

The Influence of Environmental Factors on the Adoption of E – Commerce by the Small Medium Enterprise in Nigeria

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ABSTRACT

Electronic commerce (EC) offers considerable benefits and opportunities for enterprises. Despite the benefits, however, several scholars have shown that small and medium-sized enterprises (SMEs) have been lagging in EC adoption. In this regard, this study aimed to explore environment as a factor that influence EC adoption among SMEs in developing countries, in the context of Nigerian retail SMEs in southeast Nigeria. The target population consisted of top managements and middle management who are engaged in decision making in the organization. The study selected sample of small and medium-sized enterprise (SME) owners in Imo State, Nigeria. A total of 385 questionnaires were distributed to the respondents through google form, emails and direct administration using hard copies. The data collected from the field via the use of a questionnaire were updated and subjected to a comprehensive analysis to check for reliability and validity of the instrument. The study used SPSS Version 27 and AMOS for descriptive analysis and inferential analysis respectively. An exploratory factor analysis was performed on the questionnaire items. The findings among others include that: gender and age play significant roles in determining whether SME owners adopt e-commerce; educational qualification is moderately associated with e-commerce adoption, environmental factor, government support and competitive pressure are potential obstacles to e-commerce adoption. Based on the findings the following recommendations are proffered: Governments can play a crucial role in creating an environment that is conducive to e-commerce growth through various means, such as financial incentives, regulatory frameworks, infrastructure development, and educational programs. ; policymakers and government agencies can design targeted support programs for SMEs based on demographic characteristics; researchers can build upon these findings by conducting more in-depth studies to explore the specific challenges and opportunities within Imo State's Ecommerce landscape and Consumers should be aware of the environmental practices of businesses and may choose to support those that prioritize sustainability in their Ecommerce operations.

Keywords: E- Commerce, small and medium-sized enterprises (SMEs), environmental factors, organisational factors, adoption of E – Commerce.

1.0 INTRODUCTION

The internet has been used by businesses to handle information and incorporate ecommerce into their redesigned business operations. E-commerce has created a favourable environment for economies to undertake a change from the paradigm of labour-intensive to a knowledge-based model that is highly projected to be dominant in the future. Businesses have benefited greatly from integrating e-commerce into their everyday activities. E-commerce has significantly lowered operating expenses, increased the quality of goods and services, attracting new clients and suppliers, and created fresh distribution channels for goods (Pham, Pham, and Nguyen, 2011). Such advantages are accessible to small- and medium-sized businesses (SMEs) as well as major corporations (Huff, 2000). Both academics and practitioners concentrated mostly on the use of technology and its components are crucial to both developed and emerging economies. It should be highlighted that ecommerce can provide several benefits, but unexpectedly, the adoption of e-commerce by SMEs has remained relatively low. This may be because SMEs differ from large firms in several ways. In both industrialized and underdeveloped countries, SMEs are essential for economic progress. According to estimates, SMEs account for more than 80% of economic growth on a global level.

The goal of this study is to determine how environmental factors influence the adoption of e-commerce by Nigeria's small and medium-sized businesses. Finding the adoption-impacting factors is essential to ensuring adoption success and letting decision-makers and business owners concentrate more on these variables so they can ensure the viability of acceptance and execution of e-commerce by SMEs to realize the advantages expected and overcome the difficulties.

2. LITERATURE REVIEW

2.1 E-COMMERCE

E-commerce, commonly referred to as electronic or online commerce, describes the exchange of money and data for the purpose of purchasing and selling goods or services through the internet. The term "e-commerce" is frequently associated with the online sale of tangible goods, but it can also refer to any form of business deal made possible by the internet. E-commerce, as opposed to e-business, is the term used exclusively to describe the exchange of products and services online. Through online merchants and marketplaces, e-commerce has developed to make it simpler to find and buy things. E-commerce has benefited independent contractors, small enterprises, and big businesses alike by allowing them to sell their products and services on a much larger scale than was previously possible using traditional offline retail.

Previous research on e-commerce by SMEs has typically emphasized acceptance rather than non-adoption of e-commerce. The problem of e-commerce adoption has been treated from a collective perspective, and businesses that have not adopted the technology have been labelled as such, as in the works of Ramsey and McCole (2005) and Scupola (2009). In this research, non-adoption is seen as the firm's final position, which may imply that SMEs are

unable to rationally decide in the firm's favour of e-commerce. Furthermore, according to Ramsey and McCole (2005), it is ill-advised for SMEs not to use e-commerce, and companies who want to compete internationally must embrace it. This study presents the argument that some factors outside of management's control may contribute to its non-adoption in businesses. According to Abdullahi, Jakada, and Kabir's (2015) research, ecommerce is the exchange of data, goods, and services across communications systems.

E-commerce has numerous stages, the first of which is business-to-customer (B2C), in which companies sell their customers items or services directly via the internet. Business-to-business, or B2B, is the level that comes after this one, in this stage, businesses sell their goods and services to other organizations electronically. Finally, customer-to-customer or C2C is an online business model where a customer sells directly to other consumers (Schneider, 2014). New kinds of e-commerce have also evolved with the invention and

appearance of the online platform. These forms include social commerce (the sale of products and services through social media websites) and m-commerce (selling goods and services using mobile apps).

2.2 IMPORTANCE OF E-COMMERCE TO SMES

E-commerce aids the development of enterprises in underdeveloped nations, ecommerce offers a chance to escape the constraints that physical stores enact, facilitating SMEs to sell their inventory stock to anyone in the world. It is motivated by the promising prospects of the internet and other communication tools in lowering transaction costs by omitting some, if not all, physical branches. E-commerce can broaden SME networks beyond national boundaries to reach more nations. Online product research is done by customers to assess the many possibilities and collect information. Consequently, search engine optimization can be utilized to increase an SME's accessibility to prospective clients around the world. SMEs can easily assess the success of any promotional campaign and quantify the effectiveness of their promotional efforts, and other consumer engagement projects thanks to the information created by online sales. SMEs may better meet consumer wants and provide them with acceptable products each time they visit an online store by better understanding client spending habits thanks to data analysis. Likewise, both current and potential clients have access to comprehensive information. You can use your online store as a terrific marketing tool by making detailed information about each product you sell readily available to customers.

