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Original Research Article

Barriers to E-Commerce Adoption and Implementation Strategy: Empirical Review of Small and Medium-Sized Enterprises in Ghana

ABSTRACT

Most of the Small and Medium-sized Enterprises (SMEs) in the developing countries are yet to espouse and witness the full potential of electronic commerce (e-commerce) in their business operations despite its popularity in the developed countries. SMEs indispensable role in economic growth regarding employment creation and their contribution to GDP is globally acknowledged. A successful adoption and implementation of e-commerce may be the catalyst for the economic growth of Ghana and many developing countries. Unfortunately, the application of e-commerce by the SME sector in Ghana lacks depth and has been scrimpy. Numerous reasons and factors account for the low adoption rate of e-commerce by Ghanaian SMEs. This study aspires to address this scantiness by investigating e-commerce adoption models to overcome the barriers that confront the SME sector in their quest to adopt and implement e-commerce. Unstructured and face-to-face interviews, web-site and document analysis were the methods of data collection. Quantitative approaches using questionnaires with 120 respondents were used for the data analysis. To determine these factors, both adopters and non-adopters of e-commerce in the SME sector were tasked to select and discuss their major inhibiting factors in their adoption and implementation of e-commerce. Financial barrier was the most relevant among the six group of barriers. However, technical and Internet security prove to impede the adoption too. Thus to stimulate the adoption of e-commerce to increase productivity and enhance global competiveness, stakeholders and the government should invest in e-commerce and its components.

Keywords: Barrier, E-commerce, SME, Adoption, Implementation.

1. INTRODUCTION

The market globalization in the 21st century has contributed to the dynamic business environment of SMEs straining for competitive advantage over their competitors. This has necessitated continuous innovation and adoption of emerging technologies and strategic management concepts. Business operations and the quality of its delivery services can be improved through e-commerce. Currently, the literature on e-commerce adoption by SMEs has witnessed a considerable interest as a result of the substantial roles played by SMEs and technology in economic development [1].

SMEs imperative role in innovation, job creation and creating entrepreneurial spirit has earned them the accolade “The Engine of Economies” [2]. Hence, SMEs are crucial for employment and fostering competiveness towards the economic growth of Ghana. Not only in Ghana, SMEs are playing very pivotal role in economic development and economic reforms both in the developed and developing economies [3].

Improved productivity, high customer satisfaction, lower costs and gaining competitive edge over competitors are among the key drivers of e-commerce adoption. Technological advancement has a major impact on e-commerce development and in an effect influences globalization. Hence, the successful globalization of an SME is a major step in achieving competitive advantage through the adoption of e-commerce by improving market access and market performance [4]. Moreover, the required infrastructure and platform necessary to transact businesses across boundaries including the provision of appropriate information or data at the needed time can be delivered by e-commerce [5].

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Despite the forenamed drivers and the perceived potentials of e-commerce, most SMEs in Ghana are yet to experience or adopt e-commerce. Unlike the SMEs, the Large firms in Ghana have gained the edge over their competitors through e-commerce and other related Information and Communication Technologies (ICT) [6]. Studies have unearthed many challenges confronted by SMEs in their quest to adopt e-commerce in different countries. Such barriers include: lack of qualified staffs to develop and maintain e-commerce sites and tools, lack of telecommunications infrastructure, lack of skills among customers or consumers, inefficient and unreliable delivery mechanisms of physical goods, low income, low computer and internet penetration, low bank penetration of credit card and bank accounts among many others.

The goal of this study is to identify and investigate the barriers of e-commerce adoption among Ghanaian SMEs and finally develop a framework to ensure a successful adoption and implementation of e-commerce in Ghana.

This study proceeds with reviewing related literature by examining the characteristics of e-commerce and SMEs followed by examining the challenges of e-commerce adoption. The research methodology which explains the data source, data collection procedure and research approach are then followed. Findings from the results are interpreted and discussed. Conclusions, recommendations and further implications of the research are finally given.

