

E-Commerce Adoption and Growth of SMEs in Uganda

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Abstract

Information and communication technologies (ICT), particularly e-Commerce, are considered very important to the growth and competitiveness of businesses globally. SMEs too need to embrace innovative e-commerce strategies if they are to stay competitive, profitable and successful in local and global markets. Increased use of the Internet offers potential benefits to SMEs, such as cost reduction, improved operational efficiencies, access to new customers and enhanced business growth. However, SMEs, particularly in Uganda, have generally been slow in adopting e-commerce. Empirical research into the challenges SMEs in Uganda face in adopting electronic commerce is also limited. This study sought to explore the factors affecting e-commerce adoption among SMEs; and to establish the influence of e-commerce adoption on SMEs' growth in Uganda. A structured, self-administered questionnaire was used to collect data from 172 owners/managers of SMEs in the Kampala District in Uganda. The empirical results of this study indicate that e-commerce adoption significantly influence the growth of SMEs.

Keywords: E-commerce adoption, growth, small and medium enterprises

1. Introduction and Problem Statement

The socio-economic importance of small and medium enterprises (SMEs) is certainly unquestionable. SMEs are generally considered to be the mainstay of healthy economies and particularly the developing countries. SMEs comprise more than 40% of businesses globally and essentially serve as the main engine of job growth, often contributing 20-90% of employment (Kiraka, Kobia & Katwalo, 2013). In Uganda, it is estimated that SMEs employ over 80% of the population (Nangoli, Turinawe, Kituyi, Kusemererwa & Jaaza et. al, 2013), constitute up to 90 percent of the private sector, contribute over 70% to total gross domestic product (Asiimwe, 2017, p. 1) and contribute over 80% of manufactured goods output (Turyahikayo, 2015, p. 23). In spite of their contribution to economic growth, the survival rate of SMEs in Uganda remains very low (Asiimwe, 2017, p. 1; Turyakira, 2012, p. 1). For instance, it is estimated that about 2 in every 3 start-ups in Uganda cannot enjoy their first anniversary (UBOS, 2012). As such, poor saving culture, lack of entrepreneurial skills and their inability to exploit new opportunities for growth have been underscored as some of the main factors for the low survival rate (Nangoli et al., 2013).

In the current digital era, it is unlikely for any business to thrive without better use of information communications technology (ICT). Businesses, particularly SMEs, cannot grow faster unless they embrace technology (Kozak, (2011). Today, all businesses, regardless of their size, are faced with several competitive challenges. To cope with this phenomenon, managers are adopting e-commerce in their respective organizations in order to grow and remain competitive (Poorangi, Khin, Nikoonejad & Kardevani, 2013, p. 1593). SMEs in particular need to embrace innovative e-commerce strategies in order to stay competitive, profitable and successful in local and global markets (Awiagah, Kang and Lim, 2016). Indeed, e-commerce adoption has been earmarked as one of the innovations that could help SMEs to grow and survive. Increased use of the Internet provides potential benefits to SMEs, such as cost reduction, improved operational efficiencies, access to new customers and enhanced business growth (Standing, Standing and Love, 2010). Certainly, e-commerce makes communication within an organization faster and facilitates efficient management of the resources (Ahmad, Baker, Faziharudean, & Zaki, 2015, p. 555).

E-commerce essentially involves conducting business online. It can be defined as "conducting transaction via

Internet technology” which includes the activity of offering for sale of goods or services; receiving orders for goods or services electronically via internet such as email or digital form and/ or to not necessarily have online payment (Basu & Muylle, 2007). E-commerce is also viewed as the process of buying, selling, and exchanging information through computer networks; including the Internet (Turban, King, McKay, Marshall, Lee & Viehland, 2008). Relatedly, a more specific definition of e-commerce is provided by Turban, King, Lee, Liang and Turban (2010) who state that “e-commerce is the process of buying, selling, transferring and exchanging products and/or information using computer networks mainly the Internet and Intranets.” This is in line with Huseynov & Yildirim (2016) who define e-commerce as the process of conducting businesses through computer networks. Hence, e-commerce is about firms conducting business while utilizing a network of ICT, particularly the internet.

