FACTORS AFFECTING ADOPTION OF E-PROCUREMENT IN PRIVATE COMPANIES IN TANZANIA: THE CASE OF TBL MWANZA PLANT

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ABSTRACT

E-procurement refers to the use of internet-based (integrated) information and communication technology (ICT) to carry out individual or all stages of the procurement process. The Overall objective of this study was to examine the factors affecting adoption of e-procurement strategy in private companies, taking TBL as case study. The Questionnaires, interview and documentary collection were used in this study: three factors reviewed and critically analyzed using quantitative research approach and presented in percentages, which are the Technological, Organizational, and Environmental factors (T-O-E). The study findings revealed ample evidence that Private companies in Tanzania can adopt e-procurement and enjoy the fruits of this new technology like customer service level improvement, procurement cost reduction, inventory optimizations, buyer/supplier collaboration by direct operational links and easier audits and compliance significantly by the institutions. The study conclude and recommends private institutions to develop Web Service-Based, domain-specific application framework that will enable private companies to quickly and easily build and deploy robust, secure, scalable, manageable, interoperable, portable and lawful e-Procurement. Applications using a good e-procurement software system as it would help them greatly reduce the time and effort required to complete purchasing transactions by eliminating traditional paper chain of requisitions, approvals, receiving, payment reconciliation and reduces face to face interaction hence lower risk of corruption.

Keywords: Procurement, E-Procurement, Technology, IT-Infrastructure, IT-System.

1.0 INTRODUCTION

The number of businesses and individuals in the world are discovering and exploring the Internet technology as is growing very fast. Through the past decades we have seen an increasing rate of globalization of the economy and supply chains (Kauffman, 2001). Private and public organizations have been utilizing Information Technology (IT) systems to streamline and automate their purchasing and other processes over the past years before the emergence of e-procurement. These systems have been highlighted by Dai and Kauffman, (2001) as Electronic Data Interchange which was launched in the 1960s and has been providing automated purchasing transactions between buyers and their suppliers. Enterprise Resource Planning (ERP) followed in the 1970s, and then came the commercial use of the Internet in 1980s. It was only in the 1990s that the World Wide Web with multimedia capability of the Internet - became widely enabled and provided the essential resource for the automation of procurement. Given the potential benefits of the Internet and other web-related technologies to revolutionize the procurement process, adoption of e-procurement has increased in most countries but at the same time the rate of adoption varies from country to country.

Batenburg (2007); The study of E-procurement adoption among European firms, observes that firms from countries with low uncertainty avoidance such as Germany and the UK are the early adopters of E-procurement, while countries more reluctant to change, such as Spain and France, have lower adoption rates. Tanzania Breweries Limited (TBL) began as Tanganyika Breweries in 1930. The company was renamed to Tanzania Breweries in 1964 when the countries of Tanganyika and Zanzibar united to become Tanzania. TBL was originally state owned, but in 1993 the process of privatizing the company started by selling 50% of the Tanzania Breweries company to SABMiller. The company currently operates breweries in Dar es Salaam, Arusha, Mwanza and Mbeya and eleven depots throughout the country (Tanzania Breweries Limited, (2011)).
Furthermore, scholars like Mchopa (2012), found that, adoption of e-procurement in Tanzania is still at infant stage where by some initiatives in large part have already been implemented by few private companies especially those owned by foreign investors. E-procurement is shaped in the context of three aspects, technological, organizational and inter-organizational environment. There are very few studies of e-procurement functionalities used by organization covering all three aspects of e-procurement context, i.e technology, organization and external environment.

According to Tanzania Breweries Limited (2011), procurement of spare parts is done internally because its parameters are well configured into the system and all of its replenishment were executed in paperless manner from requisition to order approval and printing. Other needs like that of raw materials, their parameters were not well defined into the e-procurement system. This made computations of production requirements more tedious and requisitions of them operated manually. Electronic payments to suppliers are not yet implemented. Payments are made by printing cheques or transfer notes depending on the value and are collected or delivered in person or transferred into suppliers account by physically visiting the bank. There is lack of integration with key stakeholders’ systems like that of Tanzania Revenue Authority (TRA), Shipping line, Ports and Commercial Banks. These institutions work independently and need to be visited physically whenever consignments are cleared and tracked.