2.3 DIGITAL ECONOMY AND E-COMMERCE

Digital economy, often known as E-commerce, is the term used to describe the purchasing and transaction of goods, data, info, activities, and other items over, a network of personal computers and connectivity equipment, generally known as the Internet. In addition to the concept, the authors Chaffey (2002), Ching and Ellis (2004), and Office (1999) use this phrase more frequently, and they include not only the above-mentioned buying and selling processes but also the use of Online technologies. For instance, websites and email can be used to exchange and disseminate information and data within the business or with the assistance of external partners. According to Smith, firms are now dealing with new issues as a result of the growth of Digital technology, such as dramatically shortened life cycle of the product, fierce

global rivalry, more serious and demanding clients, and quick reaction times (2007). According to a survey by Almousa (2013), e-commerce is certainly one of the crucial factors in success and is expanding, especially in the current cutthroat business environment. Businesses can benefit in several ways from e-commerce development. Ecommerce gives businesses a unique way to maximize their resources while also enhancing efficiency and productivity (Lee et al., 2015). To ensure long-term sustainability, businesses are working against the clock to get an edge over their competitors by marketing and promoting a greater range of consumer products and services. The availability of data is made possible by information and communications technology (ICTs), which are centered on telecommunications. Any device that makes it easier to receive, analyse, transmit, and utilize information is considered ICT, according to Beckinsale and Ram (2006). ICTs are made up of the programs, equipment, info management strategies, telecommunications, programming, and gadgets used to create, produce, evaluate, filter, package, redistribute, obtain, and store data. Additionally, utilized in the electronic transmission or reception of information in digital forms are the following computing, emailing, the web, website, social media, and other wireless transmission gadgets, connections etc.

2.4 CONTRIBUTION OF SME SECTOR

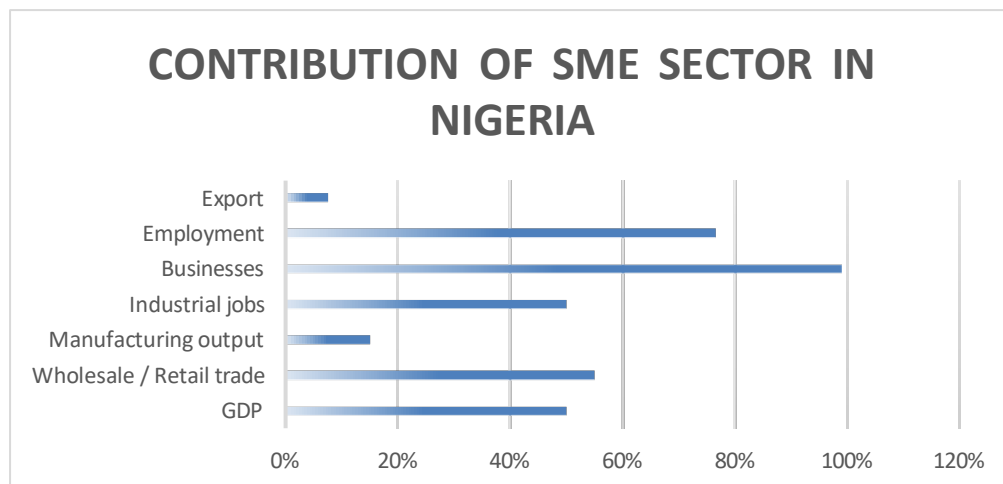


Figure 1. 1 The African Development Bank (ADB, 2018).

Those data clearly show the substantial contribution of SMEs to the overall economic growth of Nigeria. The African Development Bank (ADB) recently expressed concern that Nigeria's teeming youth will face more shortage of decent employment opportunities. (African Economic Outlook 2020) the National Bureau of Statistics (NBS) reported that Nigeria had the highest unemployment and underemployment rates in Africa, at 23.1 percent and 20.1 percent, respectively. By 2020, the unemployment rate is expected to rise to 33.5 percent (National Bureau of Statistics report 2019). According to African Economic Outlook, 20 million additional jobs would be needed on the continent each year until 2030 to absorb new entrants into the workforce. Many experts believe that SMEs might be crucial to the growth

of Nigeria's economy (Abdullahi et al., 2018; Uchenna et al., 2019). The employment of locals can have a significant impact on both the local economy and the general well-being of Nigerian society. Numerous research revealed that Nigeria's SME industry is suffering from production and revenue issues as a result of improper ICT adoption (Okechi and Kopeghom, 2013; Ladokun, Osunwale and Olaoye, 2013; and Mpofu 2016).

2.5 ICT ADOPTION AND SME GROWTH IN NIGERIA

The study was essentially focused on how directors of SMEs in Nigeria utilized ICT. It is vital to emphasize the importance of small and medium-sized enterprises (SMEs) to economic growth in developing countries, particularly Nigeria while examining the relevance of the Nigerian economy in the sub-Saharan region. Small and medium-sized businesses (SMEs) are thought to account for between 85% and 90% of all companies in Nigeria. Therefore, small and medium-sized firms employ the vast majority of the nation's employees (Gbandi & Amissah, 2014; Hassan & Olaniran, 2011). As a means of strengthening the economy and eradicating poverty, the Nigerian government recently embraced the concept of encouraging the development of small and medium organizations (Hassan & Olaniran, 2011). One way small to medium-sized firms in Nigeria support socio-economic development is through transforming conventional or indigenous businesses through the promotion of indigenous entrepreneurs and innovation, the creation of employment opportunities, and the transferring of wealth (Hassan & Olaniran, 2011).