While the Internet-based e-commerce offers considerable prospects for SMEs to increase their customer base (Wanjau, Macharia and Ayodo, 2012, p. 76), the growth of e-commerce use by businesses is largely driven by large companies. In contrast with larger businesses, the adoption rate of e-commerce by SMEs is fairly low (Govindaraju, Wiratmadja, & Rivana, 2015). SMEs, particularly in Uganda, have generally been slow in adopting such initiatives. They could be unaware of the potential of e-commerce to enhance their business operations and growth. Although many studies have been conducted regarding e-commerce adoption, the majority were mainly carried out in developed countries (Kurnia, Choudrie, Mahbubur & Alzougool, 2015), and only a few focused on SMEs in developing countries. It should also be noted that many past studies on the factors that influence e-commerce adoption have been carried out mainly in developed countries; and there is little empirical evidence to explain the extent of e-commerce adoption among SMEs in developing countries (Ahmad et al., 2015, p. 556). Likewise, empirical research into the challenges SMEs in Uganda face in adopting electronic commerce is limited. Hence, this study sought to explore the factors affecting e-commerce adoption among SMEs; and to establish the influence of e-commerce adoption on SMEs’ growth in Uganda.

2. E-Commerce Adoption Factors That Influence SMEs’ Growth

It is indisputable that the e-commerce technology was initially designed to meet the needs of large businesses in developed countries. However, e-commerce adoption is still appropriate for SMEs in developing countries (Kurnia et al., 2015). Although several studies have been generally conducted regarding e-commerce adoption by businesses, there is a need to appreciate the factors influencing adoption of technology within the specific perspective of SMEs (Sakai, 2012). It is generally documented that e-commerce provides numerous benefits for businesses such as reduced cost, increased sales and productivity, extended market reach and increased customer loyalty (Turban, 2010) that are essential for SMEs growth. However, studies (Dubelaar, Sohal & Savic, 2005) have identified some factors that inhibit the adoption of e-commerce by SMEs, mostly in developing countries. These include lack of human resources; internal resistance; security issues; unready business partners; internal constraints; and lack of IT resources. According to Kotelnikov (2007), poor communication infrastructure; lack of ICT knowledge; lack of financial resources and a poor legal infrastructure are some of the factors responsible for the low adoption of e-commerce by SMEs particularly in developing countries.

Ahmad et al.; (2015, p. 555) reveal that e-commerce adoption by SMEs in developing countries is influenced by a number of factors including perceived relative advantage, perceived compatibility, managers/owner’s knowledge and expertise, management characteristics and external change agents. Accordingly, external change agent and perceived compatibility are the most significant. As such, external change agents mainly the government, external consultants and e-commerce solution providers play a significant role with regard to SMEs e-commerce acceptance. Likewise, the adoption is likely to fail if the existing infrastructure is incompatible with e-commerce technology (Ahmad et al., 2015, p. 566). This is in agreement with the findings of Alam & Mohammad (2009) who revealed that the technical compatibility positively influences the adoption of e-commerce of SMEs in developing countries. According to Jones, Packham, Beynon-Davies & Pickernell (2011), SMEs find it hard to adopt e-commerce mainly due to the persistent change of e-commerce technology and the varying needs of businesses.

According to Vilaseca (2013) and Premkumar & Roberts (2010), lack of awareness and cost are fundamental factors that hinder the adoption and use of technology by SMEs. Cost elements include training, maintenance, information systems and software (Giovanni & Mario (2013). SMEs are unlikely to adopt and use technology when the initial set-up cost is high (Dixon, Thompson & McAllister, 2012). This is in agreement with Paul & Pascale (2013), who argue that many SMEs, particularly in Africa, face specific challenges in the design of innovative strategies due to limited technological competencies and financial resources. They further identified perception of relative advantage, CEOs perception, CEOs characteristics, complexity, compatibility and firm size as factors that influence adoption and use of technologies by SMEs. Additionally, a study conducted on SMEs in

West Africa (Ghimire & Abo, 2013) reveals that adoption and use of technology by SMEs depends on the owner being the decision-maker. As such, e-commerce adoption and use is positively associated with the business size. Relatedly, Thong & Yap (2011) assert that SMEs owners are unlikely to adopt new sophisticated technologies if they are not used to the existing and simple ones. The same authors further disclose that perceived benefits, government and management support are vital factors that can influence SMEs to adopt e-commerce.

