

## The adoption of e-commerce in small businesses: an empirical evidence from retail sector in Nigeria

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### Keywords

E-commerce, Small Scale Enterprises, Retail Trade, South Western Nigeria

### Abstract

*Studies have been conducted on the barriers and the determinants of the use of e-commerce in Small and Medium Scale Enterprises (SMEs) in developing countries. However, studies on the adoption of e-commerce in Small Scale Enterprises (SSEs) in developing countries' retail sector, particularly Nigeria, are scanty. This study explores the barriers and the extent of e-commerce adoption by SSEs in retailing sector in the South Western part of Nigeria. The data for this study were derived from the administration of questionnaires on the owners of 228 SSEs selected for the study. The data collected were analyzed using descriptive statistics. The study reveals that the majority of the SSE owners in the study area are yet to adopt e-commerce. Moreover, those that have adopted it are at the early stage of e-commerce. Besides, the study shows that retail SSEs' online sale is virtually zero. The paper concludes that for the opportunities offered by the e-commerce to be optimally utilized in Nigeria retailing SSEs, regular electricity supply, government financial assistance, internet security, and developed legal and regulatory system must be provided.*

### Introduction

Small and medium scale enterprises have been widely acknowledged as being the most viable vehicle for sustaining industrial development because they possess the capacity to promote an indigenous enterprise culture (Ugwushi, 2009). In most developing economies, SSEs are being used as a strategy for employment generation, food security, poverty alleviation, rapid industrialization, and reversing rural urban migration, as well as being a tool for economic restructuring for development and growth (Johnson, 2011). This is why the development of SSEs has attracted the attention of governments, academics, researchers and policy makers around the world in finding ways to facilitate the development of SMEs – and among other initiatives, through the effective adoption and utilisation of e-commerce.

Nowadays small businesses are increasingly using and adopting e-commerce due to the advent of Personal Computer, cost-effectiveness and cheaper information communication technology (ICT). ICT can improve business competitiveness with internet providing numerous opportunities for SMEs to compete equally with large corporations (Alberto and Fernando, 2007). E-commerce has a positive impact on business operations. It conveys a wide range of benefits, and companies that are left behind in adopting this new system cannot compete favourably in the global marketplace (Noor, 2009). Small businesses in particular can now overcome some of their major disadvantages, such as size, limited financial, technological and human resources, and limited exposure to the global marketplace, by adopting Internet technologies (Cooper and Burgess, 1998; Maswera, Dawson and Edwards, 2008; Olatokun and Bankole, 2011).

Despite the fact that many small businesses are turning more and more to global markets (Stockdale and Standing, 2004), studies have found that small businesses in both developed and developing countries are slow in adopting e-commerce than their larger counterparts and,

indeed, invest less in e-commerce technologies per employee than larger firms (Buckley and Montes, 2002; Apulu and Ige, 2011; Iddris, 2012; Ireferin *et al*, 2012). Nigeria small businesses are not exempted from the slow pace of e-commerce adoption. Nigeria at present has an estimated 50 million internet users and many telecommunication companies providing internet services. Despite this laudable growth that has been recorded in the Nigerian Telecommunication sector in the last decade, little is known about small businesses e-commerce activities. Hence, the thrust of this study is to explore the extent of e-commerce adoption and the barriers to e-commerce adoption in small businesses in Nigeria retail sector.

### **Conceptual Considerations and Relevant Literature Small Scale Enterprises (SSEs)**

There is a bit of controversy as to what business units can rightly be referred to as a Small and Medium-scale Enterprise. According to Cohen and Morrison (2004), definitions vary from country to country, from one industrial grouping to another and from one financial institution to the other. Generally, some parameters are used either singly or in combination (Cohen and Morrison, 2004). These are capital investment on plant and machinery, number of workers employed, and volume of production or turnover of business.