SMEs in Nigeria has several challenges, including limited access to capital, a lack of trained labour, poor financial and operational procedures, an absence of entrepreneurial expertise, and inappropriate use of information and telecommunications technology (ICT) for business administration (Gbandi & Amissah, 2014; Hassan & Olaniran, 2011; Olaniran 2018). Due to the significance of small and medium-sized corporations (SMEs) in both working to develop and developed economic systems, it is crucial to comprehend and research the factors that affect SMEs' success, with an importance placed on how the acceptance of information and communication technology (ICT) appears to contribute to the accomplishment of these SMEs.

2.6 STATEMENT OF THE PROBLEM

The foundation of the investigation underlined the role that SMEs played in Nigeria's economic growth. Despite the crucial and beneficial role that SMEs play in Nigeria, the sector nevertheless faces various difficulties that have been noted by numerous earlier studies. Small businesses have a wide range of needs and behaviours. Micro businesses are lacking in resources, skilled labour, and digital skills, whereas medium businesses are hesitant to grow into large businesses since there are more incentives to remain at the SME level. As a result, many businesses decide to remain in the SME category rather than use technology to advance their operations.

Some of the main issues preventing SMEs from expanding could include but not limited to: lack of expertise, a lack of entrepreneurship skills, low technical advancement, insufficient and inefficient structure, and high staff turnover. The main elements influencing SME development in Nigeria are the national framework for innovation, which includes government regulation, market costs, environmental issues and the effectiveness of connecting networks. E-commerce in developing nations, particularly Nigeria, seem not to

have received enough investigation and the research that is currently being done on ICT in Africa is typically focused on South Africa (Rahayua and Daya, 2015). Therefore, one would wonder if findings from studies undertaken in rich countries could be applied to emerging ones given the paucity of the investigation into e-commerce operations in undeveloped nations.

Nigeria, the most well-known and populous nation in Africa, is arguably a very attractive marketplace for e-commerce services with a contemporary population of approximately 211,400,708 million. Unfortunately, there are still several difficulties that the Online community is now facing in Nigeria, particularly about the acceptance of e-commerce, considering the tremendous development in the development of internet and the valuation of products within There is no question that the goal of e-commerce is to benefit commercial operations. As a consequence, it is anticipated that every company will want to use e-commerce systems. Due to their extensive organizational processes, increasing frequency of contact with the outside world, and variety of highly skilled jobs, large enterprises are regarded to be more inclined to embrace e-commerce. It is believed that small and medium-sized enterprises cannot pay for the extravagance of e-commerce because of their weakened marketing strategy and resource limitations. Small enterprises are typically classified as organizations with low amounts of computer technological (IT) competence and capital accessibility, as well as a weakened market advantage.

Comparable findings found that the low rate of ICT adoption by SME leadership in emerging economies has slowed the rate of economic development in these nations. During the current economic crisis, investing in the Internet and technology for information and communication (ICT) has the possibility of increasing job development and economic expansion. Even though an e-payment platform is a necessary requirement for the introduction of e-commerce Awiagah et al. (2015) stressed that Over 90% of the currency is in circulation in Overall economic growth funds. This critique of the Nigerian market draws focus to the psychological obstacles that e-commerce may face, both from SMEs and their clients.

Several SMEs in Nigeria have overlooked the value of ICT in conducting operations as a result of the increased use of technologies in all facets of life, and they have yet to benefit from the enormous success that comes with integrating ICT.

According to Kurnia (2015), in emerging nations, environmental framework elements are more significant than organizational and technological context factors. Environmental variables, according to Ruhayu & Day (2015), refer to the outside forces that

might either directly or indirectly influence EC acceptance. These factors include vendors, rivals, infrastructure, rules set by the government, etc. Aljowaidi (2015) claims that earlier research on IT acquisition shows that uncertainty is one of the top three drivers of an organization's acceptance of the IT revolution (Aljowaidi, 2015). For example, similar firms are under demand to implement EC development when adversaries begin to adopt EC innovation. The government is another important factor that has an impact on EC acceptance. According to Kurnia (2015), encouragement from the government is crucial in encouraging businesses to incorporate new techniques. Institutions may significantly impact the acceptance of EC by establishing a supportive climate, protection under the law for EC operations, confidentiality protections, safety precautions, and Infrastructure facilities.

Data management can therefore benefit immensely them (OECD, 2017). The adoption of EC by SMEs in Developing countries has, however, been somewhat slow, according to previous

findings. There are numerous studies on the acceptance of EC in developed countries and developing countries, but there is little statistical evidence to show whether environmental variables, such as those in Nigeria, or organizational altitude, affect the acceptance of EC in underdeveloped nations. According to research on the TOE elements that affect the acceptance of EC by SMEs in Nigeria (in the eastern setting), the technical framework is related to aspects like supposed advantage, adaptability, and availability of technology, which have an impact on acceptance. Maryam and Abbas (2019) concur that the unacceptably high technological cost was the key barrier to SMEs' decision to deploy EC technologies, and it is still a significant difficulty today. The more effectively management comprehends the envisioned advantages, the more resources technological and institutional be provided for EC digitization. The adoption of EC-advanced technologies within an organization increases as top management involvement in promoting EC knowledge and benefits increases, due to their inadequate available capital from the organization, SMEs are often sluggish to accept technological breakthroughs, which ultimately affects practically every area of EC acceptance. In his investigation, Abbas Muhammad Rabi (2019) claimed that as management and proprietors are in charge of the entire EC operations, their attitudes are crucial to EC acceptance. Additionally, choices are frequently made by a single individual, usually the manager. Aljowaidi (2015) claims that earlier research on IT acquisition shows that external factors are one of the top three drivers of an organization's embrace of IT development (Aljowaidi, 2015). For example, other firms are under demand to implement EC development when rivals start implementing EC technologies. The government is another important factor that has an impact on EC development. Institutional assistance, according to Kurnia (2015) and Abbas (2019), is crucial in pushing organizations to implement new technology. The government may significantly impact the implementation of EC by establishing a supportive climate, protection under the law for EC operations, privacy protections, safety mechanisms, and Information systems. Due to a lack of confidence, many people still prefer being able to engage with, view, and touch commodities.