According to Mingaine (2013), the absence of knowledge-based employees is likely to hinder adoption of the e-commerce as long as the business owner believes that it can only be implemented by specialist staff. On the other hand, Sakai (2012) reveals that technical support and computing skills are significant factors that influence adoption and use of the technology. Relatedly, lack of staff expertise and commitment affects e-commerce adoption by SMEs because new technologies requires change in employee work attitude, qualifications, performance, and knowledge of e-commerce technology (Ghobakhloo & Tang, 2015; Zaied, 2012). A study conducted in Iran, Malaysia and India by Jahanshahi and Zhang (2013) revealed that security and privacy issues; lack of knowledge and understanding of e-commerce; and high maintenance costs were the main barriers faced by SMEs to adopt e-commerce in developing countries.

Based on the above discussions, it is clear that lack of effective e-commerce adoption by SMEs in developing countries is attributed to:

- inadequate financial resources;
- limited management support;
- perceived lack of security in Internet transaction;
- negative attitude towards technology and perception of relative advantage;
- limited technological competencies and technical support;
- persistent change of e-commerce technology;
- limited access to internet;
- managers/owner's expertise and commitment;
- inadequate infrastructure;
- poor maintenance of technological infrastructures;
- Government policies and regulations ; and
- limited support by government and other agencies.

3. Methodology

This section explains the research design and methodology that were utilised to address the objectives of this study.

3.1 Research Design and Approach

This study utilized a cross-sectional survey research design in which both quantitative and qualitative data were collected. Although quantitative data was basically targeted, qualitative data was collected to enable the comparison, augment and generalization of the findings before arriving at conclusions.

3.2 Sampling and Data Collection

From a study population of 314, a sample size of 172 SMEs was selected using Krejcie and Morgan (1970) sample size selection table. Simple random sampling technique was used to select 172 owners/managers of SMEs from Manufacturing, Trade and Services sectors in the Kampala District in Uganda. Kampala District was selected because it is central to the evolutions of technology in Uganda and the main technological changes are initiated in Kampala before they are extended to other areas (Nangoli et al., 2013). Furthermore, Kampala District was considered representative enough given the multiplicity of the different SMEs found there (UBOS, 2012). Top managers were purposively selected as key informants because they are knowledgeable about the processes within the SMEs. An interview guide was used to obtain data from them. Questionnaires were utilised to collect data from the rest of the respondents. The questionnaires which were adopted and derived from literature review had two sections. Section A sought demographic information relating to respondents using a nominal scale. Section B of the questionnaire consisted of the statements related to e-commerce adoption factors that influence SMEs' growth; using a five-point Likert-type interval scale (*1 = strongly disagree and 5 = strongly agree*).

3.3 Data Analysis

The data obtained from the questionnaires were subjected to Statistical Package for Social Sciences (SPSS) version 21 for statistical analyses to get the mean, standard deviations, regression and correlation analysis to establish the relationship between e-commerce and growth of SMEs. Qualitative data was analysed by comparing the findings and the descriptions with generalizations that already exist on the issues being investigated to establish whether they agree or not agree and giving possible explanations of the discrepancies before making deductions and implications of such findings.

4. Discussion of Results, Conclusions and Recommendations

The sections below present the results of the study.

4.1 Demographic Profile of Respondents

The study explored the different demographics of the SMEs and these included; category of SME, duration in business, gender, level of education, marital status and extent of e-commerce adoption. The vast majority of respondents was females (54.5%) under services sector (73.5), and had been operating between one and five years (70.5%). Most of the respondents (33.3%) had attained Bachelor's Degree and had adopted some form of e-commerce (74%). However, the study revealed that a good number of SMEs were not practically using e-commerce applications such as online ordering/ purchases, sales and e-banking.

4.2 Factors Affecting Adoption of E-Commerce

The study revealed a number of factors which generally impede e-commerce adoption by SMEs as indicated in Table 1 below.

Table 1. Factors that impede e-commerce adoption by SMEs

Statement	Mean	Std. Dev
Low internet penetration may limit the adoption of e-commerce.	3.70	1.232
Lack of secure payment infrastructures may inhibit the adoption of e-commerce.	3.52	1.346
Low readiness by our business partners to conduct business online limits the adoption of e-commerce.	3.38	1.340
Lack of necessary technical skills inhibits e-commerce adoption.	3.57	1.424
Lack of legal and regulatory systems for e-commerce hinders the adoption of e-commerce.	3.64	1.274
Inadequate e-commerce infrastructure inhibits adoption of e-commerce.	3.56	1.211
Lack of financial resources limits the adoption of e-commerce.	3.73	1.267
Unclear benefits of e-commerce lowers the adoption of e-commerce.	3.75	1.219
Low level of readiness among concerned government institutions limits the adoption of e-commerce.	3.72	1.239
Organizational resistance to change may hinder the adoption of e-commerce.	3.48	1.396
Lack of management support negates the adoption of e-commerce.	3.55	1.333
Failure to use local languages may inhibit the adoption of e-commerce.	3.44	1.406
High installation costs inhibit the adoption of e-commerce.	3.91	1.159
Lack of trade agreements hinders the adoption of e-commerce.	3.48	1.294