2.0 LITERATURE REVIEW

2.10 E-Commerce

Transactions conducted via computer-mediated networks or through Internet Protocol-based (IP) networks is referred to as E-Commerce or e-commerce [7]. Moreover, any form of commercial transaction, or business that necessitates the transfer of information across the Internet is also termed as Electronic-Commerce or e-commerce. This involves the exchanges of valuable data or information in the form of goods or services as well as payments via web-based technologies [8]. E-commerce and technological advancements are transforming and have changed most of the traditional modes of conducting businesses and transactions [9]. The low rate of e-commerce adoption by SMEs in most of the developing countries like Ghana may be attributed to the lack of web-based transaction technologies and facilities [10] [11].

2.20 Small and Medium-Size Enterprises (SMEs)

SMEs remain the backbone of many economies as a result of their indispensable role in both wealth and job creation [12]. Based on SMEs qualitative and subjective judgement on their categorization, there is no standard definition of SME across the globe as different countries and firms set their own criteria for definition [13]. However, the number of employees, turnover and level of assets of a firm are the frequently used criteria in defining SMEs.

Firms with less than 10 employees are recognized by the Ghana Statistical Service (GSS) as SMEs while firms' employee more than 9 are considered as Large-sized enterprises. Alternatively, the National Board of Small Scale Industries (NBSSI) in Ghana regards SMEs as firms employing less than 10 with machinery and plant size less than 10 million Ghana Cedis discounting vehicles, lands and buildings. The volatile and inconsistent nature of the exchange rate in valuing fixed assets has made this definition heavily criticized. SMEs in Ghana are further categorized into micro (employing a maximum of 5 workers), very small (with workers between 6 and 9) and small firms (firms with 10 and 29 workers) [14].

SMEs in Ghana are mostly sole-proprietorship owned by families or individuals contributing to 80% of total employment and 70% of the national Gross Domestic Product (GDP) [15].

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2.30 Barriers to E-Commerce Adoption in SMEs in Developing Countries

Research has unearthed voluminous perceived benefits and benefits associated with the employment of e-commerce in SMEs operational milieu. E-commerce has the potential to increase the productivity of firms by offering feasible and pragmatic solutions for organizations to address the challenges in this dynamic environment. SMEs in Ghana have shown a low adoption rate of e-commerce. Different sources of literature have acknowledged the challenges of e-commerce adoption and its diffusion as early as in the nineties. Indicating comparable challenges affecting both the developed and developing economies with regards to e-commerce adoption, with the latter more challenged [16].

High cost of e-commerce infrastructure and its implementation has been cited to impede e-commerce adoption relating to buying ICT equipment for implementation, setting-up, training employees and consultancy fees, creation and maintenance of website and other infrastructures [17]. SMEs in Ghana and most African countries lack the financial resources to acquire ICT resources or infrastructures which serve as the backbone of e-commerce initiatives [18].

Security issues and lack of regulatory frameworks is a major concern towards e-commerce adoption. Since financial transactions will be conducted online, a breach or hack into such a system is a major concern highlighted in literature [19]. Moreover, after an occurrence of security breach, measures to solve or address these kinds of situations are lacking. Laws for e-commerce governance are yet to be enacted which is resulting and has resulted into a delay in e-commerce adoption especially in the case of Ghana.

Organizational culture may either positively or negatively affect the course of actions in SMEs. SMEs reliance on informal, local and social information systems like managers of SMEs over reliance in establishing face-to-face transactions than web-based inhibits e-commerce accomplishments [20].

Lack of electricity has hampered the adoption of e-commerce in most of the developing countries like Ghana [19]. Since the nation is incapable of producing sufficient power to feed firms, establishing a platform like e-commerce which necessities electricity to function becomes a vision. Most e-commerce platforms require high speed Internet. The lack of internet and slow speed of telecommunication systems have hindered its adoption [21].

In the confines of SMEs, e-commerce adoption has been unsuccessful because of numerous issues surrounding the managers and employees. Lack of skilled ICT personnel has been referenced has a common challenge preventing SMEs from establishing e-commerce [19]. This barrier is alike to other developed countries as well [22]. The complex perception about ICT and e-commerce among some managers of SMEs contributes to the low e-commerce adoption in the developing countries [23].

