staff training influences adoption of E-procurement in the organizations under review. it can be concluded that E-procurement success would continue to be enhanced not only at the implementation phases, but also at latter stages in the adoption as long as top management support and commitment is high. Conversely, overall benefits of E-procurement system may be low in situations where top management support is either low or nonexistent. It is therefore evident that for the adoption of Eprocurement to be successful at all stages, the support of top organizational actors is required. Top management should therefore provide the necessary resources, communicate on time and be committed fully for smooth adoption of the system.

Most of the organizations keep their business information secret as a protective mechanism to effectively compete and remain competitive in the business environment. Public sector organizations on the other have limits to the amount and nature of information to be shared with other third parties. The balance between transparency, protection against unauthorized data disclosure, ensuring the authenticity of a data source and the impact of disclosure of procurement process remains unclear. The result also shows that user acceptance influences adoption of E-procurement. The acceptance of e-procurement systems among the users will lead to the success of the system since those involved will have a positive attitude in learning on how to use the system thus making it easy to incorporate most of the operations into the system. The ease with which users could use the e-procurement system involves the recognition by the senior management of the importance of the ease of using the eprocurement system for its staff and then chose an application that is easy to navigate. Automatic routing of purchase orders to appropriate managers for approval, access to e-catalogues, sending purchase orders to suppliers, producing expense report capabilities, encourages employees to accept and use the system without much hesitation.

From the study findings, it can be concluded that enforceability/legality electronic contracts is a critical determinant of adoption of e-procurement. In particular, practitioners worry whether in case of a legal dispute they can enforce such contracts. In addition, resistance to change and leadership, which are cultural issues, is of utmost importance in spearheading e-procurement adoption. The perceived threats of technology can be stumbling blocks in the adoption process. The study also concludes that acquiring the right platform to carry out e-procurement can determine whether the platform succeeds or not. This may vary from organization to organization depending on the nature and level of complexity of that organization. Security of an organization's IT infrastructure will determine whether e-procurement platforms succeed. Concerns about the online transactions regarding hacking, data encryption and cyber theft and attacks pose real threats to acceptance of e-procurement.

Recommendations

The state government legislates regulations to govern electronic contracts to foster acceptance of enforceability of e-procurement transactions and electronic evidence as evidence in a court of law. On the extent to which employee competency was a challenge in E-Procurement adoption, this study recommended that due to continuous turnover of the employees', continuous training for the incoming staff was required. In addition, for those organizations that had already been ISO accredited, training was compulsory and should be implemented. This should cover e-procurement and therefore mitigate the effects of this barrier. On the extent to which the legal framework was a challenge to e-procurement adoption, formal recognition backed by legislation of the electronic procurement transactions should be encouraged to accelerate the' rate of Implementation of the System within the public sector.

Recommendations for further study

Further empirical studies be conducted on the benefits of adoption of e-procurement in the public and private sector in Kenya. In addition there is need to determine other factors that pose a challenge in e-procurement adoption other than those covered in this study.

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