Given the dearth of technology acceptance, this research aims to examine the variables influencing EC implementation among SMEs in Nigeria. For Nigerian SMEs to make a significant contribution to the country's development, they must overcome several challenges, including science and technology, organization, and climate change. Simply understanding the relationships between these three variables based on conceptual issues from various affiliates is insufficient. Therefore, more research is required to determine whether the TOE concept and organizational altitude explain the issues facing SMEs as seen in the statistical literature, as well as whether concepts have a good impact on SMEs' success.

2.7. CONCEPTUAL FRAMEWORK

Supported on the early research the current study has developed conceptual framework. in other to understand distinctly or fill up the gaps, it is essential to conduct a new investigation to understand the factors that clearly affect the acceptance of ICT by SMEs in Nigeria.

Technology, Organisation and Environment

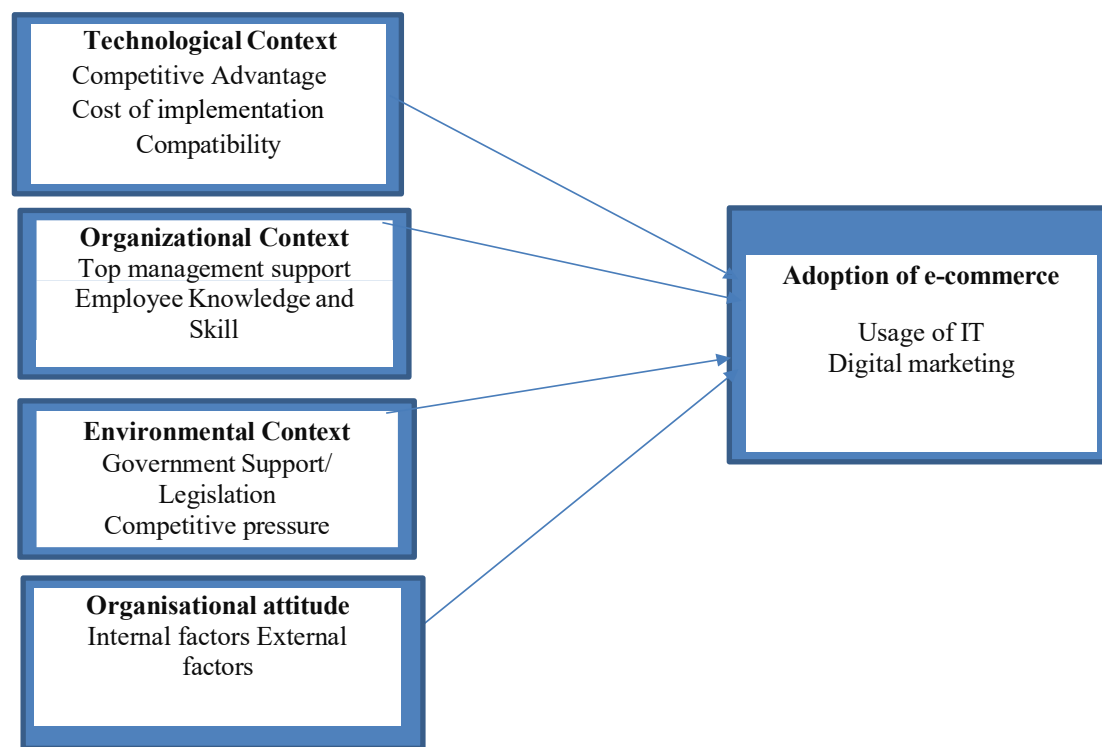


Figure 2.7 Conceptual framework.

Figure 2.7 provides the conceptual framework of the study, which represent the direct relationship among the independent variables Organisational context (OC), Top management support (TMS), Managerial Capability (MC), Organisational culture (OC), Technological Context (TC), Knowledge and skills (KS), Competitive Advantage ((CA), Cost of implementation (CI), Environmental context (EC), Government support (GS), Market factor (MF), with the dependent variable which is Adoption of e-commerce (AE), Usage of IT (UIT), Digital marketing (DM), Customer experience (CE) , hence there is no mediating

variable in this study. All the variables have a single and direct relationship with the dependent variable. The study adopted Technological Organizational Environment (TOE) Framework. The study however is delimited to the environmental framework.

2.8 HYPOTHESIS DEVELOPMENT

Environmental Dimension

H1. Environmental conditions have a significant impact on the adoption of e-commerce systems by the SMEs in Nigeria.

H1 a. Government support has a significant impact on the adoption of e-commerce systems by the SMEs in Nigeria.

H1 b. Marketing factors have a significant impact on the adoption of systems by the SMEs in Nigeria.