Economic and political instability in some geographical regions of the world prevents SMEs from embarking on e-commerce due to restricted trading and uncertainties [24]. Lack of macro-economic and regulatory policies has prevented many developing countries from advancing to e-commerce platforms. Research identified that governments in the developing economies are preoccupied with enacting policies related to poverty alleviation, hunger, education and humanitarian concerns while the developed leadership enact policies to ensure SMEs growth and development [25]. Lack of credit cards and payment systems between customers and SMEs (C2B) has prevented many consumers from participating in e-commerce related activities in developing countries [26].

Although studies have been conducted on the barriers of e-commerce adoption, however, such a research has not been conducted in the Northern Region of Ghana. Considering the demographic nature and the economical wealth of this region, a study diving into such a topic will unearth the factors hindering e-commerce adoption in the SME sector which will be a major step to achieving e-commerce adoption to increase their productivity, growth and ensure their development for a better Ghana.

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3.0 RESEARCH METHODOLOGY

Although there is a body of literature vis-à-vis SMEs barriers in adopting e-commerce, studies into the adoption and successful implementation of e-commerce in the Northern Region of Ghana is comparatively new [27]. Since SMEs are often acknowledged as the engine of national economic growth, it is relevant to investigate why SMEs in Ghana have not taken up the many opportunities of e-commerce considering the rapid growth of online businesses in the developed countries.

3.1 Research Questions and Conceptual Framework

1. *What are the determinants inhibiting ICT adoption in SMEs which also prevent SMEs from considering e-commerce in Ghana?*
2. *What are the likely e-commerce implementation concerns that may also prevent a successful implementation of e-commerce SMEs in Ghana?*

The main objective of this study is to investigate the barriers to e-commerce implementation in SMEs in the Northern Region of Ghana. A framework for e-commerce barriers in SMEs was adopted and questionnaire was designed to collect the needed information to achieve our research objective and goal.

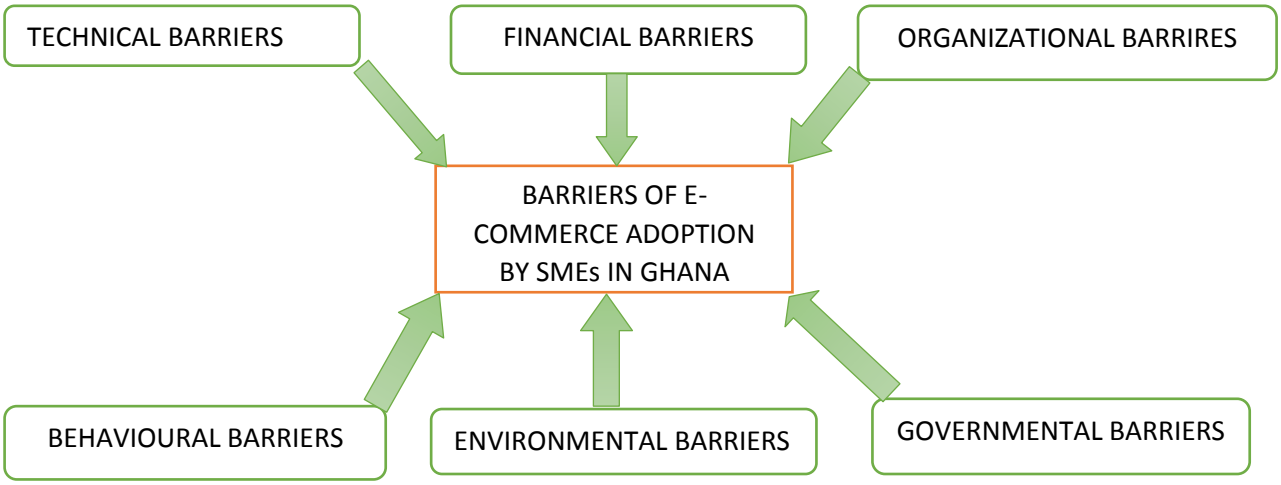

Figure 1: Conceptual Framework for E-Commerce Adoption Barriers in Ghanaian SMEs.

