

## **SMALL AND MEDIUM ENTERPRISES' (SMES) ADOPTION AND USAGE OF E-COMMERCE: A PROBIT MODELLING**

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### **Abstract**

*The developments in the Information and Communication Technology (ICT) industry have seen the transformation on the way the world conducts business. ICT has turned the world in a global village and the international trade is now just a click away. Despite the developments in the ICT industry, Zimbabwe's Small and Medium Enterprises (SMEs) have lagged behind in terms of e-commerce adoption and usage. Using the Logit-Probit models, the paper investigated the adoption and usage of e-commerce by SMEs in the Matebeland region in Zimbabwe. The model concluded that internet cost, ICT infrastructure, management attitude, ICT skills availability and hardware have a direct effect on the adoption and usage of ICT e-commerce while government policy was found to be insignificant. This is because most SMEs prophesy ignorance on the existence of such policy. The research also revealed that, though the above factors are crucial, they are not readily available to the SMEs in Matabeleland which has negatively influenced the adoption and usage of e-commerce in the region. The general economic environment in Zimbabwe has been making it difficult for the government to provide the much needed ICTS infrastructure required by SMEs and internet services providers. The research also revealed that though the ICT services might be provided, the adoption and usage might take some time as most SMEs indicated that, they would prefer the traditional way of doing business for the fear financial loss through cyber crime.*

**Keywords:** *E-Commerce, Small and Medium Enterprises, Internet, ICT Infrastructure, Cyber Crime*

## INTRODUCTION

The market and its characteristics plays an important a fundamental role in the achievement of the business' objectives which is profit maximisation and increased market share,(Solaymani, Sohaili, & Yazdinejad, 2012). The success of the business is determined by its ability to adapt to the market and to provide customised products and services.

The usage of ICT has become an integral part of the business communication and interaction. The electronic communication, e-commerce has increased drastically and it has become the most communication platform for the business world and the transactions that are done face to face are decreasing at a global level. This is because of the developments that are taking place in the ICT sector and the demand for quick and fast services by the consumers.

E-commerce which is defined as the purchasing or selling goods and services via the internet, thus e-commerce is viewed as an interactive tool between the business and its customers (Chanj and Mcqueen (2005). The adoption of e-commerce by companies has resulted in increased business volumes and it has drastically cut the lead time, thus e-commerce can be used as the strategy for rapid business growth.

In other countries such as Iran, United Kingdom (UK) and United States of America (USA), ecommerce has been utilised as the vehicle for transforming SMEs into big companies and the way business in the economy. The usage of e-commerce has benefits as highlighted by Beatty et al (2001) such as, improved cash flows, improved productivity, greater competitiveness promotion, cost saving in communication and marketing, wider business exposure, widening the customer base of the company and increased business network as well as increased trading partners.

### **Problem Statement**

In Zimbabwe, e-commerce has been largely utilised and adopted by big companies. SMEs, despite the role they play in the development of the economy have not been very active on the e-commerce platform. The adoption rate is less than 10% though more than 50% of the Zimbabwean businesses are in the SME category (ICTS Policy Framework n.d). Despite the benefits of e-commerce, SMEs in Zimbabwe are not adopting and using e-commerce and thus the paper seeks to establish the barriers to adoption and usage of e-commerce by SME in Matebeland.

### **Objectives of the Study**

- To identify the barriers and challenges to adoption and usage of e-commerce by SMEs in Matabeleland.

- To come up with policy implications for government, policy makers, business owners, technology vendors and developers.
- To add to the existing literature on technology in Zimbabwe.

