

ADOPTION OF ELECTRONIC COMMERCE TECHNOLOGY IN EMERGING NATIONS: A CONCEPTUAL REVIEW OF THE LITERATURE

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Abstract

Although electronic commerce has been widely implemented in day to day running of business organizations in developed nations, extant research has shown that in developing countries, the electronic commerce technology adoption are not widely implemented in managing affairs of business organizations. Hence, the growth and development of firms in emerging nations have been bedeviled by several challenges. Nonetheless, the purpose of this study is to conceptually review articles published in archival literature to establish the concept of adoption of electronic commerce technology in emerging nations, discuss the types, benefits and barriers of electronic commerce technology in emerging nations. In this study, the authors found three important buyers and sellers that are of focus in e-commerce transactions as: businesses, consumers and governments. This study also reported that e-commerce is considered useful for business organizations because they play a vital role in shaping the future economy and is the backbone of industrial development in many nations. In addition, the barriers to the adoption of electronic commerce in developing countries are culture, infrastructure, perceived risk, fraud, security concern, legal uncertainty and policy and regulation. This study has contributed by suggesting a new conceptual framework that would add to existing study in this domain of research. The study suggested that

government support in areas of infrastructure for e-commerce and personal computer penetration are essential in encouraging e-commerce adoption.

Keywords: Electronic Commerce, Small Firms, Internet Technology, Technology Adoption, Internationalisation of Firms

INTRODUCTION

The concept of Electronic commerce (E-commerce) predates the Internet. However, initial growth of e-commerce started prior to 1960s, although many applications linked with the innovations emerged around 1970s in form of transferring cash electronically (Solomon and Ajagbe, 2014; Abiso, 2017). However, subsequent innovations that followed around that era are known as electronic data interchange. Okoro and Kigho (2013) posited that the electronic data interchange allowed business transactions such as purchase orders or invoices to be forwarded through electronic means from organisation to organization. Nonetheless, the Internet, a linkage of computer networks, was introduced in 1969 by the government of America to boost academic and scientific research. As the years passed by, the number of organizations using the internet substantially increased, hence, encouraging the exchange of goods and services amongst businesses (B2B e-commerce), and between organisations and individual consumers (B2C e-commerce). Oliveira and Martins (2011) opined that the growth of e-commerce has been seen to be slower than that expected initially with B2B becoming more popular than B2C. In view of this, many descriptions of the term electronic commerce are bound in existing literature. Hence, Abiso (2017) perceived e-commerce as an online interaction between a business and its customers or a business and its suppliers for the placement of orders. He added that the internet becomes an essential component of the business organization adopting the technology. In addition, the e-business involves several stakeholders, including the business that concludes the transactions, its customers and suppliers.

Thulani et al. (2010) argued that the implementation of electronic commerce technology allows firms of all sizes and in all market segments to enhance their competitiveness. It cuts across geographic locations and time zones to save time and costs, to open up new market opportunities and enable even the smallest of firms to compete internationally (Mkomange et al., 2013; Okoro and Kigho, 2013). Electronic commerce spans established processes such as bar code scanning, electronic data interchange, electronic mail, the Internet, the World Wide Web and mobile. The prosperity recorded by firms that implement e-commerce encouraged other businesses that previously do not implement the technology to start to consider adopting

electronic commerce in their daily operations. Oliveira and Martins (2011) reported that the different changes that firms experienced by the implementation of e-commerce have restructured the boundaries of businesses, thus resulting to a new but strong international economy never anticipated before and at a much faster rate than the industrial revolutions.

This article is divided into four sections. The first section deals with the introduction aspect of the study, the second section focuses on an extensive literature review on electronic commerce technology adoption, the third section provides a brief introduction of the methodology. The fourth section deals with the conclusion, recommendation, contributions of the study to knowledge, as well as the potential avenues for future research. Figure 1 below indicated the suggested conceptual framework of the research.

