

Adoption of E-Commerce Solutions in Small and Medium-Sized Enterprises in Ghana

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Abstract

Extensive research has been done on e-Commerce to demonstrate the tremendous benefits it offer Businesses. However, SMEs especially in developing countries have not fully adopted e-Commerce solutions. Therefore there is the need to identify and measure the perceived importance of driving forces and barriers in the adoption of e-Commerce solutions among SMEs. A questionnaire based on the factors identified has been developed and face-to-face interviews were conducted with 15 SME Managers which were inclusive of survey sample of 61 Ghanaian SMEs. This research highlights findings from survey and interviews with SMEs in Kumasi, Ghana. Findings from this study shows that SMEs online sales is virtually nil, the most common e-Commerce application is the use of e-mail for communication and the main reason for having a website is to show basic information about product and services as well as contact information. Some of the barriers to e-Commerce adoption identified includes: lack of right technical skills, e-Commerce security, initial cost, resistance by people and culture, lack of interest by management, lack of developed legal and regulatory system. Among the implications of this study is that the findings provide a useful insight to governmental agencies, policy makers, e-Marketing experts, supply chain specialist to be able to assist SMEs who desire to deploy e-Commerce systems.

Keywords: Small to medium-sized enterprises, e-Commerce, Surveys, Ghana

1. Introduction

e-Commerce is changing business process in many organisations and, is set to have significant socio-technical implications (Al-Qirim, 2003;Currie, 2000). This is due to the fact that many researchers hold the view that e-Commerce has positive impact on business operations. Policy makers and managers are certain that e-Commerce conveys wide range of benefits, and companies that are left behind in adopting this new system cannot compete favourably in the global marketplace (Noor, 2009). Some business entities around the world have implemented e-Commerce and some of the benefits reaped includes: improvements in operational efficiency and revenue generation by integrating e-Commerce into their value chain activities, access to wider range of markets, greater potential for partnership with suppliers and vendors, improved customer services, accessibility, flexibility in administration and partnership, information update, lower transaction costs, product/service differentiation, ability to enter supply chain of larger companies (Vaithianathan, 2010). Unfortunately, SMEs in Africa has lagged behind most of the world's economies in tapping into these possibilities and emerging technologies and therefore could not realised the full potential benefits of e-Commerce.

Small and Medium-sized enterprises (SMEs) are often seen as vital for the growth and innovation of dynamic economies as they help to diversify economies. SMEs account for 60 percent to 70 percent of jobs in most developed and developing countries and for most new jobs that are created, within Africa, several countries in Africa have prioritised their investment in SMEs (Gordon, 2003). SMEs account for about 85% of manufacturing jobs in Ghana, the manufacturing sectors is said to be a characteristic feature of the production landscape (Aryeetey, 2001) Again about 70% of Ghana's GDP is contributed by SMEs and it is estimated that 91% of the formal business entities are Small, Medium and Micro Enterprises (SMMEs) (Berry et al., 2002: Hassbroeck, 1996).

Information and communication technologies (ICT), particularly e-Commerce, are considered very important to Ghanaian economy, as a result, Ghana is seeking to enact legislation to enable and encourage the adoption of e-Commerce. In addition, there has been proliferation of telecommunication companies in Ghana providing Internet services as a way of encouraging businesses, especially SMEs, to adopt e-Commerce. However, little is known about SMEs e-Commerce activities. In addition, there has been number of studies on the adoption of e-Commerce solutions by SMES (Molla and Licker 2005;Tan, Tyler, & Manica, 2007), these studies identified some of the barriers experienced by SMEs in implementing e-Commerce solutions in advance economies. There is therefore the need for a study that will look at African situation in general and Ghanaian context in particular.

In Ghana, e-Commerce use among SMEs is a new phenomenon. While e-Commerce solutions has been adopted by some multinational and large organisations, Small and Medium-size Enterprises have been slower in adopting these technologies, this low rate of adoption and the SMEs inability to take advantage of emerging Internet technology to improve their business operations deserves serious attention.