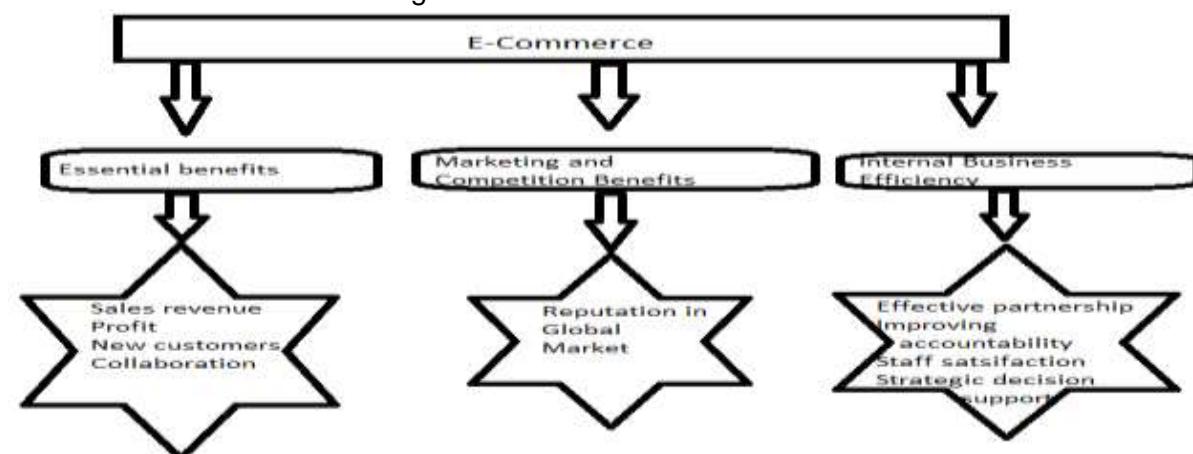
## LITERATURE REVIEW

David (2002) defines e-commerce as including the usage of internet technology such as emails, intranet to exchange or share information either within the firm or with external stakeholders. E- Commerce can be used in providing information about the company, providing information about the product, taking orders, receiving payment, identifying suppliers and communicating with the customers and suppliers.

Ibid (2002) highlighted that the adoption of e-commerce is in stages which are developers stage, communicators stage, web presence and the highest stage is that of transactors where the company utilises e-commerce for all its business transactions including electronic payments. "This means that e-commerce is a staged progression of usage that moves from simple to greater degree of usage and more sophisticated and integrated technologies for a range of highly developed commercial advanced level tasks', ( Chanj and McQueen 2005:30).

The ICT Policy (2005) observed the benefits of adopting e-commerce in economic development which includes increased business volume and increased market share. The capacity of the ICT sector to provide the required services in a cost effective manner, determines the adoption and usage of e-commerce. Mahomed et al 2013 observed the benefits of e-commerce adoption and usage using the Egyptian data. His observations are summarised on the diagram below.

Figure 1: Benefits of E-Commerce



Source: Summarised findings: Mahomed et.al 2013:501

In Zimbabwe, internet usage has been growing from 40 458 in 2010 to 187 000 in 2011, (ICTS Policy). The adoption and usage of the ICT services including e commerce is heavily dependent on availability of communication infrastructure, adequate ICTS facilities, availability of financial resources, network connectivity, bandwidth and the general awareness by the general populace.

However Odedra,( 2003) in Awagah (2015) argues that e-commerce may result in marginalisation of developing countries especially the SMEs in particular. This is because of various challenges faced by the developing nations and their SMEs. These challenges vary from ICTS infrastructure, narrow technological and knowledge diffusion. United Nations Conference on Trade and Development (UNCTAD) (2003) emphasis the need for the developing countries to adopt and use e-commerce if they are to be visible on the global market. This means that the developing countries are faced with very little choice if any but to adopt and do business as dictated by global trends thus online business. Again technology has become the major driver of economic growth for e-commerce enable the business to overcome the barriers associated with information asymmetry.

The success of e-commerce depends on technologies like electronic funds transfer, supply chain management, internet marketing, online transaction processing, electronic data interchange, inventory management systems and automated data collection systems.

Many researchers such as Solaymani et.al (2012) have revealed the crucial role played by ICTS in achieving macroeconomic objectives. The usage of e- commerce can lead to improved international trade, increased employment rate and improved customer service the rate of e-commerce adoption can also be used as an indicator of economic growth and it increases labour productivity as marginal and average products of labour tent to increase significantly where there is IT adoption. (ibidi 2012).