3.0 RESEARCH DESIGN

3.1 POPULATION AND SAMPLING DESIGN

According to Garison (2012) a population in the context of research refers to the sample population that the researcher has chosen to gather data from and develop insights from through a sampling method. The outcomes of the study may be applied to the entire population of the study. The population is comprised of SMEs in various sectors of the economy that operate within the Imo State, South-eastern part of Nigeria. The study population encompassed the SMEs top and middle managers involved with the decision-making process of the SMEs. It is found that almost all the SMEs in the study area uses ICT. The targeted population are those who have already adopted EC, however, only the SMEs that have internet access were investigated in this study. According to the Nigeria Bureau of Statistics (NBC) report shows that the total number of enterprises in Nigeria was estimated at 41.5 million. the total 39.65 million micro and small businesses in Nigeria, employing 87.9 per cent of the labour force The Imo state has 27 local governments, which is the highest [number of LGAs in the South-east zone in Nigeria. The South-east zone was made up of two States – Anambra and Imo state. Imo state had the highest adult literacy in Nigeria during the 1990s (75%). Most of the tertiary institutions are located around the state capital Owerri. The South-east zone is one of the six zones in Nigeria, and illustrated as Nigeria's home of business minds, the number of total SMEs in this region in more than 150,000, however the statistics of SMEs is not conclusive. The Small and Medium Enterprises (SMEs) in South-east Nigeria indicate that SMEs employ the biggest labour force in this region. SMEs have the responsibility for developing indigenous technology and diversifying the economy by providing economic sustenance for the rural areas. The people of Imo state are very entrepreneurial, Imo state had the highest adult literacy in Nigeria.

Table 1. Sample size for the study

STATE	SMEs Area (LGAs)	No of Participants 385
Imo	Orlu	62
	Owerri Municipal	100
	Ikeduru	58
	Okigwe	50
	Oguta	55
	Owerri West	60

3.2. SAMPLING FRAME

The sample frame can be thought of as the population that can be reached during a research project, i.e. the size of the population that the researcher can identify and access (Otieno 2015). The sample will be drawn from different categories of the top and middle managements who is involved in the decision making. The top management staffs like the managers who make decisions, the middle managements who are indirectly or directly involved in the management decisions for the organisations. From a sample frame, the researcher can select a manageable sample of the population for the study, this is because a researcher rarely has direct access to the whole population of interest in any form of study, he or she must rely on a sample frame to represent all of the population's people.

3. 3 SAMPLING TECHNIQUES

Sampling techniques are the means of selection of the subjects, sites, groups participants, events or other units of the study or methods to select a sample from the population by reducing it to a more manageable and realistic size Uzomah (2017). The study adopts the Convenience and Purposive sampling. Convenience Sampling was used to select respondents who are owners or the decision-makers of the SMEs. In contrast, Purposive Sampling was used to ensure that the chosen firms possessed at least one ICT system. Convenience and Purposive sampling were utilized in this study. Purposive sampling was employed to ensure that all the firms selected employ at least one ICT system in their business.

3.4 SAMPLING SIZE

Determining the sample size is selecting the number of observations to include in a statistical sample. The researcher used Yamane's (1967) formula for calculating sample size. **n** will represent the sample size; **N** will refer to the population's size and **e** is the margin of error. A

95% confidence level and $e = 0.05$ is assumed for Yamane's (1967) equation below. The sample size is 385.8

$$n = \frac{N}{1 + N (e)^2}$$

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Convenience and Purposive sampling will be employed in this study. First, non-random sampling will be used to select the SMEs within Imo state to ensure that all SMEs with the attributes being investigated have equal chances of being selected. Convenience sampling will be used to determine participants. This ensured that only participants with the characteristics that the researcher required will be selected for the study. Purposive sampling was employed to ensure that all the firms selected employ at least one ICT system in their business.

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3.5 SURVEY QUESTIONNAIRE

The researcher used a questionnaire, the primary data collection tool developed based on the research questions discussed in earlier chapters. The Questionnaire was preferred as the research tool for data collection. They are found to be stable, consistent, and uniform, offering a considered and objective view of issues, which therefore allowed the development of valid inferences from the study (Babbie and Benaquisto, 2009). The questionnaires seek information on three essential areas: participants' demographic profile, ICT systems and services in use, and factors influencing the adoption and use of ICT.

Participants could use a five-point Likert scale with ratings of "strongly disagree" (1) and "strongly agree" (5) to indicate their reaction to each of the items asked in section three of the questionnaire. Section A: Intends to capture your demographic profile of the respondents. It consisted of nine questions concerning the respondent's gender, age, educational qualification, type of organization, what industry the company is operating in, and years of operation, annual revenue before and after the deployment of ICT system and market area of the enterprise.

Section B: Intends to capture the status of using ICT based on Environmental context and the section consisted of five questions. And it is based on 4- point option, adapted from (Okechi Onyedime, 2013) and modified.

Section C: Provides independent research variables that influence the adoption of e-commerce systems by SMEs in Nigeria. This section consisted of 28 questions pertaining to the. Environmental context - government support, market factor. Response will be accessed using the 5 –point Likert scale from strongly disagree (1) to strongly agree (5) and was adapted from (Wahid B Hamad, 2017) and modified.

Section D provides dependent research variable of the study, which is the adoption of e-commerce by the SMEs in Nigeria. This section includes six questions to measure the extent of adoption of e-commerce in the respondents' organization. It was accessed using the 5 – point Likert scale from strongly disagree (1) to strongly agree (5) and was adapted from (Wahid B Hamad, 2017) and modified.

The last section E of the questionnaire has eleven questions to understand the participants' opinion about the questionnaire preparation. The validity of the content is guaranteed by the backing of experts in the given field of study (Gay, 2002). The research data collection tool was validated by the supervisor and other experts who validated the questionnaire. Also it was accessed using the 5 –point Likert scale from strongly disagree (1) to strongly agree (5). Questions was adopted and adapted from (Wahid B Hamad, 2017), (Andrew Paul Otieno 2015) and Lim, S., Lim, S & Trakulmaykee, N. (2018) and modified.