This paper addresses three issues:

- (1) Identify and measure the uses of e-Commerce applications in SMEs
- (2) Perceived importance of driving forces for the adoption of e-Commerce.
- (3) Barriers to adoption of e-Commerce.

The structure of this paper is as follows. This section introduces the purpose and objectives of the study. The second section discusses the literature review. The third section presents the research method and the data collection process. The following section presents the results and discussions, while the last section discusses the managerial and research implications, limitations and conclusions of the study.

2. Literature Review

e-Commerce

There is no consensus on definition of e-Commerce, Turban, Lee, King, McKay, Lee & Viehland (2008) define e-Commerce as the process of buying, selling, transferring, or exchanging products, services, and/or information via computer networks, including the Internet. Turban et.al, further distinguishes between Internet and non-Internet e-Commerce. The non-Internet e-Commerce includes for example buying and paying for services or product with smart card through vending machines and/or transactions undertaking via network such as Local Area networks (LAN), using intranets or even single computerised machine. Some researchers see e-Commerce in terms of Internet applications, such as intranet, extranet, website and email (Drew 2003). Others view e-Commerce as combination of business processes and Internet technologies such as interactions with customers and suppliers (Kendall, Tung, Chua, K.H., Ng, C.H.D., & Tan, S.M., 2001). However there is general consensus among researchers that the main components of e-Commerce include: website, email, intranet, extranet, LAN and wireless area network (WAN), Voice over Internet Protocol (VOIP)

e-Commerce is an umbrella concept to integrate wide range of existing and new applications (Kalakota, & Whinston, 1996) e-Commerce be can categorised into various type of application and the usage. Chaffey, Ellis-Chadwic, Mayer, and Johnston, (2009) categorised various model of e-Commerce into:

1. (C2C) Customer to Customer where consumers directly transact with other consumers in the cyberspace. (Hoffman & Novak, 1996) identified C2C interaction as important model in Internet based transactions and suggested the need for companies to take it into consideration in their market planning effort. Their assertion is exemplified by the growth of social network site in recent times
2. (B2C) Business to Customer is where customers learn about products or services through electronic publishing, and buy them using electronic cash and secure payment systems, and have them delivered electronically or through physical channel (Vaithianathan, 2010).
3. (B2B) Business to Business is e-market transaction in which businesses, governments, and other organisations depend on computer-to-computer communications as a fast, an economical, and a dependable way to conduct business transactions (Vaithianathan, 2010).
4. (C2B) Customer to Business is type of online transactions where consumers initiate trading with companies.
5. (C2G) Customer to Government is type of online interaction where feedback is given to government through pressure group or individual sites.
6. (B2G) Business to Government is type of online interaction where feedback from businesses is given to government and non-government organisations
7. (G2C) Government to Citizen is type of online interaction through which government offer national transactions such as local government services, national government information, and tax information. This study focused on e-Commerce adoption in B2C and B2B, since the other e-Commerce models are not well developed in Ghana especially G2C, C2G and B2G.

1.1 Reasons for Adoption of e-Commerce by SMEs

Molla and Licker (2005) claim that e-Commerce facilitates the growth and expansion of firms in developing countries due to the ability of the Internet and ICT to reduce cost of transactions, to eliminate intermediaries and facilitating linkages to the global supply chains. The expansion and growth can be possible if SMEs in less developed countries can take advantage of Internet technologies to make substantial savings on communication, production process, and delivery of goods and services.

Jeyaraj, Rottman and Lacity (2006) identified two major external pressure such as trading partners (customers and supplier) and competitive pressure in SMEs e-Commerce adoption. The reason being that SMEs being part of larger system will be subjected to external pressure in order to conform to technologies used by suppliers and customers for optimisation of transactions. Scupola (2011) analysis of SMEs in Demark and Australia revealed that environmental factors that are significant in e-Commerce adoption were customer pressure and access and quality of ICT consulting Services.