There are security issues that come with the adoption and usage of ICTS services such as e-commerce. Firms would need to secure their electronic communication which includes the payment platforms in order to boost customer confidence and increase the volume of business transacted through electronic transfer. Individual privacy protection is key factor that influences the volume of electronic business transactions.

Research by Chinaka S , (2006) found that the usage of e-commerce by SMEs is very low. In Iran, Mohammed et.al (2013) revealed that the adoption of e-commerce is mainly hindered by management, legal and socio-cultural factors. In agriculture, David E et.al (2002) revealed that the supply chain, scope of the firm and the nature of the product offered by the organisation has plays a very important role in the adoption and usage of e-commerce by the firm. Beheshti (2007) argues that the adoption of e-commerce by SMEs is affected by the

perceived and competitive advantage, innovativeness of the Chief Executive Officers, vendor support and customer needs. In Australia found that that norms and behavioural controls plays an important role in e-commerce adoption by

SMEs. The government policy on internet connectivity was found to be an important factor in e-commerce adoption in by Scotland SMEs. Land of adequate ICTS infrastructure, change resistance, ICTS costs was found by Dube T et.al (2010) to be the major barriers in Finland.

Business to Customer (B2C) is limited by cultural beliefs and security issues. Business to Business (B2B) commerce is limited by access to ICT hardware availability, enterprise wide information sharing, client interface and lack of skill. SMEs tend to easily fall in the comfort zone with regards to their business and they are not aware of the business benefits of adopting e-commerce and thus presenting the knowledge gap. This is worsened by the quality of the entrepreneur (Chivasa, 2014).

In Botswana, Mutula (2006), highlighted that the SMEs have not yet achieved a reasonable measure of e- readiness as compared to their counterparts in developed countries, yet the ability of the SMEs to compete on the global market is largely dependent on their capacity to adopt and use the modern communication strategies, such as e-commerce. Dube T et al (2010), found that SMEs in Zimbabwe particularly those in Gweru have adopted e-commerce related technology, but low usage. This means, there is need to concertise the SME community on the needs and benefits of adopting and usage of e-commerce as demanded by the current global business trends. In UK, David et. al (2002) found that SMEs, are rapidly adopting internet and e-commerce as 49% of SMEs were connected the internet by 2002.

SMEs are risk averse individuals and they tend to adopt a wait and see approach to e-commerce usage. They wait to see the success and failures of the movers. If the movers are successful, they then adopt. (Awagah et al, 2015).

Using the Ghana data, Awagah et.al (2015) revealed that individual perceptions and attitudes, perceived usefulness, ease of use affects the adoption of e-commerce by the Ghana SME's. These findings concur with Davis (1989) in Debjani et.al (2011). Where technology is perceived to act as facilitator, it is easy for SMEs to accept and use e-commerce, (Ibid 2000). The resource theories argue that the adoption of e-commerce is determined by the availability of physical assets, human capital and organisational capital. This is so because there is need for the organisation to have resources such as the financial resources so as to purchase the required equipment such the hardware. Human capital is required to operate the day to day running of the e-commerce facilities. Institutional theorists' emphasis on is the need to have

cognitive structures, normative structures and regulatory structures in place to ensure a well guided environment as well as providing the guidelines through the ICTS policy.

## METHODOLOGY

The study was done in Matebeleland province in Zimbabwe. Primary data was used and it was collected using the questionnaire method. The questionnaires were distributed in the provincial towns, Gwanda in Matebeleland South and Lupane in Matebeleland North. A total of two hundred and fifty (250) questionnaires were distributed to Small and Medium Enterprises and a total were distributed and 200 were returned which gives a response rate of 80%. The questionnaire was self designed after considering the objectives of the research paper and extensive literature review. The designed questionnaire captured the required information easily for it was designed for the intended audience.

After data collection, the probit model was used to analyse the data. The model was because of the dichotomous nature of the data as most of the variables are qualitative variables. The model was also adopted by Solaywami S et.al (2012 for Iranian SMEs. Dummies were used to capture some of the responses such the usage of e-commerce with (one) 1 for usage and zero (0) otherwise.