Table 3.1: Hypothesis Variables and numbers of research questions

Dimension	Variables	Number of items (questions)
Technology	Adoption of ecommerce	6
	Cost Of Implementation	4
	Usage of ICT system	5
	Digital marketing	6
	Customers experience	6
Environmental	Competitive advantages	5
	Cost Of Implementation	5
	Environment context	5
	Government support	6
	Market Factor	6

3.6 MEASUREMENT OF VARIABLES

The data collected from the field via the use of a questionnaire were updated and subjected to a comprehensive analysis to check for inconsistencies and determine whether or not they are appropriate. The information is then coded, and the gathered data will be turned into numerical values and uploaded to SPSS and AMOS, which will be utilized in order to create conclusions regarding the subject of the research. When that is complete, the information was entered into the form that is being analysed. The histories of the respondents as well as information about their businesses were analysed, and the results were presented in the form of frequency and percentages using both descriptive and inferential analysis. The background information of the respondents (i.e. business owners or the top managements) and information on their businesses was analysed and presented using descriptive statistics in the form of frequency and percentages. The data for the study will be quantified as follows:

- a. The background information of the respondents (i.e. business owners or the top managements).

3.7 USING DESCRIPTIVE STATISTICS TO CHECK THE ACCURACY OF PARAMETRIC

Using Descriptive Statistics to Check the Accuracy of Parametric Test (e.g., t-test, analysis of variance, Pearson correlation, and multiple regression). If the variables did not fit the assumptions, then the possibility of transforming the variables was evaluated.

Internal Uniformity and Reliability: The vast majority of the variables in this investigation were comprised of a great number of Likert-type questions. For the purpose of determining the reliability of the multi-item scale, the Cronbach's alpha coefficient was applied. The value of each Cronbach's coefficient alpha should be larger than 0.70; this is an appropriate range for the internal consistency and dependability of social science research. If the alpha value was less than 0.70, the items with lower item-total correlations were removed from the study.

Exploratory Factor Analysis (EFA): EFA was used to discover the underlying structure for a number of variables, such as CEO qualities, EC perceptions, environmental factors, and the level of EC adoption. EFA was used to determine the underlying structure for a number of variables.

Pearson and Spearman coefficients: Pearson correlation was used to analyze the relationship between the independent and dependent variables when both variables were nearly normally distributed for all of the study's hypotheses and research questions. Spearman coefficients were used to analyse the relationship between the independent and dependent variables when neither variable was nearly normally distributed.

4. RESULTS

4.1 DESCRIPTIVE STATISTICS

The descriptive statistics pertaining to the constructs within the present study have been displayed in the subsequent tables. These tables illustrate the variables encompassed within each construct, along with their respective means and standard deviations. Additionally, the level of acceptance is depicted. In this research, a 5-point Likert scale was employed as the

measurement framework. Here, a rating of 1 denoted "Strongly Disagree," while a rating of 5 responded to "Strongly Agree," serving as the chosen scale for respondents' answers. These computations were undertaken with the specific intent of gauging the extent of acceptance or agreement concerning each statement presented. The CONSTRUCTS have been categorized for statistical elaboration into three main groups: predictor variables encompassing technological, organizational, and environmental aspects, as well as organizational attitude. Furthermore, the study expounds upon the outcome variable, which pertains to the adoption of E-commerce. To assess the degree of acceptance exhibited by respondents toward each statement, the criteria established by Skordis-Worrall et al. (2016) were incorporated into this investigation. This set of guidelines furnishes the accepted mean value derived from each construct, calculated based on the cumulative mean value obtained from the various items associated with each variable. The decision rules for acceptance or not acceptance of the item statements are as follows:

0.50 – 1.49 Very Low and Not Accepted 1.50 – 2.49 Low and Not Accepted

2.50 – 3.49 Moderate and Accepted

3.50 – 4.49 High and Accepted

4.50 – 5.49 Strongly High and Accepted

Table 4.1: Descriptive Statistics for Environmental Aspects

Variables	Item	Mean	Std	Level of Acceptance
Government Support	GOVSUP1	3.078	1.466	Moderate and accepted
	GOVSUP2	3.460	1.390	Moderate and accepted
	GOVSUP3	3.938	0.969	High and accepted
	GOVSUP4	2.878	1.547	Moderate and accepted
	GOVSUP5	3.569	1.081	High and accepted
	COMPRES1	2.751	1.483	Moderate and accepted
	COMPRES2	2.569	1.478	Moderate and accepted

Competitive	COMPRES	3.634	1.245	High and accepted
Pressure	COMPRES	4.166	0.769	High and accepted

Table 4.1 presented mean and standard deviation of the variables of the construct environmental aspect. The variables are government support and competitive pressure. Government support has five items, while competitive pressure has four items. All the items for both variables have mean scores above the criterion for acceptance, indicating that the respondents rated the variables for moderate and high acceptance. The results show that government support and competitive pressures as variables of environmental aspects are factors e-commerce adoption.

TABLE 4.2: Descriptive Statistics For Adoption Of E-Commerce

Variables	Item	Mean	Std	Level of Acceptance
Adoption of ICT	ADOPICT1	3.558	1.349	High and accepted
	ADOPICT2	3.927	1.035	High and accepted
	ADOPICT3	3.275	1.400	Moderate and accepted
	ADOPICT4	3.865	0.986	High and accepted
	ADOPICT5	3.356	1.343	Moderate and accepted
	ADOPICT6	3.138	1.367	Moderate and accepted

Table 4.2 presented the dependent variable which measures the level of adoption of e-commerce by SMEs in the study area. All the items are rated by the respondents indicating moderate and high level of acceptance of the item statements. The results show that SMEs moderately and highly adopt e-commerce. Item 1 shows that SMEs allow their customers to locate and send information electronically to appropriate contacts within the organization. They also accept order and payments electronically from customers

4.2.1 INFERENTIAL ANALYSIS

Inferential analysis is a type of statistical analysis that involves drawing conclusions about a population based on a sample of data. The goal of inferential analysis is to make generalizations, predictions, or inferences about a larger group (population) from the information collected in a smaller subset (sample). It's a crucial component of quantitative research and helps researchers make informed decisions and draw meaningful insights from their data. In this respect, Exploratory Factor Analysis (EFA) and Pearson correlation were conducted.