Results revealed that the common SMEs adoption of e-commerce appeared in form of management support of the use of e-commerce in business operations (Mean=3.53, SD=1.304) and having staff with sufficient experience in network based applications (Mean=3.4, SD=1.342). Results further indicated that aspects with the least felt presence of adoption were; firms handling orders online (Mean=2.89, SD=1.404); SMEs having a developed ICT infrastructure (Mean=2.84, SD=1.494); and organizations having a provision for online customer registration and log in (Mean=2.79, SD=1.344). Relatedly, most SMEs had not developed their ICT Infrastructure, and had unreliable computer networks and their websites were not interactive enough to enable full realization of e-commerce. Additionally, many SMEs had low speed Internet which could not easily allow for growth of e-commerce as majority could not handle orders online. It was also revealed that most of the SMEs lacked provisions for online customer registration and log in. The study further showed that there was minimal online interaction with business partners in most organizations. Most businesses had no clear vision on e-commerce and lacked staff with sufficient experience in network based applications. Hence, the findings clearly indicate that the

adoption of e-commerce is affected by internal and external factors, some of which are macro and others micro, thus the factors may at times be beyond the internal capacity of an organization to control.

4.2.1 The Relationship between E-Commerce Adoption and Growth of SMEs

The findings on the relationship between e-commerce adoption and growth of SMEs are summarized in Table 2 below:

Findings in Table 2 below reveal that the use of e-commerce had enabled some of the organizations to improve the market share. The use of e-commerce further contributed to increased profitability in the organizations where it had been adopted. Respondents also believed that e-commerce usage had led to increase in sales volume for those organizations which had implemented it.

Table 2. E-commerce adoption and growth among SMEs

Statement	Mean	Std. Dev
The use of e-commerce has enabled my organization to improve the market share.	3.55	1.462
The use of e-commerce has contributed to increased profitability in my organization.	3.55	1.452
E-commerce usage has led to increase in sales volume of my Organization.	3.45	1.468
The use of e-commerce has improved interactions with and among customers.	3.46	1.386
E-commerce has led to increased fraud in my organization.	2.83	1.352
The use of e-commerce has resulted into improved competitiveness of my organization.	3.44	1.373
The use of e-commerce has improved communication in my organization.	3.52	1.363
The use of e-commerce has led to new business opportunities in my organization.	3.48	1.363
The use of e-commerce has led to cost reduction in my organization.	3.32	1.430
The use of e-commerce has enhanced our linkages with business partners.	3.48	1.380

Relatedly, those organizations which had adopted e-commerce improved interactions with and among customers. However, respondents disagreed with the assertion that e-commerce had led to increased fraud and improved competitiveness for their organizations. It was noted that the use of e-commerce had improved communication in the organizations where it was established. Respondents revealed that the use of e-commerce had led to new business opportunities and cost reduction in their organizations. It was also confirmed that the use of e-commerce had enhanced organizational linkages with business partners.

4.3 The Regression Model for E-Commerce Adoption and Growth of SMEs

E-commerce adoption and growth of SMEs in Uganda was established using regression and correlation. Regression was used to explain how e-commerce adoption brings about a variance in growth of SMEs. The correlation was used to explain the strength and direction of the relationship between e-commerce adoption and growth of SMEs in Uganda as indicated in Tables 3 and 4 respectively.