The model was specified as  $\Pr(Y_i = 1 | x_i \beta) = 1 - F(-x_i \beta) = F(x^1 \beta)$

$$x_i = \beta_0 + \beta_1 Inf + \beta_2 cost + \beta_3 Kno + \beta_4 Gov + \beta_5 man + \beta_6 hard + \epsilon$$

Where: Inf is ICTS infrastructure, Cost is internet cost, Kno is knowledge or skill, Gov is government policy, Man is management attitude towards e-commerce and Hard is computer hardware.

## MODEL ESTIMATION

E-commerce		Coef.	Z-stat
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Constant		-1.233*	-2.091
Cost		-0.1210*	2.4
Know		1.9733*	1.6
Hard		0.002**	-0.12
Mgt		0.893*	3.4
Gov		-0.004	2.045
Inf		0.123	1.23

\* sig at 0.05, \*\* sig at 0.1

All the variables except for hardware were found to be significant. R-Squared is above 0.5 which means that the model fairly explains the factors identified. Thus model fits the data fairly well.

The significant results indicate that there is a direct relationship between e-commerce adoption and usage and all the other variables. Internet costs if reduced will result in an increased utilisation of e-commerce and Internet service. Knowledge levels, ICT policy, management attitudes if improved will lead to the increased adoption of e-commerce. The government was found to be significant though the elasticities are fairly low. Government policy was found to have a negative effect probably because most of the firms interviewed were not aware of such a policy existing.

If the knowledge of e-commerce and security concerns associated with it are to be improved, the SMEs will utilise e-commerce. Most of the SMEs are afraid of financial loss risks associated with e-commerce and they prefer the traditional way of doing business.

Management has a positive sign which means that the familiarity of e-commerce by management has a positive effect on its adoption and use. This because, once the management appreciate the perceived benefits associated with a new move, they tend to run with the idea.

The provision of ICTS infrastructure was highlighted as one of the most important factor in e commerce use by SMEs. This is because most people indicated that they don't utilise ecommerce because of the issues of connectivity, thus the need to provide the necessary infrastructure.

The provision of these facilities might not necessarily encourage e-commerce as the SMEs also highlighted concerns over cyber crime and fear of financial loss. There is need to improve Internet security. This means that the issue of security and privacy are hindrance to adoption of ecommerce.

## **RECOMMENDATIONS**

From the research findings, number of recommendations that can be drawn. These are;

- Cost reduction. There is need to reduce the internet cost. This is because the current costs are prohibitive as the majority of SMEs lamented prohibitive cost as the reason. These costs can be greatly reduced if the supply could use shared infrastructure. Most SMEs face financial challenges and thus the need for government to promote access to inexpensive ICTS infrastructure. The government can also intervene by providing financial and technological assistance to SMEs.
- There is need to improve the security of information as cyber crime make people not to adopt e commerce.

- The government need to step up its public policy awareness campaigns if the nation is to adopt e-commerce as the means of doing business. It can also put in place policies its ICTS regulations that promote and confidence to boost participation rate by SMEs.
- SME have a challenge of not separating personal business from that of the company. In majority of the cases, Management perception about a certain product matter. Managers need to be trained on basic ICT skills so as to appreciate the importance of ecommerce. There is need to orient management on the potential benefits of ecommerce to the business. This would help the management to change their perception and thereby improving the adoption of ecommerce.
- Computer hardware needs to be availed to SMEs at affordable prices so as to encourage the usage and adoption of ecommerce.
- The government must be heavy users of ecommerce so as to promote the adoption of e-commerce by the general public, SMEs included.
- There is need to put in place regulations and rules that recognise ecommerce transactions so that participants can get compensated in cases of cyber crime.

## CONCLUSION

The research found that ecommerce as a global trend in doing business is not yet embraced by SME in Matebeleland. It was also found that not much is being done in terms of infrastructure development. This has a very big impact on ecommerce adoption. Security concerns have seen the slow adoption of e commerce. Findings of the study indicated that all variables jointly predicted the ecommerce adoption in Matebeleland but the major ones were affordability, uncertainties, management attitude, infrastructure and familiarity with ecommerce.

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