Table 4.3: Exploratory Factor Analysis (Efa) Of Environmental Aspects

Variables	Item	Factor	KMO	Bartlett's	df	Sig.
		Loading	Test	Test		
Government Support	GOVSUP1	0.690				
	GOVSUP2	0.630				
	GOVSUP3	0.458	0.520	23.407	10	0.009
	GOVSUP4	0.394				
	GOVSUP5	0.054				
Competitive Pressure	COMPRES1	0.486				
	COMPRES2	0.697				
	COMPRES3	0.514	0.522	21.590	6	0.001
	COMPRES4	0.586				

Table 4.3 also have a rotated component matrix with variables representing "Government Support" (GOVSUP) and "Competitive Pressure" (COMPRES). The given values

represent the loadings of each variable on the underlying factors after a rotation in a factor analysis or similar technique.

4.3.1 GOVERNMENT SUPPORT (GOVSUP)

KMO value of 0.520 suggests that the data might have limitations in terms of its suitability for factor analysis. This value indicates that there could be challenges in extracting meaningful factors from the data, potentially due to low correlations among variables or other issues. The p-value is 0.009, which is significant. This suggests that there are correlations among variables that could potentially be explored through factor analysis. In summary, the KMO value of 0.520 indicates potential limitations in the data's suitability for factor analysis, possibly due to low correlations among variables. However, the significant result of Bartlett's test (p-value = 0.009) suggests that there are underlying relationships among the variables that could be extracted using factor analysis. While the KMO value raises some concerns, the significant Bartlett's test result implies that there might be factors worth exploring in the data.

GOVSUP1 has a loading of 0.690. This suggests a strong positive association with the underlying factors, indicating that GOVSUP1 is a significant contributor to these factors. GOVSUP2 has a loading of 0.630. This also indicates a strong positive association, suggesting that GOVSUP2 significantly influences the underlying factors. GOVSUP3 has a loading of 0.458. This suggests a moderate positive association. GOVSUP4 has a loading of 0.394. This indicates a relatively moderate positive association. GOVSUP5 has a loading of 0.054. This is a weak positive association.

4.3.2 COMPETITIVE PRESSURE (COMPRES)

KMO value of 0.522 suggests that the data might have limitations in terms of its suitability for factor analysis. This value indicates that there could be challenges in extracting meaningful factors from the data, potentially due to low correlations among variables or other issues. The p-value is 0.001, which is significant. This suggests that there are correlations among variables that could potentially be explored through factor analysis. In summary, the KMO value of 0.522 indicates potential limitations in the data's suitability for factor analysis, possibly due to low correlations among variables. However, the significant result of Bartlett's test (p-value = 0.001) suggests that there are underlying relationships among the variables that could be extracted using factor analysis. While the KMO value raises concerns, the significant Bartlett's test result implies that there might be factors worth exploring in the data.

COMPRES1 has a loading of 0.486. This indicates a moderate positive association with the underlying factors. COMPRES2 has a loading of 0.697. This suggests a strong positive association, making COMPRES2 a significant contributor to the factors. COMPRES3 has a loading of 0.514. This suggests a moderate positive association. COMPRES4 has a loading of 0.586. This indicates a moderate to strong positive association. The variables with higher loadings have stronger associations with the underlying factors. For GOVSUP, both GOVSUP1 and GOVSUP2 are strong contributors, while for COMPRES, COMPRES2 and COMPRES4 seem to be the most influential variables.

5.0 Discussion

Environmental Aspect ($B = 0.383$, $p = 0.000$) has a positive coefficient and is statistically

significant, indicating that an increase in Environmental Aspect is associated with a substantial increase in E-commerce Adoption. a B value of 0.383 indicates that for every one-unit increase in "Environmental Aspect," there is a substantial 0.383 unit increase in "E-commerce Adoption." A p-value of 0.000 (often expressed as $p < 0.001$) suggests an extremely low probability that the relationship is due to chance. In this case, it indicates a highly statistically significant relationship. These results demonstrate that "Environmental Aspect" is a highly statistically significant predictor of "E-commerce Adoption," and an increase in the "Environmental Aspect" is strongly linked to a substantial increase in "E-commerce Adoption." This information is valuable for decision-makers and analysts, as it suggests that focusing on environmental aspects can lead to significant improvements in e-commerce adoption levels.

The main objective of this research is to investigate the influence of environmental factor on the adoption of e-commerce by the Small Medium Enterprises (SMEs) in Nigeria. The following research objectives:

- 1 To investigate the environmental factors that influence the adoption of e-commerce systems by SMEs in the southeast Nigeria.

5.1 Direct Influence Of Environmental Factors On E-Commerce Adoption By Smes

The influence of environmental factors on e-commerce adoption was studied using each of the environmental aspects of government support, and competitive pressures. As a result, the researcher tested the following hypotheses:

H₀₁: Environmental factors significantly influence the adoption of e-commerce among the SMEs in the southeast of Nigeria.

H_{01a}: Government support significantly influence the adoption of e-commerce among the SMEs in the southeast of Nigeria.

H_{01b}: Competitive pressures have significant influence on the adoption of e-commerce among the SMEs in the southeast of Nigeria.

The finding revealed that "Government Support" is a highly statistically significant predictor of "Ecommerce Adoption." Increased government support is strongly associated with a substantial increase in "Ecommerce Adoption." The research suggests that "Government Support" is highly statistically significant, indicating a strong and reliable relationship between the level of government support and the extent of e-commerce adoption. In other words, changes in government support have a substantial impact on ecommerce adoption levels. The findings reveal a positive association between "Government Support" and "E-commerce Adoption." This means that as government support for ecommerce initiatives increases, there is a corresponding substantial increase in the adoption of e-commerce practices by businesses and organizations. The primary implication of these findings is that government support can serve as a catalyst for the widespread adoption of e-commerce. Governments can play a crucial role in creating an environment that is conducive to e-commerce growth through various means, such as financial incentives, regulatory frameworks, infrastructure development, and educational programs.