LITERATURE REVIEW

Electronic Commerce Technology

Electronic commerce (EC) has been defined in several ways depending on the context and research objective of the author. Sila (2013) perceived e-commerce in small and medium sized firms as the use of information and communication technology and applications to aid business operations. The author elaborated the definition where e-commerce was viewed as a set of technology that is used to assist online business transactions between the organizations and their direct end customers and between the organizations and others within their business network(s). Thulani et al. (2010) in their opinion suggested more specifically that “e-commerce is the process of buying, selling, transferring, or exchanging products, services and/or information through the use of computer networks via the Internet and Intranets.” The researchers highlighted that e-commerce consists of alternating data to the clients, resulting to conducting the transactions via internet terminals. Olatokun and Kebonye (2010) mentioned that among the criticisms of previous studies on e-commerce is that the implementation in firms is mainly viewed as a dichotomous outcome. However, the adoption or non-adoption approach does not fully address the issue of technology adoption (Hajiha et al., 2010; Mkomange and Ajagbe, 2012). Be that as it may, the phase of e-commerce indicates the e-commerce ability starting from the basic ability of “publishing” data regarding the organization toward “interacting” with its personnel, customers and suppliers to finally “transacting” with the customers and suppliers where the buying and selling are carried out through internet portals (Ghobakhloo et al., 2011).

In another dimension, each of the conceptual frameworks of past studies exposed a set of factors that influence the adoption of different new information technologies in the broader understanding of e-commerce. Moreover, they provide a platform from which an empirical

investigation of the relationship between the level of e-commerce adoption and the benefits that are perceived by its users can be undertaken. Pham et al. (2011) argued that e-commerce is useful for both small, medium and large firms because they play a vital role in shaping the future economy and even considered as the backbone of industrial development in any country. Saffu et al. (2012) stressed that low adoption of electronic transaction by firms could be as a result of inadequate information regarding its benefits and the perception that E-commerce tools and technology were expensive. Moreover, in this new competitive e-environment, firms need to adopt innovative and informed e-marketing strategies to remain distinct, profitable and succeed in domestic and international markets (Ajay and Thobeng, 2015; Bolongkikit et al., 2015; Chilaya et al., 2011).

As a result of the very essential roles that electronic commerce implementation plays in market competition, researchers have suggested that that environmental perspectives which dominates competitive pressure is considered as among the important factors that should be studied in this research domain (Ghobakhloo et al., 2011; Sina et al., 2016). Electronic commerce technology is capable of helping organizations attain substantial productivity. This is particularly the case in situations that business-to business relations, electronic technologies (Ekanem et al., 2017a) can result to rationalization of business processes and cost savings. Ajagbe (2014) opined that as an immediate impact, these technologies allow automation of common processes, such as distribution, sales, after-sales service and inventory management. Ajay and Thobeng (2015) mentioned a variety of ways by which the internet and e-commerce are useful for business organizations. They are that; It facilitates the promotion and development of tourism of developing countries in a global scale. It facilitates the marketing of agricultural and tropical products in the global market. It provides avenues for firms in poorer countries to enter into B2B and B2G supply chains (Pookulangara and Koesler, 2011; Ayo et al., 2011). It assists service-providing enterprises in developing countries by allowing them to operate more efficiently and directly provide specific services to customers globally. As Ajay and Thobeng (2015) defined e-commerce involved both internal and external processes. The internal factors are caused and arise within or inside the company, while the external factors are developed or influenced from outside of the company. Bolongkikit et al. (2015) stated that if an organization has a receptive culture towards new innovations and technologies will ultimately enable them to adapt to e-commerce. Thus, another important factor to be considered is from readiness and receptiveness of the organization itself. On the other hand, the external factors include: technology, market and industry, external support and government support. Some major issues for emerging countries to adopt e-commerce implementation are caused by the poor technology penetration (PC) and lack of telecommunication infrastructure and external

support that provides IT services and e-commerce support. Chong et al. (2014) reported that government support and the readiness of the market or industry are essential in encouraging e-commerce adoption.