The use of ICT to improve business competitiveness has gained recognition in several studies and indeed SMEs have been trying and testing new e-Commerce models in spite of their scarce resources (Dongen, Maitland & Sadowski, 2002). The main factors that push for successful innovation are a combination of having a dedicated and motivated individual, usually the Chief Executive Officer (CEO) and paying attention to a multitude of good management activities and attitudes (Tidd, Bessant, & Pavitt, 2001) this includes the ability to scan, predict and respond to the dynamic business environment. Actinic (2003) recent surveys suggest that the main reason for e-Commerce adoption amongst UK SMEs is to increase sales while others suggest more illusory motivations for adopting e-Commerce.

Kalakota and Robinson (2001) see the adoption of e-Commerce as more of an external pressure brought about by a new type of customer value proposition of what they want, when and how they want it and at the lowest cost. Daniel, Wilson and Myers (2002) stated that SMEs in the UK are adopting e-Commerce in four stages as: (1) developers; (2) communicators; (3) those with web presence; and (4) transactors. Developers are developing their first e-mail and website, communicators are using e-mail and exchanging documents and designs electronically with customers and suppliers; web presence means websites with online ordering facilities; and transactors are those using online ordering and payment capabilities. This stage approach has been criticised because firms can leapfrog the stages. Al-Qirim, (2003) identified level of national infrastructure and government involvement in fostering e-Commerce adoption as other important factors which need consideration by policy makers.

2.2 e-Commerce Adoption Barriers

Ghobakhloo, Arias-Aranda and Benitez-Amado (2011) e-Commerce adoption has been hindered by the quality, availability, and cost of access to necessary infrastructure in developing countries, whilst developed countries have employed a relatively well-developed, accessible and affordable infrastructure for e-Commerce initiatives. Tan, Tyler, and Manica (2007) SMEs in developing countries face challenges different from those in advance economies and the degree of the adoption and expected benefits varies. This might be as results of the differences in socio-cultural settings. Khalifa, Irani and Baldwin (1999) pointed out that perceived or real risk is one of the major barriers to adoption of ICT, the risk can be loss of data, breakdown of IT infrastructure and uncertainties. Khalifa et al went on to state that privacy, security, authentication and legal issues, are the main elements associated with e-Commerce. The main barriers to e-Commerce adoption appear to be the unwillingness of managers to be responsible for technological change (Kalakota & Robinson, 2001). Timmers (1999) viewed that issues concerning security, costs, legislation and interoperability is as a result of ignorance surrounding new technologies. Bodorick, Dhaliwal and Jutla (2002) identified limited resources as a distinctive characteristic of SMEs and therefore a barrier for them to compete in the global e-commerce market. Darch and Lucas (2002) in their study of Australian SMEs found that costs, unawareness of what e-Commerce involves, lack of e-Commerce skills, lack of knowledge, lack of help and lack of time, inadequate telecommunications infrastructure, lack of trust and the relevance of e-Commerce to their particular industry sector as the man perceived barriers to adoption of e-Commerce. Limthongchai and Speece (2003) found that one of major barrier in developing e-Commerce is the security of using e-Commerce. To adopt e-Commerce, information safety is essential for the company to have integrity of the entire system.

Table 1 e-Commerce adoption among SMEs

Study	Major Factors/ Findings
Idisemi et al, (2011)	Investigated factors affecting the effective utilisation of information and communication technology (ICT) and the adoption of more sophisticated ICT solutions in small and medium-sized enterprises (SMEs) in Lagos, Nigeria. The paper identifies eight key factors that affect the effective utilisation and adoption of more sophisticated or advanced ICT solutions in Nigerian SMEs. The barriers identified includes: infrastructural inadequacy, financial constraints/cost of implementation, lack of awareness and education, lack of skills and training, lack of openness and knowledge sharing, lack of policy and institutional framework, electricity constraint, lack of