Therefore, e-procurement at TBL has long way to go due to the fact that goods and materials are still obtained in traditional way (paper works) thus a lot of efforts need to be done to ensure that the full adoption of e-procurement is in place and yields the predetermined goals. For those reasons, the study at hand managed to find out the factors that affects adoption of e-procurement in private companies.

1.1 Statement of the problem
The study focuses at exploring factors which are affecting private companies to adopt e-procurement when sourcing their requirements. Both private and public organization escape from using modern technology (internet infrastructure) in procurement process and that lead to the longest process on acquiring organizational requirements causing purchase expenses to rise. This has pushed the authors of this paper to identify such factors and the corresponding remedies as recommendation once captured.

1.2 Objectives of the study
- To examine the factors affecting private companies to adopt e-procurement
- To determine of the possible remedies for the factors affecting e-procurement adoption in private companies
- To establish ways of adoption of e-procurement by private companies

1.3 Rationale of the study
The study expects to be of importance as it will contribute to the theoretical body of knowledge on how both private and public companies can make use of e-procurement hence minimizing unnecessary vices resulting from physical based procurement. Moreover, based on the understanding obtained from the study policy recommendations on how successful adoption of e-procurement can be achieved in both private and public companies. More specifically, the study will establish the role of resistance to change on the adoption of e-procurement system, the role of IT issues on the adoption of e-procurement system, the role of security of transactions on the adoption of e-procurement system in the private companies operating in Tanzania.

2.0 LITERATURE REVIEW
Suleman (2013) outlined the technological factors that influence the adoption of e-procurement as IT infrastructure, Perceived benefits and cost of implementation. Basically IT infrastructure means the required IT tools which may be equipment, software, hardware and related network which enable linkages of IT systems and significantly help in E-procurement implementation. Other technological infrastructures include stable power supply which will enable 24 hours access to e-procurement applications, undisputed network infrastructure, adequate servers and backups which will provide duplication of stored information and enable retrieval of information in case of system failure or natural disasters. On this, Veit (2011) highlighted that, in order for the e-procurement applications to be applied effectively requires good soft and hard technological infrastructures.
The benefits of e-procurement include reducing transaction costs, access to wider market, enhancing customer services, reducing transaction errors, improving relationship with business partners, reducing purchasing time and streamlining purchasing process while reducing paper work.

Another factor under technology is the perceived implementation cost which relate to the anticipated costs of using e-procurement. Tanner, C. (2008); suggest that the cost for introducing new technological solutions which support e-procurement may be high. Teo et al (2009) identify the costs relating to e-procurement implementation as administrative costs, training costs and the cost of maintaining e-procurement systems. They also argued that e-procurement may not suit all businesses that commonly lack both financial and non-financial resources. Organizations that perceive costs to be high will be reluctant to adopt e-procurement.

Top management support, firm’s size, employee knowledge and skills are the strongest factors that influence firms’ willingness to adopt E-procurement. The adoption of e-procurement depends on employees having the relevant information technology and management skills. Employee knowledge and skills can be acquired through training. Rahim (2008) described the benefit of training of IT systems to employees in two distinctive ways as; providing awareness to employees about why the IT system is needed and how it should improve their work and training helps employees to understand the features of the software and thus helps in developing familiarity with the system.

Wu et al., (2007) on the decision to use e-procurement they assert that, the decision to use e-procurement depends on the pressures exerted by other organizations that have already done so. Organizations use e-procurement in response to external pressures because of the fear of being left behind, to respond to the desire of their partners in the supply chain to be connected to them via e-procurement and because of written and unwritten norms. Therefore competitive pressure has been identified as one of the best predictors of organizational adoption of Information System innovations.

Every country has its own policy and regulations to monitor and facilitate organizations. In order to succeed in e-procurement implementation, companies and governments have to overcome existing legislative, regulatory and organizational barriers. Many countries have not made e-procurement laws part of the national legislative laws (European Union, 2012). The presence of government policy and regulations will enable the development of e-procurement standards which will be used by e-procurement community (buyers and suppliers) as the guidelines in conducting business, exchanging information and documents through e-procurement systems. Carayannis and Popescu (2005) suggest that a high professional standard on legislation and administrative framework is one among the key requirements to improve the efficiency, competitiveness, and responsiveness of e-procurement. E-Procurement standards ensure widespread adoption.