Types of Electronic Commerce Technology

Sila (2013) found that among the benefits of electronic commerce is to make useful information available, transact and facilitate the buying and selling of goods and services through electronic platform. However, in e-commerce transactions, there are three essential groups that are of relevance, they are: businesses (B), consumers (C) and governments (G). In addition, the main variation of activities that takes place in electronic transactions occurs between groups of markets: Business to Consumer (B2C); Business to Business (B2B), Business to Government (B2G) and Consumer to Consumer (C2C). Hence, the combinations indicated that either of the groups can go online to seek to buy and sell so long as the need arises. Ayo et al. (2011) suggested that after B2C and B2B markets, the B2G and C2C markets are where most e-business activities occurs. Below is a brief discussion on the different types of electronic commerce available in empirical literature.

Business to Consumer (B2C): Commercial transactions between organizations and individuals or rather business to consumer e-commerce, involves the collection of information, buying of physical goods or information goods and selling of physical goods through electronic medium (Ahmad et al., 2015; Ashrafi et al., 2014; Agwu and Murray, 2015; Asghar et al., 2013). The most frequent form of this type of trading is peculiar in areas of purchasing products and information, and management of personal finance, which pertains to the management of personal investments and finances with the use of online banking tools. Business-to-consumer e-commerce is an operation in which consumers gather data and purchase products using Internet technology. However, Abebe (2014) posited that for these information technology-enabled benefits to materialize, consumers must first adopt online activities, such as securing information and purchasing products from commercial websites.

Business to Business (B2B): Abbad et al. (2011) described B2B electronic commerce trading as a business that sells to other businesses using internet or a private network to cut transaction costs and increase efficiencies. Thence, as a result of this mechanism businesses can sell or exchange goods and services that are components for manufacturing final products or for resale directly cutting out traditional intermediaries. Awa et al. (2010) added that B2B e-commerce tend to eliminate the conventional procurement process built on phone calls and fax machines

and provide substantial cost savings. Alwarawashdah et al. (2012) found that about 80% of e-commerce is of this type and most experts predict B2B e-commerce will continue to grow faster than the B2C segments.

Business to Government (B2G): Business-to-government e-commerce or B2G is generally defined as commerce between companies and the public sector (Zhu and Thatcher, 2010). It also refers to the use of internet for public procurement, licensing procedures, and other government related operations. This kind of e-commerce has two features; first, the public sector assumes pilot/leading role in establishing e-commerce; and second, it is assumed that the public sector has the greatest need for making its procurement system more effective (Savrul et al., 2014; Thulani et al., 2010). According to Ayo et al. (2011), e-government is part of the civil service reforms which was designed to make the Nigerian Civil Service proactive and respond quickly to the needs of the general populace. Pham et al. (2011) added that the concept of electronic government was aimed at lowering bureaucracy that is peculiar to public sector businesses. This was done through the introduction of e-tax, e-learning, e-procurement, e-pricing, e-mail, e-tourism, e-payment, e-revenue, e-policing, e-judiciary, e-health, e-agriculture, e-services, e-kiosk, e-buka etc.

Consumer to Consumer (C2C): Olatokun and Kebonye (2010) perceived C2C as commerce between private individuals or consumers. The authors explained further that with the introduction of information and communication technology, businesses can buy from or sell to anyone including individuals. This type of e-commerce create potential for developing new markets for private individuals or consumers.

Electronic Commerce Technology Adoption in Some Emerging Nations

Ashrafi et al. (2014) stressed that e-commerce has contributed immensely to the growth of businesses in developing countries. Electronic commerce is driven by the perceived potential of the internet and communication technologies in reducing transaction costs by bypassing some, if not all, of the intermediary and facilitating linkages to the global supply chains (Pookulangara and Koesler, 2011; Ajagbe et al., 2015). In addition, e-commerce is perceived to offer many benefits, ranging from modest advantages such as reduced communication and administration costs, and improved accuracy to transformative advantages. This includes enabling business process reengineering or supporting industry value chain integration initiatives such as just-in-time inventory, continuous replenishment, and quick response retailing. Asghar et al. (2013) argued that the electronic business value of ICT-enabled e-commerce lead to improved firm

performance in sales, internal processes and customer/supplier relationships through market expansion, improved information sharing efficiency and improved transactional efficiencies. However, businesses, in particular SMFs in developing countries face challenges different from those in developed countries and differs greatly in adopting and benefiting from e-commerce. Kannabiran and Dharmalingam (2012) posited that organisations adopting e-commerce in developing countries face challenges such as inadequate telecommunications infrastructure, inadequate qualified manpower to develop and support e-commerce sites, inadequate skills among consumers, inadequate timely and reliable systems for the delivery of physical goods, low bank account and credit card penetration, low income and low computer and internet penetration. Hence, the next section of this study examines the adoption of electronic commerce in some developing countries.