Ghobakhloo et al., (2011)	support from government and banks Examine the factors within the technology-organization-environment (TOE) framework that affect the decision to adopt electronic commerce (EC) and extent of EC adoption, as well as adoption and non-adoption of different EC applications within small- and medium-sized enterprises (SMEs). The Findings of the study revealed that e-Commerce adoption within SMEs is affected by perceived relative advantage, perceived compatibility, CEO's innovativeness, information intensity, buyer/supplier pressure, support from technology vendors, and competition.
Ifinedo (2011)	Conducted a study which aimed at contributing to the discussion related to what causes Canadian small and medium-size enterprises (SMEs) to be reticent about accepting internet and e-business technologies (IEBT) in their operations and to also seeks to gain an understanding of the relative importance of each of the selected factors in the research setting. The research findings indicated that perceived benefits, management commitment/support, and external pressure are significant predictors of IEBT acceptance in the sampled SMEs; the results did not show that organizational IT competence, IS vendor support, and availability of financial support positively influence IEBT acceptance in the sampled SMEs.
Love et al., (2001)	Conducted an empirical analysis of the barriers to implementing e-Commerce in SMES in construction, Australia. The paper identified and categorized substantial barriers into technical, financial, organisational and behavioural. In addition, risk, uncertainty, change and knowledge were identified as the underlying factors in EC adoption

2. Methodology And Data Collection

The sampling frame of this study consists of SMEs engaging in manufacturing, retailing and services activities located in Kumasi, Ashanti region of Ghana. Kumasi was selected because it is the second largest city in Ghana with vibrant economic activities. The major economic activities are commerce/services 71 percent, manufacturing/industry 24 percent and primary production 5 percent (KMA.com, 2012). Additionally, it has good Internet access, with number of Telecommunication companies (MTN, TIGO, EXPRESSO, AIRTEL, VODAFONE, GLO) offering Internet services on their network in the city as well as other Internet Service Providers (ISPs).

The data was collected by means of survey and also face-to-face interviews. Businesses were only chosen that fitted the National Board for Small Scale Industry (NBSSI) definition of an SME with not more than 9 employees. Questionnaire was used as one of the data collection instruments. Section A of the questionnaire dealt with general information concerning type of SMEs, number of IT staff employed. Section B requested the respondents to indicate e-Commerce application usage in their firm, in Section C, respondents were asked to state the reasons for adopting e-Commerce, based on the list of factors identified in table 5 using a rating scale of 1-5, with 1 denoting Strongly disagree, 2 Disagree, 3 Neutral, 4 Agree and 5 Strongly Agree. In section D, non-adopters were asked to give answers to the list of statements identified in table 6, according their perception of e-Commerce and why they have adopted it, using a rating scale of 1-5, with 1 denoting Strongly disagree, 2 Disagree, 3 Neutral, 4 Agree and 5 Strongly Agree.

One hundred and forty five questionnaires (145) were hand delivered to the managers or CEOs, some of the respondents completed the questionnaire and returned them on spot, with others, reminders have to sent via SMS, phone calls and email two weeks after the initial delivery of the questionnaire, nearly a month after that, second reminder was sent to 35 non-respondents. In all 67 responses were received, out of these 2 were rejected because it did not fit into definition of SME of not more than 9 employees, and further 5 were excluded from the analysis because the return was incomplete. Therefore, 61 usable responses with response rate of (46%) was the basis for the analysis. Face-to-face interviews were also carried out to solicit further information for the purpose of the data analysis. The interviews were conducted personally and lasted between one to two hours. The interviews were recorded both hand written and digitally, a total of 15 Managers were interviewed in the process. The interviewees were allowed to talk freely without interruption to enable getting their perspective on usage and barriers to adoption e-Commerce. The data gathered was analysed using Microsoft Excel for the descriptive statistics and the frequencies as shown in tables 2, 3, 4, 5 and 6 below.

3. Results and Discussion

Table 2 shows the frequency distribution of the SMEs and associated percentages

Table 2. Distribution of SMEs

SMEs	Frequency	Percentage %
Manufacturing	18	18
Services	21	38
Retailing	22	44
Total	61	100

Table 3 shows SMEs with Internet Connections and those without Internet connections, Out of a usable sample size of 61, 20 (33%) SMEs did not use Internet at all, 5 (8%) businesses used Dial up Internet connection, 25 (41%) businesses used Internet Service Provider. 8 (13%) businesses also used Dedicated Server LAN and the least 3 (5%) among them were those using Dedicated High Speed Service.

