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Adaptation and Barriers of E-commerce in Tanzania Small and Medium Enterprises

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Abstract
E-commerce has been predicted to be a new driver of economic growth for developing countries. The SME sector plays a significant role in its contribution to the national economy in terms of the wealth created and the number of people employed. Small and Medium Enterprises (SMEs) in Tanzania represent the greatest share of the productive units of the Tanzanian economy and the current national policy directions address ways and means of developing the capacities of SMEs. Many factors could be responsible for the low usage of e-commerce among the SMEs in Tanzania. In order to determine the factors that promote the adoption of e-commerce, SMEs adopters and non-adopters of e-commerce were asked to indicate the factors inhibiting the adoption of e-commerce. The results show that technical barriers are the most important barriers followed by legal and regulatory barriers, whereas lack of Internet security is the highest barrier that inhibit the implementation of e-commerce in SMEs in Tanzania followed by limited use of Internet banking and web portals by SMEs. Also, findings implied that more efforts are needed to help and encourage SMEs in Tanzania to speed up e-commerce adoption, particularly the more advanced applications
Key words— e-commerce adoption, e-commerce adoption barriers, Small and Medium Enterprises, e-commerce adoption in SMEs in Tanzania

I. Introduction

The sluggish step of e-commerce diffusion in SMEs sector has led to a variety of studies. These studies have reported that SMEs are generally lagging behind to large organizations as far as the adoption and usage of e-commerce is concerned [Simpson M. & Docherty A., 2004]. (Fillis et al. 2003] observed the adoption of e-commerce by SMEs and found that SMEs could gain competitive advantage through adopting e-commerce as it could improve their market performance by having better access to the market. (Bolongkikit et al 2006) Found among other issues that SMEs markets needed a high degree of human communication. (Taylor & Murphy 2004) discussed that SMEs occupy small and clearly defined niche markets that do not need global connectivity through experimentation as inhibitors to e-commerce adoption. Organizations adopting e-commerce in emerging countries which includes Tanzania, face problems such as lack of telecommunications infrastructure, lack of qualified staff to develop and support e-commerce sites, lack of skills among consumers needed in order to use the Internet, lack of timely and reliable systems for the delivery of physical goods, low bank account and credit card penetration, low income, and low computer and Internet penetration (Kapurubandara M., 2009).
The main purposes of this study are to investigate the barriers to e-commerce adoption in Tanzanian SMEs and to suggest some recommendations for applying e-commerce successfully. The work begins by examining the nature of SMEs and e-commerce followed by discussing the barriers to e-commerce adoption based on previous research.

1.2. Small and Medium Enterprises (SMES)

Most of the international economies depend mainly on the role of SMEs in supporting the national economy in different countries. SMEs contribute significantly to the economies of the t, representing Tanzania around 70% of all businesses, and providing the main source of jobs and income for Tanzanian people. SMEs account for a greater proportion of economic activity and international development organizations are active (Economist Intelligence Unit, 2009). In Tanzania, SMEs historically played a relatively significant role in the process of economic development. The definition of SMEs is not uniform; it varies across countries and in some countries, the definition differs further between sectors. Number of people employed and size of capital, sales, assets, etc. are used to classify enterprises into micro, small, and medium. The Tanzanian Ministry of Industry (MOI) classified SMEs based on labor and investment costs criteria. Small and medium enterprises are defined as those having 4-50 workers respectively. As to the ceilings for investment costs, they are set at Tshs5 million and Tshs10 million for small and medium enterprises respectively (Ministry of Industry and Trade, 2010)

1.3. E-commerce

Electronic commerce refers to piloting business transactions over the Internet, which includes exchange of information of value in the form of products and services as well as expenditures, using web-based technologies (Fraser J., Fraser N. & McDonald F., 2000). (Eurostat, 2004) defined e-commerce as transactions conducted over

Internet Protocol-based (IP) networks or over other computer-mediated net-works (e.g. EDI if not carried out via IP). The Internet and e-commerce are transforming the way firms function by redefining how back-end operations are conducted (Terzi N., 2011). Studies of e-commerce issues in industrialized countries indicate that issues faced by SMEs in emerging countries can be totally different (Huff S. & Yoong P., 2000). Many SMEs in emerging countries are not accomplishing even minimal levels of e-commerce adoption, also the adoption of web-enabled transaction processing by small business has not been as widespread as would are expected Stockdale R.et.al., 2006). It has been revealed previously that the rate of e-commerce adoption in SMEs has been low.

1.4. . Barriers to E-commerce Adoption in SMES in Developing Countries

Although research indicates e-commerce offers feasible and practical solutions for organizations to meet challenges of a predominantly changing environment, the available studies related to SMEs in developing countries reveal a delay or failure of SMEs in adopting e-commerce.