Nigeria

Ayo et al. (2011) described Nigeria as having the fastest growing telecommunication market in Africa. The researchers added that the growth of a number of Internet users from year 2000 to 2010 is sporadic as it recorded 21,891.1% growth rate. The Internet World Start in 2010 revealed that there were 200,000 internet users in Nigeria in year 2000 (WTO 2013). This number is however less than 1% of the country's population. However, six years down the line, the number grew to 5million at 3.1% of the nation's population. This figure doubled in 2008 with 10million people having access to the Internet (Oluyinka et al., 2014; Olatokun and Kebonye, 2010). By June 2010, the number of internet users in Nigeria has grown to 43million at 29.5% of the country's population. Agwu and Murray (2015) opined that the increasing users of internet in Nigeria from 0.1% in 2000 to 29.5% of its population in June 2010 shows that the use of internet in the country is growing at a sporadic rate and still has the potential to grow higher.

Slovakia

Saffu et al. (2012) suggested ways to assist Slovakian firms to take action to ensure effectiveness in adopting e-commerce. Al-Fadhli (2011) investigated the link between the perceived strategic value of e-commerce and its adoption by businesses. The authors aimed to understand how firm level e-commerce adoption strategies are implemented in a transitioning economy. The goal is to ascertain if the determinants in Slovakia are the same as those identified in the extant literature in developed countries (Savrul et al., 2014). Slovakia has been successfully transitioning from a Soviet-style centrally run economy to a modern market economy. Significant economic reforms have been made since the country separated from the Czech Republic in 1993. Between 2004 and 2006, Slovakian SMFs created more jobs than large enterprises, outpacing

the EU average for the same period (Zhu and Thatcher, 2010). The Slovakian government has formulated a competitiveness strategy that incorporates the information society. IT is one of the best approaches for Slovakia to become a dynamic, knowledge-based economy.

Malaysia

Ahmad et al. (2015) opined that the realization of the government of Malaysia about the importance of electronic commerce technology adoption has encouraged the allocation of about 12.9 billion Ringitt to e-commerce development in 9th Malaysia Plan (year 2006 - 2010). Kannabiran and Dharmalingam (2012) posited in the local press released on April 18th 2012, a senior officer from Malaysia External Trade Development Corporate (MATRADE) commented that e-Commerce adoption among small firms in Malaysia is still relatively low. However, higher than many other countries in its category. Ahmad et al. (2015) reported on about 19 electronic commerce applications that are prevalent in the country. Ashrafi et al. (2014) argued that shopping in the mall is part of Malaysian's culture, even though other convenient shops are also available in the country. The Minister in charge of Entrepreneurship and Development mentioned that about 70% of small firm owners in Malaysia are IT illiterate (Awiagah et al., 2015). He stressed that most owners of small firms possess below-average ICT skills and seldom use the Internet at their workplace.

South Africa

In South Africa, small firms sector accounts for 40% of GDP and 60% of the workforce in the formal employment (Foon and Fah, 2011; Edesiri et al., 2013). The World Wide Worx Report indicates that more than R2 billion was spent on online shopping in 2010 but the rate of e-commerce adoption by small firm is still rather low. (Solomon and Ajagbe, 2014). Globally, implementing e-commerce has not been easy for small business organizations partly because of the ever-changing field of information systems and the varying needs of local and global business in general. The adoption of e-commerce remains a critical area of investigation in information systems research. Previous studies of ICT and e-commerce adoption report that small firms in developing countries generally have not capitalised on the power of the Internet to extend their businesses beyond traditional borders except in the application of simple technologies such as electronic mail (Ajagbe et al., 2015; Mkomange and Ajagbe, 2012). Some of the reasons put forward from the literature include: cost of acquiring and operating ICT infrastructure, lack of ICT and e-commerce knowledge, owner/manager low literacy levels, inability to perceive e-commerce benefits, unfriendly regulatory policy and requirements, cultural issues and dependence on customer or supplier preferences.