According to Dai and Kauffman (2001) procurement processes have become costly activities for business as a result, firms want to reduce costs via adoption of rapidly proliferating information technology, such as the Internet, that leads to electronic procurement. Indeed, this electronic migration of procurement is facilitating information sharing and process integration between business customers and their suppliers.

The challenges affecting private companies in adoption of e-procurement include among others; legal environment, IT unskilful, budgetary allocation, level of technology, turnover, Lack of confidentiality and untrusted e-commerce, unsteady power supply, political system, demographic factors, ICT connectivity and insecurity (Azanlerigu & Akay, 2015; Carayannis & Popescu,2005).

In an e-procurement process it is important to get goods in the right quantity and quality, at the right time, in the right place and from the right source for the direct benefit or use of corporations, or individuals. When you take a closer look at purchasing, you realize that often the greatest discrepancy between cost of procurement and actual item value can be found in low-value goods. This means that huge savings are waiting to be made in the purchasing department.

3.0 METHODOLOGY
This study employed different methods of gathering information from the respondents. Interview and questionnaires were the methods used to collect data. The study focused to explore the application of technology particularly internet for procuring organizational materials based in private companies where for this case TBL was taken as case study. The sample size of 166 employees was selected to complete the study. The samples were taken randomly due
to the fact that, employees are always busy with production activities in the particular production plant. The respondents were informed on the matter at hand, time and space were given to discuss and obtain various information which have been analyzed in the part of data finding and analysis. To explore the issue of e – procurement, the researchers used interviews as with respondents which aimed at factors, challenges and tangible benefits realized out of adopting the use of e-procurement in TBL. Finally the data were analyzed, interpreted and recommendations were made.

3.1 Interview
Interview is a method of collecting data which involves presentation of oral-verbal stimuli and reply in terms of oral-verbal responses (Kothari, 2012). The use of interview helped the researchers to gather valid and reliable data that are relevant to the study. Interviews were affected through the use interview guide as basic instruments prepared before going to the field. Both formal and informal interview were used to those with limited time to questionnaire especially individuals with managerial posts. From this group the researchers intended to capture more clarifications and detailed explanations on the factors affecting adoption of e-procurement, their effects, the strategies to overcome the obstacles facing adoption of e-procurement and the indicators of the e-procurement adoption at the organizational level. Probing questions were used to explore responses that were significant to the issues under the study. Interview questions played a greater role in providing more information of greater depth, effective control of samples and the language of interview were adopted to the ability or educational level of the respondents interviewed.

3.2 Questionnaires
Questionnaire contained a number of questions (few open ended questions and more closed ended questions) printed in definite order form, and the researchers tried to distribute them to the respondents in the course of data finding to answer them for their own time before the agreed time for collection. Questionnaires added value at great extent at collection of primary data as were demanded.

3.3 Sample and Sample size
Table 1 below summarizes the number of respondents of which the authors targeted to gather information from. TBL constitutes of 250 staff but the respondents were considered the most frequently users of the internet on procurement of organizational requirements constituting 166 employees under supply chain, management staff and user departments.

<table>
<thead>
<tr>
<th>S/N</th>
<th>Department</th>
<th>Total Sample</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Supply chain department</td>
<td>30</td>
</tr>
<tr>
<td>2</td>
<td>Management staff</td>
<td>20</td>
</tr>
<tr>
<td>3</td>
<td>User Department</td>
<td>116</td>
</tr>
<tr>
<td></td>
<td><strong>Total</strong></td>
<td><strong>166</strong></td>
</tr>
</tbody>
</table>


4.0 FINDINGS AND DISCUSSION
Findings in table 2 indicate rating of characteristics influencing adoption of e-procurement by percentage as were pointed by the respondents. To simplify rating procedures on the pointed factors, respondents labelled strongly disagree, agree, disagree and strongly disagree. In short those ticked disagree and strongly disagree were totally against the application of internet technology in procuring process (e-procurement) while the remaining agreed completely.