1.4.1. Recent e-commerce barriers in SMEs

In the period 2005 and beyond, a number of studies were also abounding with new barriers on e-commerce implementation in SMEs. Kaynak et al, 2005) reported on the difficulty of finding and retaining qualified personnel with required skills and knowledge and the risk of dissipation of company specific knowledge. Whereas,(Bolongkikit et al.,2006) found among other issues that SMEs markets needed a high degree of human collaboration. In, (Kshetri., 2007) examined e-commerce barriers in terms of three categories: economic barriers, sociopolitical barriers and cognitive barriers. Whereas, (Rakhmanov, 2009) presented the main barriers affecting e-government development in Uzbekistan which negatively affected people's verdicts to use the technology and inhibited decision makers from implementing or adopting e-government initiatives. Recently,(Olatokun and Kebonye, 2010), considered the adoption of e-commerce by SMEs in Botswana and found out the factors that led to e-commerce adoption, the kinds of e-commerce technologies that were adopted and used, as well as the services provided with these technologies. Also, (Alshehri and Drew, 2010), examined the e-ready (readiness) of Saudi citizens to identify the challenges and barriers that affect the adoption of e-government services in Saudi society. They classified the barriers into five barriers: technical, organizational, social, management support and financial barriers. More recently, (Alamro and Tarawneh ,2011) brief the factors influencing e-commerce adoption in SMEs in Jordan into three contexts; these contexts were external environmental context; strong competition, global economy, regional trade agreements, extremely low labor cost in some countries, frequent and significant changes in markets and increased power of consumer. Organizational context; changing nature of workforce, management support, financial resources, increased importance of ethical and legal issues, increased social responsibility of organizations and rapid political changes and technological context ; increase innovations and new technologies, e-commerce benefits, e-commerce barriers and rapid decline in technology cost vs. performance ratio.

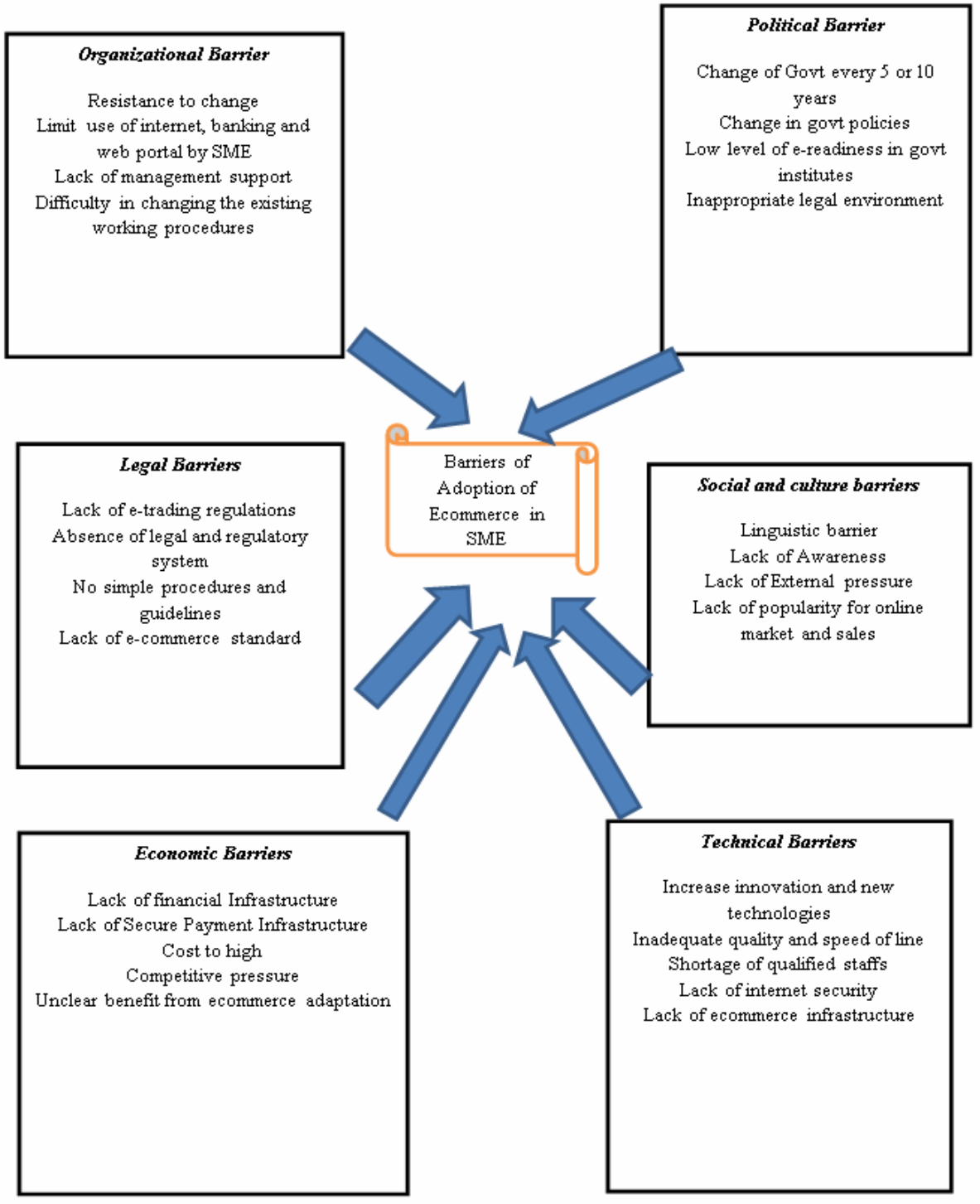
2. Research Methodology

The main objective of this work is to investigate the barriers to e-commerce adoption in SMEs in Tanzania. To fulfill the objective and achieve the goal, a framework for e-commerce adoption barriers in SMEs was used and a questionnaire was designed to collect the required information.