The UNIDO (1996) defined small scale enterprise in terms of number of employees by giving different classifications for industrialized and developing countries. The definition for industrialized countries is given as firms with 99 or less workers while those of developing countries is defined as firms with 5-19 workers. The European Union Report (2005) adopted the concept of threshold in defining small, medium and micro enterprises. The report classified a small scale industry as comprising of enterprises which employ between 10 - 49 persons and whose turnover threshold and balance sheet is about 10 million pounds. In U.S.A., a small-scale industry is one that is independently owned and operated with a capital base of not more than 5 million dollars. In the Philippines, small enterprises have been defined as enterprises having between 10 to 99 workers. Also in Malaysia, the Malaysian Ministry of Internal Trade and Industry defined SME as a company with an annual sales turnover of not more than RM25 million, and not more than 150 full-time employees (Hashim, 2007).

In the sub Saharan African region, definition of small scale enterprises varies from country to country. For instance, the Ghana Statistical Service (GSS) in its Industrial Statistics considers firms with fewer than 10 employees as small-scale enterprises. Also the National Board for Small Scale Industries (NBSSI) in Ghana applies both the "fixed asset and number of employees" criteria. It defines a small-scale enterprise as a firm with not more than 9 workers, and has plant and machinery (excluding land, buildings and vehicles) not exceeding 10 million Ghanaian Cedis. The Ghana Enterprise Development Commission (GEDC), on the other hand, uses a 10 million Ghanaian Cedis upper limit definition for plant and machinery. Steel and Webster (1991), and Osei *et al* (1993) in their work used an employment cut-off point of 30 employees. Recently, the Regional Project on Enterprise Development (RPED) in Ghana manufacturing survey paper classified small enterprise as those firms that employed between 5 and 29 employees. In Sierra Leone, Liedholm and Chutta (1986) defined small scale industries as those employing less than 50 persons.

Also, in Nigeria, the Centre for Industrial Research and Development (CIRD) at the Obafemi Awolowo University, Ile-Ife, Nigeria (1979) had defined a small scale industry as an enterprise having a capital base excluding land of between 1 to 20 million naira (\$6250 to \$125,000) and employing no fewer than 50 full time workers. More so, according to Omisakin (1999) the Central Bank of Nigeria states that in the area of commercial banks, small scale industries are those with annual turnover not exceeding N5 million (\$31,650). The Nigerian

Industrial Development Bank (NIDB) now Bank of Industry (BOI) defines as small scale, industries with project cost (investment and working capital) not exceeding N3.0 million (\$18,750). Moreover, the National Economic Reconstruction Fund (NERFUND) defined small-scale industries as those with fixed assets other than land but inclusive of the cost of new investment as not exceeding N10 million (\$62,500). In the Federal Ministry of Commerce and Industry's guidelines to the Nigerian Bank for Commerce and Industries (NBCI) in 1981/82, small scale enterprises are those with total investment cost no more than N500, 000 (\$3,125) (excluding cost of land but including working capital). However, the NBCI, in its agreement with the World Bank, over the same period, defined small scale enterprises as one with project cost not exceeding N300, 000 (\$1,875) and with cost per job created not more than ₦7, 500 (\$46.88). At the 13th Council meeting of the National Council on Industry (NCI) held in July, 2001, Small Enterprise was defined by the Council as an industry with a labour size of 11-100 workers or a total cost of not more than N50 million (\$312,500), including working capital but excluding cost of land.

### **Barriers to E-commerce Adoption in SMEs**

Many SMEs are not achieving even minimal levels of E-commerce adoption. Despite the many government-led initiatives, barriers to E-commerce have continued to rendering adoption levels lower than initially predicted (Stockdale and Standing, 2004). In the separate studies conducted by Tambini (1999) and Eid *et al* (2002) they found that SME managers are still not convinced that Ecommerce fits the products or services that their businesses offer. Also, studies by Bakos and Brynjolfsson (2000), Sawhney and Zabin (2002), have found that there is still a reluctance for SME managers to adjust their businesses to the requirements and demands placed on it by E-commerce participation. According to Kulmala *et al* (2002) many SMEs felt that E-commerce did not suit the current mix of customers. Chau and Hui (2001) have reported that many respondents did not see any advantage to using E-commerce in their businesses.