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Table 2: Rating of factors Influencing Adoption of E-procurement in Private companies (TBL)

<table>
<thead>
<tr>
<th>Adoption Factors of e-procurement</th>
<th>Strongly Agree</th>
<th>Agree</th>
<th>Disagree</th>
<th>Strongly Disagree</th>
<th>No Comment</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Compatibility factors</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1 Fitness of Business Operations</td>
<td>12.80%</td>
<td>42.60%</td>
<td>8.50%</td>
<td>8.50%</td>
<td>36.0%</td>
</tr>
<tr>
<td>2 Fitness of business partners operations</td>
<td>8.50%</td>
<td>10.60%</td>
<td>38.30%</td>
<td>4.30%</td>
<td>42.0%</td>
</tr>
<tr>
<td>3 Fitness of existing information system</td>
<td>6.40%</td>
<td>42.60%</td>
<td>10.60%</td>
<td>-</td>
<td>40.0%</td>
</tr>
<tr>
<td><strong>Complexity factors</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1 Easy for employees</td>
<td>12.80%</td>
<td>40.40%</td>
<td>19.10%</td>
<td>-</td>
<td>27.0%</td>
</tr>
<tr>
<td>2 Clear and understandable to business partners</td>
<td>2.10%</td>
<td>17%</td>
<td>31.9%</td>
<td>4.30%</td>
<td>49.0%</td>
</tr>
<tr>
<td>3 Using additional e-procurement is easy for employees</td>
<td>6.40%</td>
<td>14.90%</td>
<td>42.60%</td>
<td>4.30%</td>
<td>36.0%</td>
</tr>
<tr>
<td><strong>Technological infrastructures factors</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1 Connected to National fiber optic</td>
<td>27.70%</td>
<td>40.40%</td>
<td>4.30%</td>
<td>8.50%</td>
<td>19.0%</td>
</tr>
<tr>
<td>2 Firm existing infrastructures</td>
<td>27.70%</td>
<td>46.80%</td>
<td>14.90%</td>
<td>2.10%</td>
<td>08.5%</td>
</tr>
<tr>
<td>3 Enough computers</td>
<td>70.20%</td>
<td>14.90%</td>
<td>10.60%</td>
<td>2.10%</td>
<td>02.2%</td>
</tr>
<tr>
<td><strong>Perceived Benefits</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1 Reduction of transaction costs</td>
<td>4.30%</td>
<td>53.20%</td>
<td>8.50%</td>
<td>2.10%</td>
<td>31.9%</td>
</tr>
<tr>
<td>2 improved the data accuracy</td>
<td>12.80%</td>
<td>66.00%</td>
<td>4.30%</td>
<td>-</td>
<td>16.9%</td>
</tr>
<tr>
<td>3 Increase installation and administrative costs</td>
<td>6.40%</td>
<td>27.70%</td>
<td>12.80%</td>
<td>-</td>
<td>53.1%</td>
</tr>
<tr>
<td><strong>Organization Size</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1 In-house IT infrastructure, expertise and skills</td>
<td>61.70%</td>
<td>17.00%</td>
<td>14.90%</td>
<td>-</td>
<td>06.4%</td>
</tr>
<tr>
<td>2 IT experience</td>
<td>36.20%</td>
<td>38.30%</td>
<td>10.60%</td>
<td>2.10%</td>
<td>12.8%</td>
</tr>
<tr>
<td>3 Financial resources availability</td>
<td>34.00%</td>
<td>29.80%</td>
<td>10.60%</td>
<td>2.10%</td>
<td>23.5%</td>
</tr>
<tr>
<td><strong>Management Attitudes</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1 Resources allocation for e-procurement</td>
<td>19.10%</td>
<td>42.60%</td>
<td>14.90%</td>
<td>4.30%</td>
<td>19.1%</td>
</tr>
<tr>
<td>2 Employees Encouragement</td>
<td>2.10%</td>
<td>42.60%</td>
<td>10.60%</td>
<td>4.30%</td>
<td>40.4%</td>
</tr>
<tr>
<td>3 Top management awareness</td>
<td>25.50%</td>
<td>51.10%</td>
<td>-</td>
<td></td>
<td>23.4%</td>
</tr>
<tr>
<td><strong>User Involvement</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1 Employees involvement</td>
<td>8.50%</td>
<td>46.80%</td>
<td>14.90%</td>
<td>2.10%</td>
<td>29.8%</td>
</tr>
</tbody>
</table>

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In the Table 2 above, the total rating percentage for disagree and strongly disagree are found to be less as compared to the acceptance of the phenomenon, therefore all the characteristics identified were meaningful and sound like there is moderate level of e-procurement in the private companies.