Kenya

The patterns of implementation of e-commerce among small firms in Kenya show a slow progression from the use of the Internet for communication to use of the Internet for research and information search, to the development of websites with static information about a firm's goods or services (Okoro and Kigho, 2013; Oliveira and Martins, 2011). According to WTO (2013) the Internet is revolutionizing the distribution of tourism information and sales. Obviously, the Internet is having a major impact as a source of information for tourism. In Kenya, electronic commerce has transformed some sectors of particularly for small firms, most notably; the travel and finance sectors which have been able to develop successful stand-alone, online initiatives and integrated electronic commerce applications into traditional business processes (Thulani et al., 2010). Online travel and finance enterprises succeeded because they based their products on information and services that were available all day long. The growth of on-line travel services was also enabled by the advent of electronic tickets which did not need to be shipped to customers (Thulani et al., 2010). In Kenya, tour firms including travel agencies as well as specialty tour firms such as diving and adventure tour operators, have also been able to obtain a significant amount of new businesses through the Internet (Oliveira and Martins, 2011). Development of tourism in Kenya has contributed to the growth of the country's GDP, raised the foreign exchange earning capacity, and has created employment.

Ghana

Abor and Quartey (2010) reported that Ghanaian Government in year 2003 was among one of the few African countries with a liberalized telecom market and a vast array of Internet service providers, ranging from total telecommunications products and services to customized data management services. Industrial Internet usage focused on major industrial sectors such as tourism, banking and manufacturing (Awa et al., 2010). Internet user growth in Ghana was held back for many years by poor condition of the national fixed-line network and high cost of connectivity. As a result, Internet penetration languished below 10% of the population (Alrawashdeh et al., 2012). However, the sector developed rapidly following the introduction of wireless and third-generation mobile and wireless broadband technologies.

Oman

The adoption of electronic commerce technology in Oman, a member country of the GCC regional body is relatively low compared to other developing countries around the universe. Afshar et al. (2011) stressed that among the GCC countries, Oman is one of the relatively less developed markets for personal computers. However, most of the large and international

organizations in the country adopt e-commerce appliances in their workplace, enabling the workforce to share resources and to communicate with each other effectively (Al-Fadhli, 2011). Many business organizations in Oman have spent substantial amount of money on the development of ICT infrastructure. In spite of this the status of ICT adoption among small businesses is not similar to that of large and international corporations. Oluyinka et al. (2014) reported that one of the main barriers in ICT adoption is the lack of awareness of benefits offered by the technology. Edesiri et al. (2013) evaluated the factors that inspire small firms to adopt electronic technology. The studies model relied on the direct and indirect influences of technological, cultural, environmental and organizational factors on ICT adoption among small firms in United Arab Emirates. El-Gohary (2012) stated that decision makers in Oman have taken several steps to develop ICT infrastructure. The author added that the growth of ICT continues to increase as technology evolves and IT solutions have now been adopted in most of the public and private sectors in the country.

Benefits of Adoption of Electronic Commerce Technology

Agwu and Murray (2015) stressed that a well articulated e-commerce within an organisation often facilitates growth and expansion. Awiagah et al. (2015) however stated that the application and use of e-commerce in developing countries can lead to substantial savings in communication costs, marketing, advertising, as well as production processes and the delivery of goods and services to various parts of the globe. MacGregor (2010) posited that the possibility of trading through electronic platform from any location is the most obvious and most commonly cited advantage of e-commerce. It is also found to be the most important perceived consumer benefits of internet shopping. Saffu et al. (2008) in their submissions argued that since the boundaries of e-commerce are not defined by geographical or national borders, consumers will benefit from a wide selection of vendors and products, including a wider availability of hard-to-find products. The internet can provide consumers with consistent data on prices, product availability, product types, product alternatives, etc. The consumers may benefit from the shopping process being faster in the market-space than in the market-place as a result of the rapidity of the search process and transactions (Agwu and Murray, 2015; Awiagah et al., 2015). The internet has the potential to offer consumers benefits with respect to a partial, or even a total privacy throughout the transaction process. Thulani et al. (2010) stressed that by embracing e-commerce consumers may benefit from price reductions as a result of increased competition as more suppliers are able to compete in an electronically open marketplace. Manufacturers internalizing activities performed traditionally by intermediaries could also result to reduced selling prices due to a reduction in operational costs. Awa et al. (2010) viewed e-