Table 3. Internet Access Connection

Internet Access Connection	Frequency	Percentage %
None	20	33
Dial up	5	8
Internet Service Provider	25	41
Dedicated Server LAN	8	13
Dedicated High Speed Service	3	5
Total	61	100

Table 4 shows the percentage list of e-Commerce applications usage among the SMEs, weighted according to the total number of SMEs. It is worth noting that not all SMEs online activities were captured in the categories stated In order to understand the e-Commerce application and usage better, it is proper to breakdown each application in order to investigate the extent of each component in the e-Commerce applications. Applications were listed under the general headings of Web searches, Website presence for, and Interactions with suppliers and customers. The top usage in the three categories was “Searching for product availability information”, “advertising company and product information”, and “e-mail”.

Table 4. Percentage Usage of e-Commerce applications

Applications	Percentage Usage (%)
1. Web searches	
(a) Searching for product availability information	39
(b) Searching for potential suppliers	25
(c) Searching for potential customers	2
2. Web site presence for	48
(a) Advertising our company and product information	15
(b) Sales and service support	0
(c) Online sales transaction through our web site	
2. Interactions with suppliers and customers	
(a) e-mail	48
(b) Tracking order and delivery information	8
(c) Instant messaging	7
(d) Video conference	0

Web Searches: Two percent (2%) of the respondents used the Internet to search for potential customers who are likely to buy from them. Twenty five percent (25%) used the web to search for potential suppliers and thirty nine (39%) used the web to search product availability information.

Websites Presence for: About (50%) of the respondents stated that their companies have a websites. Out of this

(48%) stated that the main reason of having website is to advertise the company and product/service information. The need to provide sales support and service was stated by (15%) of the SMEs as the reason for having website. None of the SMEs uses the website for online sales transaction, the reasons for low online sales transaction can be attributed to few effective e-payments mechanisms suitable for e-Commerce transactions, the e-Switch payments systems introduced in Ghana in 2007 has not been widely adopted in Ghana, again Credit and Debits cards which are the main electronic payment system in advances economies is yet to be fully accepted and use by Ghanaian population for making online payment and other transactions.

Interaction with Suppliers and Customers: The use of email as the medium of communication accounted for (48%) usage of e-Commerce application among the SMEs. The next application usage was tracking order and delivery information which accounted for (8%). Some of the SMEs used instant messaging tools like Skype, Yahoo and MSN messenger to interact with their customers, this medium of communication account for (7%) of e-Commerce application usage by the SMEs. Finally none of the SMEs uses video conferencing as platform to interact with their customers. To some of the managers the non usage of video conferencing for interaction with customers and suppliers is as result of slow bandwidth of the Internet connection, whilst some are totally unaware about that feature in the e-Commerce settings.

4.1 Reasons for Adopting e-Commerce Solutions

Table 5 is a summary of the respondents' assessment of the main reasons for adopting e-Commerce. The four main reasons cited in order of importance by managers in deploying e-Commerce applications is first, to expand and grow their business, the SMEs sees websites and e-Commerce as a platform that can create wider market reach which may ultimately lead to increase in sales, profitability and growth. Second, e-Commerce can improve customer service and help us find new customers, the SMEs see their online presence as antidote to poor customer service and an opportunity to build large customer base, because they can easily place an advertisement, product information and services on their websites where it can be accessed by current and potential customers 24/7/365, which means e-Commerce websites can run all the time. Third, Need to keep up with existing competitors, some of the SMEs observed that their competitors have online presence therefore they have to create online presence so that they will not lose their customers to rivals firms. Fourth, e-Commerce can increase our employee productivity. The SMEs are of the view that by deploying Internet base technologies their staff can communicate easily, share information, access information, and execute their assign task in more effective and efficient manner, which might lead to cost reduction in the long run.