According to Hadjimanolis (1999) the barriers to E-commerce adoption can be classified as external or internal to the business. In a study of E-commerce adoption by SMEs in Cyprus, he considers that barriers to adoption can be categorised as either external or internal to the organisation. External barriers include difficulties in obtaining finance, difficulties in obtaining technological information and difficulties choosing the appropriate hardware and software. These difficulties he terms supply barriers. He further nominates two other sub-categories of external barriers that he terms demand barriers and environmental barriers. Demand barriers found by Hadjimanolis include E-commerce not fitting with products and services offered or not fitting with the way their customers wished to conduct their business. Environmental barriers found by Hadjimanolis included complicated governmental regulations and security concerns.

Iddris (2012) conducted a study on the adoption of e-commerce solutions in small and medium sized enterprises in Ghana. He found that 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 are some of the barriers to e-Commerce adoption. MacGregor and Vrazalic (2006) conducted a study on the Swedish SMEs to determine whether any correlations between the barriers existed. The duo found that ten E-commerce barriers could be grouped according to two factors. These were termed "Too Difficult" and "Unsuitable". The barriers that are related to the complexity of implementation techniques, range of E-commerce options, high investments and the lack of technical knowledge and time are termed the "Too Difficult" factor. While "Unsuitable" factor are the barriers related to the suitability of E-commerce to the respondent's business, including the extent E-commerce matched the SME's products/services, the organisation's way of doing business, their client's way of doing business

and the lack of advantages offered by E-commerce implementation. According to them, these two factors are independent and uncorrelated.

Apulu and Ige (2011) reported that electricity, infrastructural inadequacies, and poor service from internet service providers are the key factors that inhibit Nigeria SMEs from effectively utilizing ICT in their various businesses. Also in the study conducted by Ghobakhloo, Arias-Aranda and Benitez-Amado (2011), the quality, availability, and cost of access to necessary infrastructure have been obstacles to e-Commerce adoption in developing countries. According to them, SMEs in industrialized countries have employed a relatively well-developed, accessible and affordable infrastructure for e-Commerce initiatives. Irefin, Abdul-Azeez and Tijani (2012) found that Cost is a major barrier for Small and Medium Enterprises in adopting ICT. Other critical determinants according to them include availability of ICT infrastructure; government support; management support and business size in that order. Khalifa, Irani and Baldwin (1999) pointed out that perceived or real risk is one of the major barriers to the adoption of ICT, the risk can be loss of data, breakdown of IT infrastructure and other uncertainties. Khalifa *et al* went on to state that privacy, security, authentication and legal issues, are the main elements associated with e-Commerce.

Bolongkikit *et al.*, (2006) discovered among other issues that SMEs markets needed a high degree of human interaction, while Scupola (2003) contended that e-commerce is perceived a constant interruption and distraction, too many junk mails and technology change and evolution inhibit e commerce adoption. A study conducted by Lacovou *et al.*, (2005) found that the owner's lack of awareness of the technology and perceived benefits is a major factor to a take up of electronic business. A study conducted by Lacovou *et al.*, (2005). Bodorick, Dhaliwal, and Jutla (2006) 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 perceived by the owners pose as barriers to adoption of e-Commerce.

## Study Area and Methods

The study was conducted in the six capital cities of the six states that make up the south western part of Nigeria. The cities are Ikeja, Abeokuta, Ibadan, Osogbo, Akure, and Ado-Ekiti. The study location was selected because it is estimated that over 50 percent of Small and Medium-sized Enterprises (SMEs) in Nigeria are located in this region. Besides, the region has good internet access with numbers of telecommunication companies providing internet services on their network.