Governments often provide financial incentives, tax breaks, grants, or subsidies to businesses that embrace e-commerce practices. These incentives can offset implementation costs and motivate businesses to adopt e-commerce more readily. Clear and supportive regulatory frameworks can reduce barriers and uncertainties for businesses looking to engage in e-commerce. Governments can work to establish rules and regulations that protect

consumers, ensure data security, and facilitate online transactions. Government investments in digital infrastructure, such as high-speed internet access and reliable payment systems, can greatly enhance the feasibility and efficiency of e-commerce operations. Improved infrastructure makes it easier for businesses to reach customers and conduct transactions online. Government-sponsored educational programs and initiatives can help businesses and individuals acquire the necessary knowledge and skills for e-commerce success. These programs can bridge the digital divide and ensure that all segments of society can participate in the digital economy. Government support for e-commerce can contribute to increased competitiveness on a national and global scale. It can also stimulate economic growth by expanding the market reach of businesses, increasing sales, and creating new job opportunities. Government support for e-commerce can facilitate international trade by enabling businesses to engage in cross-border transactions more easily. This can open up new markets and opportunities for businesses to expand their operations globally.

The finding that "Government Support" is a highly statistically significant predictor of "Ecommerce Adoption" aligns with the findings of other studies you mentioned. These studies provide additional evidence supporting the idea that government support and policies play a crucial role in fostering the adoption of information technology (IT) and related systems, such as Ecommerce. Ghobakhloo, Sabouri, Hong & Zulkifli (2011) argue that government initiatives and programs have a direct impact on the development and diffusion of IT infrastructure. This aligns with your finding, suggesting that increased government support is strongly associated with increased Ecommerce adoption. The development of IT infrastructure is crucial for the growth of Ecommerce. Southern and Tiley (2000) also suggest a strong link between government support and IT development. While their study may not directly focus on Ecommerce adoption, the development of IT is a foundational aspect of Ecommerce, further reinforcing the importance of government support. Arisi-Nwugballa et al. (2016) conducted an empirical study in Nigeria and found that government policy and support significantly affect the adoption of ICT (Information and Communication Technology) systems. Ecommerce is a subset of ICT systems, so this finding supports the idea that government support can drive Ecommerce adoption. Ajayi & Jegede (2014) conducted a similar analysis in Lagos state, Nigeria, and found that government support and policy greatly influence the adoption of ICT systems by SMEs. Since SMEs are often key players in the Ecommerce ecosystem, this study's findings indirectly suggest that government support can impact Ecommerce adoption.

In summary, the finding of the present study is consistent with the existing literature, which indicates that government support and policies have a substantial influence on IT development and ICT system adoption. Given the close relationship between IT and Ecommerce, it is reasonable to conclude that increased government support can lead to a significant increase in Ecommerce adoption, as you have observed.

5.2 Conclusion

This study has made a valuable contribution to the EC adoption among SMEs in Nigeria. This was achieved by addressing the following research question and hypothesis

1. Do environmental factors affect the adoption of e-commerce among the SMEs in the southeast of Nigeria?

The data collected from the field via the use of a questionnaire were updated and subjected to a comprehensive analysis to check for inconsistencies and determine whether or not they

were appropriate. The information was then coded, and the gathered data were turned into numerical values and uploaded to SPSS and AMOS, which were utilized in order to create conclusions regarding the subject of the research.

Also, the means and standard deviations were used to describe the independent and dependent variables. The study ensured that the issues of missing data, outliers, reliability, linearity, normality, homoscedasticity, and multicollinearity were dealt with carefully before the analysis was conducted. Microsoft Excel spreadsheet was used in this study to check for missing data. It was found from careful check that there were no missing data in the dataset used for this study.

In summary, the findings suggest that organizations aiming to enhance Ecommerce Adoption should focus on improving their technical infrastructure, addressing internal challenges, and seeking government support and favorable environmental practices. Additionally, they should be aware of potential barriers related to organizational attitudes, implementation costs, and system complexity. These conclusions provide valuable insights for decision-makers and stakeholders seeking to drive Ecommerce Adoption within their organizations or industries.

The conclusions from the analysis underscore the importance of embracing Ecommerce as a means of growth and competitiveness. By focusing on technical improvements, addressing internal challenges, leveraging government support, and adopting environmentally friendly practices, SMEs can position themselves for success in the digital economy. It is essential for SMEs to adapt to the evolving business landscape and seize the opportunities presented by Ecommerce while being mindful of local and regional dynamics.

Based on the findings and implications for Ecommerce Adoption in Imo State, Nigeria, here are some key recommendations for businesses, government policymakers, and stakeholders to enhance Ecommerce growth in the region.

Policymakers and government agencies can design targeted support programs for SMEs based on demographic characteristics. For instance, programs could be customized for older SME owners or those with specific educational backgrounds to facilitate e-commerce adoption

Businesses, particularly SMEs, in Imo State should prioritize investments in technical infrastructure and digital capabilities. This includes ensuring reliable internet connectivity, user-friendly websites, and mobile optimization to effectively participate in Ecommerce.

Embracing environmentally sustainable practices can be a competitive advantage for businesses. They should consider eco-friendly packaging, energy-efficient operations, and responsible sourcing of products to attract eco-conscious consumers.

Policymakers and government agencies can design targeted support programs for SMEs based on demographic characteristics. For instance, programs could be customized for older SME owners or those with specific educational backgrounds to facilitate ecommerce adoption

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