commerce as responses to the changing environment due to changing tastes and new types of customers who are now demanding quality. In addition, the new sets of value propositions of what these customers want, when they want it and how they want it as well as the cost they are ready to pay. In the same vein, other reasons for e-commerce adoption include but not limited to: Access to extensive online information, price comparison, time savings, online delivery, convenience and accessibility. Despite these benefits, some studies on e-commerce which directly relates to barriers have been widely written in various countries. Thulani et al (2010) in their research in Zimbabwe found that education and channel knowledge are militating factors to adoption of electronic commerce adoption. While Oliveira and Martins (2011), in their research on SMFs within the European Union stressed that consumers' who are motivated by convenience are more likely to indulge in online purchases. MacGregor (2010) found attitude and perceived usefulness as predictors of the usage of the web for retail trading between Australia and Indonesia. Comparative analysis of these findings shows that education and channel knowledge plays key role in Zimbabwe but same was not the case in Europe, rather it bothered on motivation. Savrul et al. (2014) commonly defined e-commerce as the spread and connectedness of production, communication and technologies across the world. Al-Fadhli (2011) argued that globalization creates new structures and new relationships, with the result that business decisions and actions in one part of the world have significant consequences in other places. It is argued that the enterprises operating on a global market can take advantage to enhance their international competitiveness via economies of scale, exploitation of lower input costs, risk compensation, optimality of market segmentation (Agwu and Murray, 2015; Ajay and Thobeng, 2015). The effect of globalization on small firms has received a lot of attention in international circles because although they are small, in both developing and developed countries these enterprises make significant contributions to the economy (Ajagbe, 2014). For many small firms, instead of competing against large multinational firms, they can take advantage of opportunities afforded by e-commerce to access new and often distant markets or global value-chains (Awa et al., 2010).

Barriers to Adoption of Electronic Commerce Technology

There are empirical observations that small firms have been actively searching for solutions and methods that are suitable to adopt and integrate e-commerce into their business processes (Savrul et al., 2014). However, if the implementation of e-commerce succeeds, the expected benefits for small firms includes increased sales, improved profitability, increase productivity, reduced costs connected with inventory, procurement and distribution, improving the quality of service, and guarantee competitive position. On the other hand, if the implementation of e-

commerce does not work, it will impact heavily on small firms with their limited resources. Ashrafi et al. (2014) examined the adoption of e-commerce by small firms and found that they could gain competitive advantage through adopting e-commerce as it could improve market performance by having better access to the market. Asghar, et al. (2013) argued that small firms occupy small/clearly defined niche markets that do not need global connectivity through experimentation as inhibitors to e-commerce adoption. Organisations adopting e-commerce in developing countries face problems such as inadequate telecommunications infrastructure, inadequate qualified manpower to develop and support e-commerce sites, inadequate skills among consumers needed in order to use the internet, inadequate timely and reliable systems for the delivery of physical goods, low bank account and credit card penetration, low income, and low computer and internet penetration (Oluyinka et al., 2014). Barriers to the adoption of e-commerce are also changing over time and may vary along the adoption ladder (Oluyinka et al., 2014; Ekanem et al., 2017b). For some small firms sophisticated in the use of e-commerce, the barriers mentioned above may be unimportant. But they may encounter other challenges as they change their management and organisational structures. They could also restructure business processes to make better use of the Internet and the potential of e-business. Some of the barriers to electronic commerce adoption as found in existing studies are discussed below;