The study employed descriptive survey design. Both quantitative and qualitative data were used, which were collected using questionnaire and interview respectively. A detailed questionnaire that measures the various variables was developed. The items in the questionnaire were initially derived after an extensive literature review and were subjected to thorough scrutiny. The questionnaire is divided into different sections with each measuring different variables. A mixture of 'Yes' or 'No' response and 5 likert scales ranging from 'Strongly Disagree' to 'Strongly Agree' were adopted in measuring the research variables.

The study was focused on small scale enterprises that engaged not more than 29 employees in Nigeria's informal retail sector. Informal retail sector was selected because the country's formal retail sector is extremely small. The study population was difficult to capture because the majority of the retail SSEs in the study areas were not registered officially with the

appropriate authorities. However, a total of 350 surveys were administered by research assistants. Responses were obtained from 268 small businesses in the selected cities giving a response rate of 76.57%. From these, 228 responses were considered to be valid and usable. Thirty five (35) SSE owners/representatives among those that had earlier indicated their interest in the returned questionnaires were selected randomly for structured interview.

### Discussion of Findings

	Frequency	Percentage (%)
<b>Sex of Respondents</b>		
Male	121	53.07
Female	107	46.93
<b>Total</b>	<b>228</b>	<b>100.0</b>
<b>Age of Respondent</b>		
less than 20 years	12	5.26
Between 20 and 40 years	70	30.70
Between 40 and 60 years	102	44.74
Over 60 years	44	19.30
<b>Total</b>	<b>228</b>	<b>100.0</b>
<b>Qualification</b>		
Did not complete secondary school	23	10.09
Secondary School Certification	79	34.65
National Diploma	61	26.75
B.Sc/HND	42	18.42
Postgraduate Degree	11	4.82
Professional Certification	12	5.26
<b>Total</b>	<b>228</b>	<b>100.0</b>
<b>Capital Invested</b>		
Less than \$625	63	27.63
Between \$625 and \$3,125	72	31.58
\$3,126 and \$6,250	48	21.05
\$6,251 and \$31,250	29	12.72
\$31,251 and above	16	7.02
<b>Total</b>	<b>228</b>	<b>100.0</b>
<b>Turnover per year</b>		
Less than \$625	125	54.82
\$625- \$3,125	54	23.68
\$3,126-\$6,250	34	14.91
Over \$6,25	15	6.59
<b>Total</b>	<b>228</b>	<b>100.0</b>
<b>Number of Employees</b>		
Less than 5 people	121	53.07
6-10 people	86	37.72
11-20 people	18	7.89
21-29 people	3	1.32
<b>Total</b>	<b>228</b>	<b>100.0</b>

**Table 1:** Characteristics of SSEs in South Western Nigeria

The sample of retailing SSEs operating in south western Nigeria was dominated by owner-managers whose age ranges between 40 and 60 years is represented by 44.74 percent. This is followed by those between the age group of 20 and 40 years which is 30.70 per cent. The result also shows that only 5.26 per cent fall in age bracket below 20 years while those in age bracket 60 and above constitutes 19.30 percent. 53.07 per cent of the SSEs owners-managers are male while 18.42 percent of them claimed to have university education or higher degrees. Only

10.09 percent claimed not to have completed secondary school. In total, 31.58 percent of respondents claim to have invested between \$625 and \$3,125 in the business, 27.63 percent invested less than \$625 and only 7.02 percent claimed to have invested \$31,251 and above in their businesses. Above one-half of SSEs in the sample exhibited turnover levels below \$625 and employed less than 5 people.

	Frequency	Percentage (%)
Yes	91	48.68
No	117	51.32
<b>Total</b>	<b>228</b>	<b>100.0</b>

**Table 2:** Selected SSEs that use Personal Computer (PC) in Business Operations

Table 2 shows SSEs that use personal computer in their business operations. A total of 91 SSEs (48.68%) indicated that they have access to a personal computer which they use for business operations. 117 SSEs representing 51.329% neither have access to personal computer nor use it in their business operations. The result shows that almost half of the sampled SSEs use PC for their business operations.