2.1. Framework for E-commerce Adoption Barriers in SMEs

E-commerce adoption is related to the level of ICT acquisition; therefore, investigation should be done with regarding to aspects affecting ICT adoption in SMEs. The available researches reveal significant factors dealing with ICT and e-commerce adoption in SMEs, thirty barriers to e-commerce adoption were gathered from the literature. Several experts were interviewed to help in grouping the barriers. All interviewees agreed to group the thirty barriers into six groups as shown in the conceptual framework in figure (1)

Figure 1: Conceptual Framework of Barriers of adopting e-commerce



2.2. Questionnaire Design

Designed questionnaire was used for data gathering. The questionnaire was designed based on the conceptual framework for e-commerce adoption barriers in SMEs. The questionnaire comprises of six groups with twenty six proposed barriers as shown in figure 1. The participants were asked to rate their perception towards the most important barrier that affects e-commerce adoption within their enterprises on a five-point Likert-type scale with anchors from —5- Strongly agre to —1- Strongly disagree. The group of barriers or single barrier receives strong or medium rating is accepted as an effective barrier on e-commerce adoption in SMEs.

The target population comprised small and medium enterprises (SMEs) in Dar es Salaam city. Stratified random sampling was used in selecting 150 enterprises working in the following fields: Wood and its Products, Paper Products, Printing & Publish, Electronic & Electrical Industries, Electricity & Power Production, Service & Maintenance Centers

In selecting the sample 3 conditions were applied: acceptance to participate and experience with e-service applications or at least has initiatives to apply e-commerce. Though only 95(ninety five) enterprises responded and agreed and participate in the study conditioning to hide their names. Questionnaires were distributed via Email were two copies distributed for each enterprise. To assure the participants quick and correct response; the questionnaire copies were sent directly to the owners and/or managers. The total numbers of received questionnaires were 147 copies out of 190 with total response rate 77.37 % as shown in table 1.

Table 1; Responded Ratio

Sector	**Numbers of Enterprises**	**Number of Questionnaire**		**Respond Rate**
		Circulated	**Received**	
service &maintenance	27	54	49	90.7
Wood and its product	21	42	29	69.0
Electronic &electric industries	12	24	17	70.8
Paper product and printing	22	44	33	75.0
Electricity and power production	13	26	19	73.0
Total	**95**	**190**	**147**	**77.3**

2.3. Results and Discussion

40% of the SME had websites as shown in table 2, but majority of them don't have online sales processing; order tracking; online procurement and online payment. The top application being employed by most of enterprises is e-advertising i.e.; displaying enterprise information, products and services offered as shown in table 3. The results show that there is no major dissimilarities exist between enterprises that adapting and non-adapting ecommerce, so all respondents were combined to make a single sample.

Table2; Website Custom

Sector	**Adopting e-commerce**	
	Yes	No
service &maintenance Electricity and	24.0	76.0
Wood and its product	33.3	66.6
Electronic &electric industries	64.0	34.4
Paper product and printing	33.3	66.6
Electricity and power production	39.6	60.4
Total	**38.8**	**60.8**

Table 3; ecommerce application usage

Sector	**Percentage**	
	In use	**Not in use**
Order and Delivery	42.1	57.8
Customer Support Service	26.3	73.7
Electronic Advertising	76.3	23.7
Electronic Marketing	60.6	39.4
Payment system	0.0	100.0

These findings matched the results of other studies such as :(Kartiwi & MacGregor 2007) in Indonesia; Kapurubanda in Sri Lanka;(Alshehri & Drew 2010) in Saudi Arabia;(Alamro & Tarawneh, 2010) in Jordan and (Olatokun & Bankole 2011) in Nigeria. From the study done by (El-Nawawy and Ismail 1999), after more than ten years, most of e-commerce barriers mentioned in this study were solved except for cost and legal issues still need some improvements.

3. Conclusion

Ecommerce prospective is to improve how enterprises operate internally and how it obliges to its customers. E-commerce is much more than a tool for improving cost-quality ratios in SMEs services. The prime of this research is to investigate the factors that influence and hinder the implementation of e-commerce in SMEs in Tanzania. Centered on the literature and the results of this research, the following conclusions are drawn.

In concern, the design and implementation of e-commerce, constructing a uniform strategic plot for e-commerce projects is the initial step for successful adoption of e-commerce. Though, findings indicated that most of SMEs in Tanzania have only adopted basic applications. They generally, adopted the most common e-commerce technologies which is e-mail and internet as an second marketing tools to display company‘s products and services information, rather than as an e-commerce platform to permit online transactions. Indeed, the adoption of e-commerce applications like online payment system, order processing is at a relatively low level. From the article findings infers that Tanzania should encourage and increase efforts on SMEs and speed up ecommerce adoption especially on advanced applications.

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