3.2 The Research Philosophy and Questionnaire Design

The adoption of e-commerce is alike to the acquisition level of ICT. The study also dived and investigated into the determinants of ICT adoption with regards to SMEs. A total of thirty-six barriers of ICT and e-commerce was combed from the related literature studies. From the conceptual framework (Figure: 1) and Table:1, the thirty-six barriers were grouped into six by the help of professionals, experts and the interviewees.

Both quantitative and qualitative methods of data collection were employed. The qualitative data was gathered through unstructured interview lasting for 30 minutes. Structured questionnaire was used for the secondary data collection. The design of the questionnaire reflects the barriers from the conceptual framework (Figure: 1) and Table 2. Participants were tasked to select their most significant barriers with regards to e-commerce adoption in their SMEs. The questionnaire comprises of thirty-six barriers, grouped under 6 headings with a 5-point Likert-type scale which ranges from “5- Strongly Agree” to “1- Strongly Disagree” was adopted in the questionnaire administration.

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The target population consists of both SME owners and core employees from the four district capitals (Tamale, Bole, Walewale and Yendi) which are the major economic hubs in the Northern Region of Ghana. Quantitative approach was adopted to identify the magnitude of each determinant influencing barriers of e-commerce adoption among Ghanaian SMEs in the Northern Region. Stratified sampling technique was used to obtain the cohort of SMEs, who are willing to participate and provide appropriate information with respect to depth and breadth of the research philosophy.

A sample of 120 respondents were selected for this study. The sample size of each area was based on the number of SMEs available in each district capital. Systematic sampling technique was used to get fair distribution of respondents within each zone. The data collected was tested, analyzed and interpreted using SPSS version 21.

Table 1: SME Distribution (Economic Hub Districts of the Northern Region)

District Capital	Frequency	Percentage (%)	Cumulative (%)
Tamale	**40**	**33.33**	**33.33**
Bole	**40**	**33.33**	**66.66**
Walewale	**20**	**16.67**	**83.33**
Yendi	**20**	**16.67**	**100**
Total	**120**	**100**	

Source: Computation from field survey, 2016

Table 2: E-Commerce Adoption Barriers in Ghanaian SMEs

Barriers	Items
Financial	Cost of setting up e-commerce is high Need extra staff to manage e-commerce systems Difficult to explain the cost with desired benefits Paying consultancy fees and training personnel Buying necessary ICT for e-commerce Maintenance of website and other infrastructures
Environmental	Information from e-commerce is not useful Market potential of e-commerce users is too small E-commerce is not as effective as traditional channel Most suppliers do not have access to e-commerce Insufficient qualified vendors for developing applications It will upset existing distribution channels
Organizational	Our sales/marketing require high degree of human interaction Difficult in changing the current working procedures Lack of skilled workers to handle or maintain e-commerce Lack of knowledge about the potential applications of e-commerce Weak support from top management Lack of management support

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Technical	Insufficient security for online credit payment and transactions Insufficient security to prevent hacking and viruses Inadequate quality and speed of lines Telecommunication infrastructure is not adequate Lack of credit cards and payment systems Lack of technical know how
Governmental	Absence of legal and regulatory systems Change in regulations with each Government Changes in government policies No simple procedures and guidelines Lack of government leadership Economic and political instability
Behavioral	Keeping up with changing technology Mindset shift towards using e-commerce Lack of visionary leadership Low literacy-levels amongst SME owners Lack of management support Trade agreements and transactions (face-to-face)

Source: Field Survey, 2016

Table 3: Distribution of SMEs by Sub-Sector in the Economic Hub Districts of the Northern Ghana