Responses	Frequency	Percentage (%)
Yes	37	16.23
No	191	83.77
<b>Total</b>	<b>228</b>	<b>100.0</b>

**Table 3:** Access to PC that is connected to the Internet for Business Operations

Having a personal computer is a pre-requisite to e-commerce adoption. The result revealed that large percentage of SSEs in the South Western Nigeria that claimed to have a PC and use it for business operations were not connected to the Internet. However, the majority of the SSEs owners made use of their mobile telephones to connect to the internet and communicate with their customers and suppliers. Out of the 228 SSEs sampled, only 37 (16.23%) that own a PC are connected to the Internet. While 191 (83.77%) SSEs have access to a PC that is not connected to the Internet.

	Frequency	Percentage (%)
Dial up internet service	7	3.07
Broad band (Internet Service Provider)	11	4.82
Modem	19	8.33
Mobile phone (GSM)	132	57.89
None	59	25.88
<b>Total</b>	<b>228</b>	<b>100.0</b>

**Table 4:** Mode of Connection to the Internet

Table 4 shows the mode of connection to the Internet by the sampled SSEs. Out of 228 SSEs sampled, 132 (57.89%) claimed to have access to the Internet through their mobile phones. 7 (3.07%) SSEs used Dial up Internet connection, 11 (4.82%) SSEs use Internet Service Provider. Also, 19 (8.33%) SSEs use modem internet café. 59 (25.88%) indicate none of the options. This shows that majority of the SSEs access internet through their mobile phones.

	Frequency	Percentage (%)
Website	8	3.51
SMS and e-mail	127	55.70
E-mail only	18	7.89
SMS only	48	21.05
None	27	11.84
<b>Total</b>	<b>228</b>	<b>100.0</b>

**Table 5:** E-Commerce Technologies used by the surveyed SSEs and their frequencies

The most frequently used e-commerce technologies by the retailing SSEs in South Western Nigeria are short messaging services (SMS) via mobile telephone, electronic mail (e-mail) through internet, and wireless web. Result in Table 5 revealed that majority of the SSEs were using both SMS and e-mail to reach out to their suppliers and customers, this is represented by 55.70%. 48 (21.05%) reported using SMS only. This is followed by those that were not using any of the e-commerce technologies which accounted for 11.84%. Only 18 (7.89%) adopted e-mail. Lastly, only 8 (3.51%) retailing SSEs reported using website in interacting with their suppliers and customers. This finding is in line with previous findings; Olatokun and Bankole (2011) and Oborah (2011) posit that SMEs were still in the early or what is popularly known as the first stage of e-commerce adoption ladder in the country.

	Frequency	Percentage (%)
Sourcing for information	36	15.79
Interaction with customers and suppliers	101	44.30
Online payment (POS)	81	35.53
Advertisement of firm's products	5	2.19
Online sales transaction	2	0.88
None	3	1.32
<b>Total</b>	<b>228</b>	<b>100.0</b>

**Table 6:** Usage of E-Commerce Applications among selected SSEs

Table 6 shows various business activities that e-commerce technologies are used for among the sampled retailing SSEs in the selected region. Interaction with customers and suppliers is the highest usage of e-commerce (44.3%). Apart from using e-commerce for communication, other major service provided is Point of Service (POS) (35.53%). 36 (15.79%) and 5 (2.19%) SSEs responded that e-commerce applications were used for sourcing information and advertising company's products online respectively.

Only 2 out of 228 researched SSEs claimed to have a website. However, none reported selling goods and services directly over the website. They only showcase varieties of their products and their prices on the website. This is contrary to the previous study of Olatokun & Bankole (2011) that found traces of online sales among SMEs in the country. This shows that while few medium scale enterprises use e-commerce application for online sales, it is virtually zero among small scale enterprises in the South Western Nigeria. This findings confirm Oborah (2011), Apulu and Ige (2011) that the status of the utilisation of e-commerce among small and medium enterprises in Nigeria is low as the utilisation of e-commerce by SMEs in Lagos metropolis is at the basic level as they only highly utilised the rudiments of e-commerce resources (e-mail and www) in marketing industrial products.