Table 3 below shows about the possible benefits that these private companies will benefit if they strongly exercise on e-procurement. Table 3 presenting the rating characteristics of value obtaining by adopting e-procurement by percentage as were suggested by the respondents.


Likewise from table 3 above, the total percentage of disagree and strongly disagree appear to be less than that of strongly agree and agree. Therefore, it can be observed that, private companies are likely to benefit a lot in adoption of e–procurement in the areas identified in the research.

4.2 Discussion

Compatibility Factors: The analysis shows that, e-procurement is compatible with most organizations’ business operations and existing information of those organizations but not compatible with the supplier business operations; findings were in consistence with the literature read, adoption of e-procurement become difficult in either upward stream or downward stream of the organization. This study shows that e-procurement adoption is more difficult on side of upward stream. However it had been realized that some members of the company are neutral to some circumstances of the business which constitute more than 40%, meaning that they have got nothing to contribute about the usefulness of e-procurement.

Complexity Factors: The analysis reveals that, adoption of e-procurement is easy for internal employees to adopt but it is difficult for supplier to adopt new system due to lack of adequate knowledge and cost of operations.

Technological infrastructures Factors: This analysis showed that the existing technological infrastructures in most of the Tanzanian organizations were sufficient enough to start practicing e-procurement because the majority of these organizations possess enough computers already connected to national fibre optic connectivity and also they had good firm infrastructures that support e-procurement adoption.

Perceived benefits: Generally the analysis reveals that, through adoption of e-procurement in an organization revealed benefits in terms of reduction of transaction and administrative costs, and improved data accuracy in the procurement activities.

Organization Size: The analysis reveals that, the majority of the organizations are ready to embark on e-procurement in terms of existing in-house Information and Technology infrastructure, expertise and skills they have in their organizations, Information and Technology experience and financial resource capability.

Management attitudes: The findings of the study was consistency with the literature read. The adoption of e-procurement in any organization need support from the top management. Furthermore, the analysis showed that, top management had enough awareness of the e-procurement opportunities to be able to encourage their employees to practice in e-procurement and also allocate enough resource to enhance adoption of e-procurement.

User involvement: The analysis revealed that, by adopting e-procurement the organization would increase employee’s involvement and participation in procurement activities, and this would create transparency in procurement activities.

Coercive Pressure: The analysis revealed that, the only coercive pressure from Public Procurement Regulatory Authority (PPRA) is advising the Government of Tanzania to start using e-procurement but it is far on the side of business partners and also the country law (Public Procurement Act) is still silent on that.

Mimetic pressure: The analysis revealed that, the only mimetic pressure that derives organizations to adopt e-procurement was competition in the market and willingness to increase market share.

Normative pressure: The analysis revealed from the literature review that, the only mimetic pressure that drives the organization to adopt e-procurement is core value of effectiveness and efficiency. The analysis shows that, both downward stream and upward stream did not enforce the organization to adopt e-procurement.

Value Addition: The analysis revealed that, through adoption of e-procurement the organizations would reduce paperwork, achieve better compliance in the procurement procedures and reduction of errors, reduction of ordering cost, achieve more competitive bids, reduction of cycle time in the procurement process, standardize procurement procedures and increase the efficiency and transparency in procurement activities.

5.0 CONCLUSION AND RECOMMENDATIONS

5.1 Conclusion
The study sought to examine the factors affecting the successful adoption of e-procurement in the Private Companies in Tanzania. From the study findings, it can be concluded that enforceability/legality of 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, are 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.

5.2 Recommendations
The results of this study shed an interesting insight about e-procurement adoption in private companies in Tanzania. The study recommends the following;

First, the Government of Tanzania through policy makers should improve the legal infrastructure such as privacy law, e-signature and other cybercrime laws in order to reduce the crime through e-transaction. Secondly, continued focused on improving technical infrastructure is necessary for fully operation of e-procurement, procedures and internal systems which support e-procurement and lastly, e-procurement is a complex application which require great cautions from adopters while observing possibilities being conned electronically. The study also recommends conducting a study to find out the reasons why private companies do not incorporated all the procurement activities in e-procurement as observed at the case study of TBL-Mwanza plant.

REFERENCES