Organization Type	Frequency	Percentage (%)	Cumulative (%)
Cinema	6	**5**	**5**
Garments/textiles	6	**5**	**10**
Auto parts and engineering	6	**5**	**15**
Machinery and equipment	6	**5**	**20**
Imports/ Exports	6	**5**	**25**
Electronics	6	**5**	**30**
Stationeries	6	**5**	**35**
Wood, and wood products	6	**5**	**40**
Metal and metal products	6	**5**	**45**
Other manufacturing	6	**5**	**50**
Health /Hospital	6	**5**	**55**
Printing and Publishing	6	**5**	**60**
Food and Beverages	6	**5**	**65**
Repair of Motor Vehicle	6	**5**	**70**
Information Technology	6	**5**	**75**
Construction	6	**5**	**80**
Transportation	6	**5**	**85**
Hotels and Restaurant	6	**5**	**90**
Education/Training	6	**5**	**95**
Supermarkets	6	**5**	**100**
Total	**120**	**100**	

Source: Computation from field survey, 2016

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4.0 DISCUSSION OF EMPIRICAL FINDINGS

The SME sector is acknowledged to play an imperative role in the economic growth and development of Ghana with regards to their GDP contribution and employment creation. However, the SME sector in Ghana is yet to unleash their full potential due to numerous factors impeding their growth. Numerous studies have identified e-commerce as a tool for SMEs growth. Despite these inhibiting factors, SMEs performance is recognized, hence a research investigating the factors of adoption of e-commerce will benefit SMEs and Ghana as a whole.

Concerning the gender of the respondents in Table 8, 79.17% (95) and 20.83% (25) represents males and females respectively, illustrating males enterprising nature in Ghana. Majority of the respondents are married with 79.17% (95), 17.50% (21) being single and 3.33% (4) divorced. The same table also illustrates the positions of the respondents. Out of the 120 respondents, 33.33% (40) are Owners, 25.00% (30) are Managers, 23.33% (28) are Supervisors while Operational Staffs represents 18.33% (22).

Despite the 44.3% website users against 55.6% non-adopters of website, none of these enterprises have an online payment or transaction mechanism. Electronic advertising and electronic marketing are the most used e-commerce applications in Ghana with 73.4% and 69.3% respectively as shown in Table 5.

The descriptive analysis from Table 6 shows the average of the six barriers of e-commerce adoption by Ghanaian SMEs. The table indicates that the group barriers ranges from 2.37 to 3.85. However, out of the thirty-six individual barriers the highest average barrier recorded is 4.61 followed by 4.18 representing the item ‘Cost of setting-up e-commerce is high’ and ‘Buying necessary ICT for e-commerce’ respectively. The least important average barrier is item ‘Economic and political instability’ representing 2.08. Cost or financial resources associated with e-commerce adoption and implementation has remained in literature as the most mentioned inhibiting factor.

5.0 CONCLUSION AND RECOMMENDATION

Although there exists an avalanche of literature on e-commerce, its adoption models and its implementation, relatively few studies have focused on SMEs in the developing countries like Ghana. Studies argue whether SMEs can equally benefit from e-commerce like LSEs and what are the factors that might thwart SMEs from taking-up e-commerce projects. Addressing the gap in the literature, this study aims to gain a clearer picture of the determinant factors that prevent Ghanaian SMEs from adopting e-commerce models. The conceptual framework was drawn from issues relating to SMEs characteristic nature and e-commerce implementation and their adoption models. Questionnaires were administered to a set of SMEs to provide their perceptions on e-commerce adoption.

The results show that the SMEs show a worthy perception of e-commerce. The SMEs who have already adopted e-commerce has included it in their long-term plans considering e-commerce as innovative and significant. However, majority of these SMEs are yet to adopt or embark on e-commerce. Numerous reasons have been outlined, including lack or inadequate financial resources, lack of e-commerce knowledge and the absence of important regulations and standards of e-commerce are mentioned barriers to e-commerce adoption.

E-commerce possess the potential to enhance how SMEs operates both internally and externally alongside improving customer services. Specifically, e-commerce increases cost efficiency, enhances productivity and reinforces the possibilities of growth. Moreover, the adoption and implementation of e-commerce by SMEs can enrich business relationships and cooperation, quality and diffusion of knowledge.

According to the related literature review and outcome of the results, the following deductions are drawn:

1. Currently, basic applications of e-commerce are adopted by the Ghanaian SMEs mostly for advertisement and marketing. The Internet and emails constitute the most common technologies

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used. However, regulations and standards need to be set to enable online payments and related transactions.