	N	Mean	Std. Deviation
Owner/management does not interested in e-commerce adoption	228	1.89	1.164
Lack of support from government/government agencies and banks is affecting e-commerce adoption	228	2.08	1.239
The financial investment required to implement E-commerce is too high, hence we could not avoid it	228	3.44	1.354
Lack of policy, regulatory, and institutional framework is hindering the adoption of e-commerce	228	3.10	1.332
Internet security issues (cybercrime) is the major challenge facing the use of e-commerce	228	3.23	1.389
Resistance by people and culture	228	1.72	.885
Insufficient knowledge about e-Commerce technology	227	2.60	1.529
E-commerce does not offer any advantages to our organisation	227	1.81	.984
Epileptic power supply in the country is one of the major constraints to e-commerce adoption	228	3.78	1.187
E-commerce is not adopted because it is not suited to our products/ services.	227	2.23	1.310
Lack of right technical skills slow the adoption of e-commerce by businesses	228	2.35	1.442
E-commerce is not suited to our way of doing business hence, it is not adopted	228	1.75	.951
Valid N (listwise)	225		

**Table 7:** Barriers to E-commerce Adoption in Small Businesses in Nigeria Retail Sector

Both e-commerce non-adopting and adopting SSEs were asked to indicate the major barriers that prevented them from adopting and expanding/improving on e-commerce technologies respectively. Their responses were shown in Table 7. The analysis of table 7 revealed that majority of the surveyed SSEs indicated that epileptic power supply in the country is the major issue in e-commerce adoption. This is as shown by the Mean of 3.78 and Standard Deviation of 1.187 on a 5-point Likert scale. Other high expressed barriers are the high financial investment required to implement E-commerce (Mean = 3.44; SD = 1.354); Internet security issues (cybercrime) (Mean = 3.23; SD = 1.389); Lack of policy, regulatory, and institutional framework (Mean = 3.10; SD = 1.332); and Insufficient knowledge about e-Commerce technology (Mean = 2.60; SD = 1.529). However, lack of right technical skills was below average with Mean of 2.35 and standard Deviation of 1.442 on a 5-point Likert scale.

Apart from lack of right technical skills that was below average, unsuitability of e-commerce to company's business and lack of government and banks support have rates that are below average with Mean of 2.23 and 2.08 and Standard Deviation of 1.310 and 1.239 respectively. Lack of interest of owner/representative on e-commerce, e-commerce offers no advantage, and resistance by people and culture with Mean of 1.89, 1.81, and 1.72 and Standard Deviation of 1.164, 0.984, and .885 respectively that are far below average. This analysis shows that epileptic power supply, high financial investment required to implement E-commerce (such as website development and Internet Service Provider connection), Internet security issues (cybercrime), lack of effective policy, regulatory, and institutional framework, and insufficient knowledge about e-Commerce technology are the major barriers hindering the adoption/expansion of e-commerce by SSEs in Nigeria retail sector.

## Conclusion

The study concluded based on the above findings, that despite high computer literacy level and personal computer usage among the SSE owners, the extent of e-commerce adoption in Nigeria retail sector is very low. Besides, e-commerce among retail SSEs is at the rudimentary level because findings revealed that the most common e-Commerce applications are e-mail and SMS via their mobile phones for communicating with customers and suppliers. Thus, online sales among Nigeria retail SSEs were virtually zero. Shortage of energy, electricity and capital, e-commerce security issue and lack of developed/effective legal and regulatory system were identified as major challenges inhibiting the adoption and expansion of e-commerce among the SSEs in the Nigeria retail sector. The paper recommended that for the opportunities offered by the e-commerce to be optimally utilized, there must be a provision of regular supply of electricity. Also, efficient mechanism that offers protection to both the buyers and the sellers over the Internet must be readily available. Moreover, to create awareness about the importance of the e-commerce to SSEs development, seminars, conferences, or workshops must be organized for SSEs owners and managers by stakeholders in the sector.

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