Culture

The use of the Internet for shopping is culture bound and, therefore culture influences its adoption from one country to another. This view is corroborated by Bolongkikit et al. (2015) who explained that the degree of compatibility of the information technology and its various uses with the values and norms of a social system influences its diffusion pattern in that social system. Chong et al. (2012) have also indicated that one of the obstacles which limit the development of e-commerce locally is related to the culture or the behavior of customers when it comes to buying goods and services through credit cards. In Nigeria, the Internet is not compatible with the retailers culture of selling through physical stores and consumers' entrenched behavior of physically visiting the stores, touching, feeling and comparing products before actual purchase is made (Agwu and Murray, 2015; Esowe et al., 2017). For example, a research finding revealed that inability of consumers to inspect a product prior to purchase hinders e-commerce adoption in Malaysia (Ahmad et al., 2015).

Infrastructure

This is another major challenge militating against rapid adoption and continued use of the Internet for business transaction in the developing countries (Ayo et al., 2011). According to

Ghobakhloo et al. (2011) infrastructure refers to the hardware or equipment, software applications and services associated with ICTs, including telecommunication, electricity and grid networks. From this, infrastructure challenge can be group as: the challenge of personal computer penetration, the challenge of access to the Internet, the challenge of electronic payment and the challenge of electricity supply. To start with, the effectiveness of the Internet as a veritable tool of marketing depends on its availability, operational efficiency and performance (Ghobakhloo et al., 2011). According to Foon and Fah (2011), personal computer penetration is the most important indicator of readiness for e-business and ownership of computers is also related to income. It has also been empirically validated that there is a direct relationship between personal computer penetration and e-commerce in the U.S. and Europe.

Fraud and Security Concern

Another serious impediment to the adoption of the Internet to make transaction in the retail industry is security concerns by the prospective and actual shoppers. Chong et al. (2012) defined security as a set of procedures, techniques, and safeguards designed to protect hardware, software, data, and other system resources from unauthorized access, use, modification, or theft. In a recent study, it was reported that the development of online shopping has been slowed by some factors, including online shoppers' concern regarding fraud and security (Foon and Fah, 2011; Ekanem et al., 2017c). It was indicated that lax computer security can make hackers to have access to a vendor websites and steal names, addresses and credit card numbers of their customers.

Perceived Risk

This challenge stems from the factor of fraud and security. As users interact with a new technology, they will learn the usefulness as well as the risks associated with the technology. Chong et al. (2012) defined perceived risk as an assessment of uncertainties or lack of knowledge about the distribution of potential outcomes. Edesiri et al. (2013) argued that perceived risk is a major challenge to the growth of e-marketing. They argued that while there are other factors affecting consumers' adoption behavior on the Internet, perceived risk is a barrier to the repatronage and purchase on the Internet. Perceived risk may influence the attitude and behavior of consumers towards the Internet services. In the case of purchasing on the Internet, it is possible that consumers may perceive disclosing their credit card information as risky, and they have no control over this (El-Gohary, 2012; Edesiri et al., 2013).