2. Influences that may hinder the adoption and implementation of e-commerce include: lack of financial support, lack of technical knowledge and Internet security.
3. With regards to the implementation of e-commerce, it is relevant to create awareness of e-commerce; its services and benefits. Moreover, a uniform and strategic plan for its adoption needs to be created. Also, the socio-cultural practices need to be carefully addressed to enable the citizens and SMEs to trust and patronize e-commerce systems.

To fully harness the potential opportunities of e-commerce by the Ghanaian SMEs and gain competitive advantage over their competitors in both the local and global markets, the following are recommended:

1. Since lack of financial related support was the single most important barrier from the results, The Government of Ghana should develop appropriate schemes to foster and encourage e-commerce adoption by initiating special funds dedicated to supporting SMEs taking-up e-commerce, investing in ICT and building infrastructures to train employees of SMEs.
2. Stakeholders and the government should help to promote e-commerce awareness, enacting supportive policies, subsidizing the cost of e-commerce related tools and developing customized e-commerce applications and products.
3. SME managers need to be engaged into strategic alliance with business partners in the international, regional and domestic environment to team-up and seek for sectors for mutual learning and promote growth.

This study highlights the potential barriers of e-commerce amongst Ghanaian SMEs and its potentials. This work provides the foundation for future large sample quantitative research. There is the need to develop a framework to generalize and investigate the factors that expedite or impede e-commerce performance and adoption in SMEs. Moreover, future studies can address the criteria for e-commerce investment.

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Appendix (1): Questionnaire: E-commerce Adoption Barriers in Ghana

1 = Strongly Disagree, 2 = Disagree, 3 = Neutral, 4 = Agree, and 5 = Strongly Agree

Adopting e-commerce? **Yes** **No**

Our SME does not use e-commerce because of:

Barriers	Items	1	2	3	4	5
Financial	Cost of setting up e-commerce is high					
	Need extra staff to manage e-commerce systems					
	Difficult to explain the cost with desired benefits					
	Paying consultancy fees and training personnel					
	Buying necessary ICT for e-commerce					
	Maintenance of website and other infrastructures					
Environmental	Information from e-commerce is not useful					
	Market potential of e-commerce users is too small					
	E-commerce is not as effective as traditional channel					
	Most suppliers do not have access to e-commerce					
	Insufficient qualified vendors for developing applications					
	It will upset existing distribution channels					
Organizational	Our sales/marketing require high degree of human interaction					
	Difficult in changing the current working procedures					
	Lack of skilled workers to handle or maintain e-commerce					
	Lack of knowledge about the potential applications of e-commerce					
	Weak support from top management					
	Lack of management support					
Technical	Insufficient security for online credit payment and transactions					
	Insufficient security to prevent hacking and viruses					
	Inadequate quality and speed of lines					
	Telecommunication infrastructure is not adequate					
	Lack of credit cards and payment systems					
	Lack of technical know how					
Governmental	Absence of legal and regulatory systems					
	Change in regulations with each Government					
	Changes in government policies					
	No simple procedures and guidelines					
	Lack of government leadership					
	Economic and political instability					
Behavioral	Keeping up with changing technology					
	Mindset shift towards using e-commerce					
	Lack of visionary leadership					
	Low literacy-levels amongst SME owners					
	Lack of management support					

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	Trade agreements and transactions (face-to-face)					

Table 4: Sectors Website Usage

Sectors	**% of E-commerce Adoption**	
	Yes	**No**
Cinema	56.3	43.7
Garments/textiles	25.3	74.7
Auto parts and engineering	36.4	63.6
Machinery and equipment	46.8	53.2
Imports/ Exports	43.5	56.5
Electronics	39.4	60.6
Stationeries	41.5	58.5
Wood, and wood products	28.5	71.5
Metal and metal products	37.7	62.3
Other manufacturing	26.8	73.2
Health /Hospital	53.6	46.4
Printing and Publishing	48.1	51.9
Food and Beverages	48.5	51.5
Repair of Motor Vehicle	36.3	63.7
Information Technology	63.8	36.2
Construction	46.8	53.2
Transportation	43.2	56.8
Hotels and Restaurant	61.3	38.7
Education/Training	53.5	46.5
Supermarkets	48.7	51.3
Total	**44.3**	**55.6**