Table 3. Regression model on relationship between e-commerce adoption and growth

Model Summary							
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate			
1	.789 ^a	.622	.619	.76485			
a. Predictors: (Constant), adoption of ecommerce							
ANOVA ^b							
Model		Sum of Squares	df	Mean Square	F	Sig.	
	Regression	121.510	1	121.510	207.709	.000 ^a	
1	Residual	73.710	128	.585			
	Total	195.221	129				
a. Predictors: (Constant), adoption of ecommerce							
b. Dependent Variable: growth of SMEs							
Coefficients ^a							
Model		Unstandardized Coefficients		Standardized Coefficients		t	Sig.
		B	Std. Error	Beta			
1	(Constant)	.570	.208			2.735	.000
	Adoption	.911	.063	.789		14.412	.000
a. Dependent Variable: growth of SMEs							

The above finding confirms that adoption of e-commerce greatly influences growth of SMEs by 62%; implying that there are other factors that account for the remaining 38% of the variance.

Table 4. Correlations between e-commerce adoption and growth

Correlations			
		Adoption of E-commerce growth of SMEs	
Adoption of e-commerce	Pearson Correlation	1	.789**
	Sig. (2-tailed)		.000
	N	128	128

** . Correlation is significant at the 0.01 level (2-tailed).

Table 4. above reveals results of correlation between e-commerce adoption and growth of SMEs where (R=0.789**, p< 0.005, n= 128). This implies that e-commerce adoption and growth of SMEs have a statistically significant positive linear relationship (p < .005). The direction of the relationship is positive (e-commerce adoption and growth of SMEs are positively correlated), implying that these variables tend to increase together (i.e. greater e-commerce adoption is associated with improved growth of SMEs). The magnitude or strength of the association is very strong (0.789). This finding is consistent with Abebe (2014) who reveals that SMEs that use e-commerce for business transactions attain greater sales growth compared to their competitors that do not use e-commerce.

The findings of this study are in agreement with previous studies by Ahmad et al., (2015, p. 566), Molla (2005) and Kotelnikov (2007) who assert that e-commerce success relies heavily on a number of technology infrastructures; lack of ICT knowledge; lack of financial resources and a poor legal infrastructure. The findings also revealed that most organisations lacked staff with sufficient experience in network based applications. This is consistent with Mingaine (2013) who noted the absence of knowledge-based employees as a major barrier to e-commerce adoption. Furthermore, the findings showed that management was supportive of the use e-commerce in business operations; an indication that at least there was hope for things to improve in future. This is consistent with Thong & Yap (2011) who assert that lack of support from top management is one of the main barriers to adoption of e-commerce. The study further confirmed that high installation costs inhibit the

adoption of e-commerce. This is in agreement with Vilaseca (2013) and Premkumar & Roberts (2010) who assert that lack of awareness and cost are fundamental factors that impede the adoption and use of technology by SMEs. Cost elements may include training, maintenance, information systems and software (Giovanni & Mario (2013). Indeed, SMEs in developing countries are unlikely to adopt and use technology when the initial set-up cost is high (Dixon et al., 2012).

5. Conclusions and Recommendations

For SMEs to effectively adopt and utilise e-commerce, there must be policies supporting e-commerce, recruitment and empowering of e-commerce operational and managerial staff and presence of budgets to support e-commerce adoption. Many SMEs do not easily attain the e-commerce related objectives up to the required levels due to various challenges including but not limited to inadequate qualified staff and budget constraints encountered along the way. These challenges, once addressed, e-commerce can grow and take root to help the SMEs realize growth in the long-run. It is therefore inferred that when e-commerce is adopted by SMEs, there could be tangible and intangible benefits with regard to the growth of SMES in developing countries.

It is therefore recommended that SMEs take e-commerce adoption as a priority if they are to realize continuous growth. They should effectively invest in e-commerce technologies, train and sensitize their staff and clients on the use of and the benefits that can be realized through e-commerce adoption. On the basis of constantly changing business environment, SMEs should continuously upgrade their internet systems and networks to deliver products that meet customers' needs and wants. In the wake of changing technology, SMEs need to devise easy to use mobile applications that link their websites. Such websites should be fast, interactive and reasonably informative. There should be total commitment by owners/managers to ensure that e-commerce development is given all the necessary support it deserves such as budgets for ICT infrastructure development, appropriate staff training, empowerment and motivation to work in line with the stipulated policies.

6. Limitations of the Study

The study explored e-commerce adoption from the point of view of SMEs. The individual views of potential clients were not considered yet they would be important in considering the best approach to register and use e-commerce. The study also used a small sample of SMEs. Many more SMEs would have been involved in the study to make the findings more representative. Since the study was conducted in Kampala District alone, it might not address the concerns of SMEs in other parts of the country. It should be appreciated that despite the aforesaid limitations, the study was able to answer all the key research questions.

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