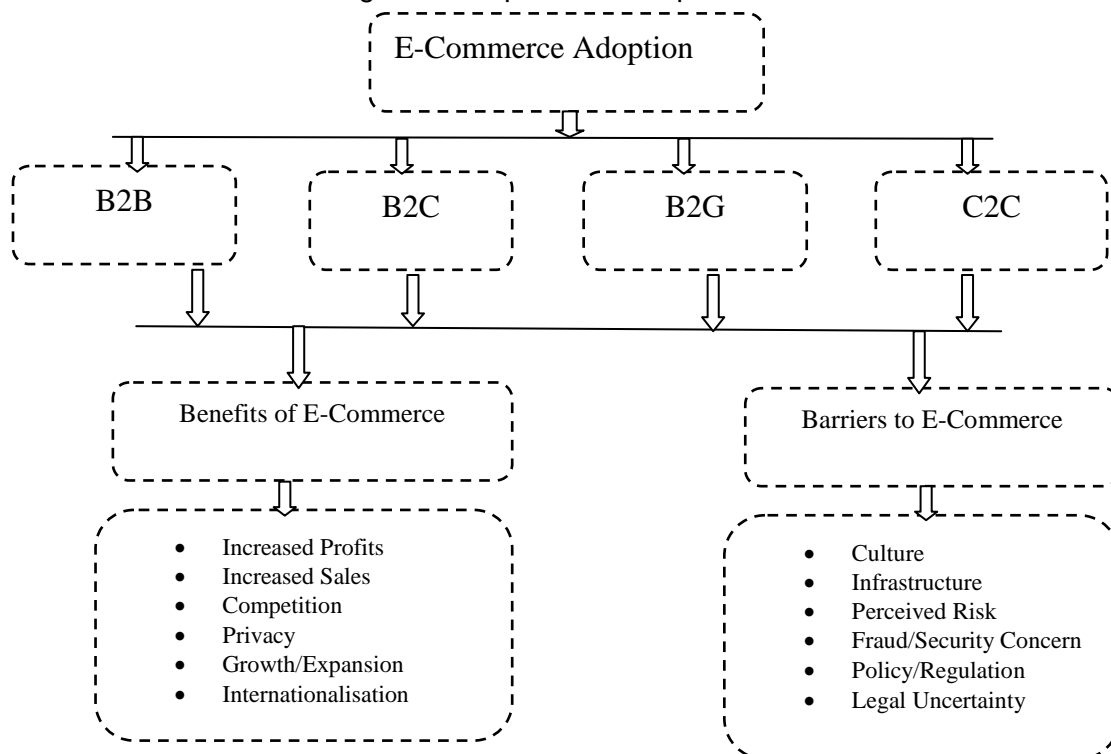
Public Policy Support

With the advent of the Internet many developing nations have not amended their laws to accommodate rights, obligations and responsibilities of the providers and users of the Internet services. Ashrafi et al. (2014) posited that how redress can be sought and obtained in the court of competent jurisdiction could make it difficult for shoppers to get redress in case of injury. This has created doubts and distrust in the mind of potential and actual shoppers, and therefore, slowed down adoption of online shopping in these countries (El-Gohary, 2012; Edesiri et al., 2013; Ekanem et al., 2017d). Hence, the non-existence of an e-commerce law contributes to the distrust in the online environment in terms of conducting purchase transactions.

Legal Uncertainties

Most Internet e-commerce transactions are domestic rather than international. Although there may be other reasons, such as the use of a common currency, differences in legal and regulatory environments are among the most important requirements for effective adoption of electronic commerce technology (Abiso, 2017; Ahmad et al., 2015). Legal uncertainties and conflicting regulatory environments for international businesses, particularly B2C, may affect small firms. Hence, in developing countries, there is neither a harmonised legal framework with rules pertaining to the determination of jurisdiction and applicable law nor mechanisms that ensure the international enforcement of legal rulings.

Figure 1: Proposed Conceptual Framework



CONCLUSION AND RECOMMENDATIONS

The purpose of this study is to conceptually review articles published in archival literature to establish the concept of electronic commerce technology in emerging nations, discuss the types, benefits and barriers of electronic commerce technology in emerging nations. In this study, the authors found three important buyers and sellers that are of focus in e-commerce transactions as: businesses, consumers and governments. In addition, the 4 main activity groupings of e-commerce between these markets are: B2C, B2B, B2G and C2C. These combinations implies that either of the three-consumer, business or government can go online to seek to buy and sell so long as the need arises. This study also reported that since e-commerce is considered useful for business organizations because they play important role in shaping the future economy and is the backbone of industrial development in any nation. Among the benefits of implementation of electronic commerce found in this study are increased profits, increased sales, expansion, competition, privacy, growth and internationalization. This study also reported some of the barriers to the adoption of electronic commerce in developing countries are culture, infrastructure, perceived risk, fraud, security concern, legal uncertainty and policy and regulation. This study has contributed by suggesting a new conceptual framework that would add to existing study in this domain of research. The study suggested that government support in areas of infrastructure for e-commerce and personal computer penetration are essential in encouraging e-commerce adoption. Future authors are advised to empirically investigate the variables that have emerged in the suggested conceptual framework in order to validate if they are applicable in a wide variety of context.

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