Source: Computation from field survey, 2016

Table 5: Percentage of E-commerce Application Usage

E-commerce Applications	%	
	In use	Not in use
Customer Support Service	36.7	63.3
Order and Delivery System	31.4	68.3
Electronic Advertising	73.4	26.6
Electronic Marketing	69.8	30.2
Online Payment System	0.0	100

Source: Computation from field survey, 2016

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Table 6: Average and Ratings of the Six Barriers

Barriers	Mean	Rating
Financial	3.85	++++
Environmental	3.30	+++
Technical	3.21	+++
Organizational	3.05	++
Behavioral	3.03	++
Governmental	2.37	+

Source: Computation from field survey, 2016

Table 7: Rating Criteria

	Criteria	Rating
1	Population mean greater than or equal to 3.50 (VERY STRONG EFFECT)	++++
2	Population mean greater than or equal to 3.20 but less than 3.50 (STRONG EFECT)	+++
3	Population mean greater than or equal to 3.00 but less than 3.20 (MEDIUM EFFECT)	++
4	Population mean less than 3.00 (LOW EFFECT)	+

Source: Computation from field survey, 2016

Table 8: Demographic Profile and Business Characteristics of SMEs in Ghana

Variables	Options	Frequency	Percentage (%)	Cumulative (%)
Gender	Male	95	79.17	79.17
	Female	25	20.83	100
	Total	120		
Marital Status	Single	21	17.50	17.50
	Married	95	79.17	96.67
	Divorce	4	3.33	100
	Total	120		
Respondents Positions	Owner	40	33.33	33.33
	Manager	30	25.00	58.33
	Supervisor	28	23.33	81.66
	Operational Staff	22	18.33	99.99
	Total	120		
ICT Adoption	Yes	53	44.17	44.17
	No	67	55.83	100
	Total	120		

Source: Computation from field survey, 2016

UNDER PEER REVIEW

Table 9: Barriers of E-commerce Adoption by Ghanaian SMEs

Financial Barriers	Cost of setting up e-commerce is high	4.6083
	Need extra staff to manage e-commerce systems	3.6417
	Difficult to explain the cost with desired benefits	3.2167
	Paying consultancy fees and training personnel	3.5417
	Buying necessary ICT for e-commerce	4.1833
	Maintenance of website and other infrastructures	3.9167
Environmental Barriers	Information from e-commerce is not useful	2.2833
	Market potential of e-commerce users is too small	3.4
	E-commerce is not as effective as traditional channel	3.4833
	Most suppliers do not have access to e-commerce	3.625
	Insufficient qualified vendors for developing applications	3.7167
	It will upset existing distribution channels	3.3167
Organizational Barriers	Our sales/marketing require high degree of human interaction	3.8333
	Difficult in changing the current working procedures	2.8083
	Lack of skilled workers to handle or maintain e-commerce	2.7667
	Lack of knowledge about the potential applications of e-commerce	2.6083
	Weak support from top management	3.3333
	Lack of management support	2.9667
Technical Barriers	Insufficient security for online credit payment and transactions	3.0833
	Insufficient security to prevent hacking and viruses	3.55
	Inadequate quality and speed of lines	3.3167
	Telecommunication infrastructure is not adequate	3.3917
	Lack of credit cards and payment systems	3.3917
	Lack of technical know how	2.5333
Governmental Barriers	Absence of legal and regulatory systems	2.7583
	Change in regulations with each Government	2.375
	Changes in government policies	2.3583
	No simple procedures and guidelines	2.475
	Lack of government leadership	2.2
	Economic and political instability	2.075
Behavioral Barriers	Keeping up with changing technology	3.4833
	Mindset shift towards using e-commerce	3.35
	Lack of visionary leadership	2.1417
	Low literacy-levels amongst SME owners	3.4417
	Lack of management support	2.8667
	Trade agreements and transactions (face-to-face)	2.8833

Source: Computation from field survey, 2016