Table 5 Respondents Assessment of Reasons For Adopting e-Commerce

No.	Reason	Mean score of importance	SD
1	Opportunity to expand and grow	3.82	0.21
2	e-Commerce can improve customer service and help us find new customers	3.76	0.20
3	Need to keep up with existing competitors	3.43	0.22
4	e-Commerce can increase our employee productivity	3.41	0.19
5	e-Commerce can reduce our transaction cost	3.11	0.21
6	Threat of large competitors taking the business	3.10	0.23
7	e-commerce can reduce the price of product we sell	2.85	0.21
8	Customers demanding to deal on the internet	2.51	0.20
9	Pressure from Suppliers and other business partners	2.31	0.15

Note: The scoring is based on 5 denoting that respondents strongly agree, 4 Agree, 3 Neutral, 2 Disagree, 1 Strongly disagree.

Two reasons which were declared moderately important for deploying e-Commerce by the respondents were (a) e-Commerce can reduce out transactional cost and (b) threat from large competitors for our business. The respondents do not believe that e-Commerce usage can make substantial reduction in their cost of operation as they do not understand what actually entails, again they do not experience any major threat from rival firms who are already using e-Commerce as a justification to also adopt e-Commerce systems.

The least important reasons cited for adopting e-Commerce were first, customers demanding to deal on the Internet. Most of the SMEs stated that customers are not particularly interested in undertaking online transactions due to high Internet cost and unstable nature of the network especially in the peak hours of day. Again they are not subjected to pressure from their suppliers to adopt e-Commerce because most of their local supplier are

themselves not using Internet for their core business activities. This findings is in contrast with study by (Barua, Konana, Whinston, and Yin, 2004; Oliveira and Martins, 2010) where it was found that pressure from customers and suppliers for electronic business was major determinant of e-Commerce adoption and use within businesses operations. Therefore the main reasons for adopting e-Commerce by the SMEs were to expand and grow their business, improve customer service and ability in attracting and locating new customers and the need to keep up with existing competitors.

4.2 Barriers to Adoption of e-Commerce

Table 6 is a summary of the respondents perception about e-Commerce and reason why they have not adopted it in their business operations. First, lack of developed legal and regulatory system, there is no legal and regulatory system facilitating e-Commerce adoption in Ghana, the government attempt to enact e-Commerce law to encourage adoption and usage of e-Commerce has not been successful since the first attempt in 2009. This might affect the utilisation of e-Commerce applications by Ghanaian SMEs as there is no legal framework which the SMEs can use as reference point in their daily business operations. This legal framework will provide consumer protection in Internet transactions, online fraud, intellectual property, exchange rate, warranty, online disputes. Second, initial investment required for e-Commerce is very high, the respondents complained about high initial set up cost involving creation of websites, hiring a webmaster, paying of Internet services and acquisition of computers in order to deploy e-Commerce technologies. Folorunsho, Gabriel, Sushil and Jeff (2006) found that some of the SMEs prefer to channel their resources to activities that can results in high profit as they struggle with high cost of ICT implementation. Further (Chapman et al., 2000; Love et al., 2001 Tuunainen, 1998) reported that weak financial position of SMEs and the resistance to invest in complex IS is seen as major barriers in information systems adoption. However findings by Ghobakhloo et al, (2011) found that e-Commerce adoption cost is not perceived to be a major barrier by 235 SMEs surveyed in Iran.

Table 6. Respondents views on Barriers to Adoption of e-Commerce

No.	Reason	Mean score of importance	SD
1	Lack of developed legal and regulatory system	3.24	0.20
2	Initial investment required for e-Commerce is very high	3.14	0.20
3	e-Commerce security issues	3.08	0.20
4	Insufficient knowledge about e-Commerce technology	2.91	0.21
5	Lack of right technical skills	2.81	0.20
6	Resistance by people and culture	2.54	0.20
7	Lack of interest by management	2.37	0.18
8	Financial risk seem too high	2.22	0.19

Note: The scoring is based on 5 denoting that respondents strongly agree, 4 Agree, 3 Neutral, 2 Disagree, 1 Strongly disagree.

Third, e-Commerce security issues, Internet security is becoming a major issue in Ghana, more especially with the advent of ‘Sakawa’ cyber fraud activities among some Ghanaian youth. Therefore some of the respondents stated that their customers see the Internet as insecure medium to transact business. Hence the customers prefer to undertake all transactions offline in order to avoid risk of falling victim to Internet fraud. This finding is in line with Khalifa et al. (1999) that perceived or real risk, such as Internet security, authentication and legal issues were some barriers to adoption of e-Commerce.

Insufficient knowledge about e-Commerce technology and lack of right technical skills were the two factors that were ranked moderately by the respondents. The least important inhibition factors ranked by the respondents were resistance by people and culture, lack of interest by management and the risk of deploying e-Commerce. Most of the managers do not see e-Commerce adoption to be associated with high financial risk since they do not invest heavily in business related ICT, instead they invest their funds into core business activities in the form of production of goods or delivery of services. This suggest that the main inhibition factors were lack of developed legal and regulatory system and high initial investment required for adopting e-Commerce in Ghana.

4.3 Managerial and Research Implications

The findings have important research and policy implications. First, it could create the need for massive education and awareness creation about the pros and cons of deploying e-Commerce applications by government

and all the relevant agencies about the tremendous benefits of ICT based business transactions among SMEs, Second, this study can alert the policy makers to speed up the process of passing of e-Commerce legislation bill which encompasses e-contracting, e-signature laws and other laws protecting business parties, transactions, systems and data storage, accessibility and Internet security in Ghana

Third, attention of policy makers is drawn in order to create necessary IT infrastructure and right policies that can make wider adoption of e-Commerce by SMEs easier and more convenient similar to situations in advanced economies. It is well known that IT infrastructure is the major backbone for e-Commerce, since e-Commerce increases proportionately with internet use and penetration, Ghana government need to ensure affordable Internet connection. Fourth, this study will draw the attention of policy makers to ensure the development of solid electronic payment systems and regulations that can ensure smooth take off in commercial transactions electronically. Fifth, incentives should be given to innovative SME managers who readily adopt innovative means of operating their business. Sixth, local software vendors in Ghana, who target SMEs, should develop simple and user friendly e-Commerce applications that will meet simple task performed by SMEs. Finally, security agencies need to employ modern techniques of fighting cybercrime and managers and citizens in general need to be educated on how to prevent all forms of cyber attack from online fraudsters.

4.5 Limitations and Future Research Directions

First, this study focused on SMEs in Kumasi in Ashanti region of Ghana; therefore, the findings cannot be fully generalised to other countries and different business sector. Hence further studies need to be undertaken to cover all the regions in Ghana and to include all the sectors of the economy. Second, the data was provided by only the managers and not any staffs who are users of the e-Commerce applications in the respective SMEs studied, the data collected would have been richer if the perception and opinions of other staff were gathered for data analysis. Third, the results of this study will provide a foundation for policy makers, business leaders and academicians to look further into factors that inhibit adoption of e-Commerce usage and applications by finding appropriated solutions to barriers, so as to create and encourage growth and expansion of sustainable businesses for socio-economic development of Ghana.

4.6 Conclusion

e-Commerce has received much publicity in Europe, US and lately Asia. The increase in the publicity is due the potential benefits that e-Commerce applications impact can on business operations. Several studies have shown tremendous benefits that SMEs can derive from e-Commerce usage. In Ghana, there has not been much publicity about the usage of e-Commerce. This research revealed that few Ghanaian SMEs uses Internet based technologies in their business operations. The main e-Commerce application use by the SMEs is the use of email for communication with customers and suppliers which is consistent with a study by (Noor, 2009) that SMEs in Malaysia mainly uses email component of e-Commerce. The main use of websites presence by the SMEs is to advertise their product or services. Online sales transactions is virtually nil among Ghanaian SMEs due to poor e-Payment systems infrastructure in the country. This study further revealed some of the barriers to e-Commerce adoption to include: lack of developed legal and regulatory system, initial investment required for e-Commerce is very high, e-Commerce security, insufficient knowledge about e-Commerce technology, lack of interest by management, lack of right technical skills, resistance by people and culture and Internet security concerns. And some of the main reasons for adopting e-Commerce are for expansion and growth, the need to keep up with existing competitors and the ability of e-Commerce to improve customer service and help find new customers for the SMEs

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