

Barriers to E-Commerce Adoption in Benin SMEs

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Abstract-- The emergence of electronic commerce (e-commerce) in the 1990s brought great benefits to businesses. E-commerce is a paradigm shift and a competitive tool for small and medium-sized enterprises (SMEs). Despite the benefits of e-commerce, the adoption of technology is limited. This study aimed to identify the factors that constitute barriers to the adoption of electronic commerce in SMEs in Benin. Investigations with six small and medium-sized enterprises concluded that the major barriers are: access to specialized human resources, lack adequate infrastructures, lack of awareness of e-commerce benefits and then lack of security and trust.

Index Terms- E-commerce adoption, E-commerce adoption barriers, Small and Medium Enterprises, E-commerce adoption in Benin

I. Introduction

Since the 19th century, the world has been overwhelmed by the use of Information and Communication Technologies (ICT), resulting from the dual convergence of the computer, telephony and media sectors. It is this junction that has given birth to the Internet that could be qualified as ICT, the most efficient in the sense that it brings together all multimedia by networking them.

With the development of the Internet, the majority of citizens use this tool to access information, and its use is spreading, especially in developed countries. The Internet has revolutionized the world of business, reducing time and distance, this new tool provides access to a wealth of information and facilitates communication across the globe. It opened the door to a new aspect of electronic commerce practice called "electronic commerce", which refers to the exchange of goods and services between two entities on computer networks, which is characterized by rapid growth important sectors of the economy: distribution, banking, service sector

This new practice aims to increase the financial gains of a business through the use of an electronic channel using Information and Communication Technologies (ICT), by reducing document management costs: postal charges, printing and handling costs, reducing the number of documents in circulation through electronic correspondence, establishing favorable payment methods and then finally better customer service.

Indeed, electronic commerce has rapidly expanded and took place first and foremost in the daily life of developed nations, where it has experienced a very rapid expansion and growing success (United States), later in emerging countries (China). However, in developing countries, e-commerce is accumulating a huge delay, depriving people and their economies of an essential and indispensable factor for their development, for this reason, Information and Communication Technologies (ICT) are the major challenge for these countries in hope to accelerate the modernization of their economies and bridging the gaps that are widening with the developed countries.

This study will briefly examine a general research question. It consists in knowing the e-commerce adoption factors in SMEs in Benin, focusing more on the benefits and barriers related to the adoption of e-commerce by Beninese SMEs.

The work begins by examining SMEs and e-commerce followed by discussing the barriers to e-commerce adoption based on previous research. This paper consists of seven sections. First section presented the introduction of the paper. The next section is based on the Small and Medium Enterprises. Third section reviews the literature pertaining to e-commerce adoption. It reviews also the benefits and barriers of e-commerce. Fourth section proposes the Research Methodology, conceptual framework of this study and the investigation. Fifth section presents the expected results. Sixth section concludes the research and the seventh section presents the limitation of study.

II. Small and Medium Enterprises

The concept of SMEs has been subject of a debate that divides the international scientific community, giving rise to the emergence of several lines of research that clash without ever finding a common ground [1]. Defining SMEs in a clear, relevant and consensual way is a difficult exercise. By its acronym and its pronunciation, the SME is a complex notion. The research for a definition has therefore been a permanent concern for administrators and researchers. While the former are generally based on figures to define the SME, the latter insist on the organization, the management method, in short

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on the characteristics specific to this type of company [1] . Authors such as Jacques Lobstein, Peter Drucker and Leon Ginger have focused their definition on the size of the company.

In the new Chinese definition of SMEs, companies in the sectors of agriculture, forestry, livestock and fishing, whose revenues are less than 500,000 RMB (53,931 Euros), are micro enterprises. This standard also applies to companies in the industrial sector employing fewer than 20 persons or whose revenues are less than 3,000,000 million RMB (323,586 Euros). For companies in the software and computer technology services sector employing less than 10 people, or whose revenues are less than 500,000 Rmb(53,931 Euros), for companies in the real estate sector whose revenues are less than one million RMB (107,862 Euros), or whose assets are less than 20 million RMB (2,157 million Euros) [2] .

In Benin, the definition of the SME is a major concern of the public authorities. Several definitions of SMEs are contained in the three investment codes, developed since independence. These are those of 1961, 1982 and 1990, and finally the most recent, the one contained in the charter. For the purposes of this Charter, in Chapter 2 entitled "Concepts", "SME / SMI" means any legally constituted enterprise with regular accounting, which is not a subsidiary of a multinational company and which meets the criteria for a workforce from five (5) to ninety-nine (99) permanent employees, then a social capital stock between one million (1,000,000) and fifty million (50,000,000) CFA francs or investments of an amount between five million (5,000,000) and five hundred million (500,000,000) CFA francs. Today, SMEs constitute the predominant majority of companies in most countries [3]. Indeed, SMEs, according to Dyson (1990), cited in (Thong and Yap (1995)), are about more than 95% In Africa, and 98% in the United States, according to the Small Business Administration(SBA). The importance of the SME is not to be called into question, in that it makes a significant contribution to job creation and participation in development of a country's national economy [4].

SMEs are companies whose size, defined by the number of employees, balance sheet or turnover, do not exceed certain limits. The definitions of these boundaries differ from country to country. In Benin, the National SME / SMI Charter divide and define SMEs in three groups: the micro, small and medium enterprises category.

- Micro-enterprise is defined in Article 4 of the Charter as an enterprise with less than five (5) employees or annual turnover of five or fewer (5) millions of FCFA;
- Article 5 defines small enterprise as an enterprise with between five (5) and forty-nine (49) employees or an annual pre-tax turnover of five (5) and one hundred and fifty (150) million FCFA;
- Medium-sized enterprises are defined in Article 6. They are companies with a workforce of between fifty (50) and ninety-nine (99) employees or annual turnover excluding taxes between one hundred and fifty (150) million and two billion FCFA.

SMEs play a very important economic and social role, both because of their importance in the economic fabric and by the creation of jobs. Not only are they engines of growth and job creation at the local level, but they are also increasingly contributing to addressing priority challenges, particularly

with respect to sustainable development and the delivery of public services.

The development of SMEs offers many job opportunities. This can help lower the unemployment rate and cope with the demographic challenges of growing populations. In addition, the development of the SME sector can help to increase competition and productivity and thus boost growth in overall income and per capita income. This development will also stimulate structural transformation, as a healthy SME sector is associated with innovation and technological upgrading.

This process, on the other hand, contributes to regional and local development as well as to social cohesion as it helps to reduce inequalities, as rising incomes of a wider range of the population should create a greater demand for better governance. All of these positive developments should help create better economic and political opportunities for transforming discouraging demographic projections that potentially increase poverty and instability into a force for change positive [5] .

III. Literature review

A.Evolution and definition of E-commerce

Several authors have thus defined e-commerce and in order to assimilate electronic commerce in a clear and relevant way, it is useful to study the definitions developed by the authors. For many enterprises, e-commerce refers to the use of the Internet to strengthen distribution channels within markets and sell goods and services to consumers[6]. Although this definition refers to Internet commerce, e-commerce is a much broader and more meaningful term, inasmuch as, according to Malcom Frank. (V.P. Marketing within the Cambridge Technology Partners), cited in[6], e-commerce is the electronic exchange of information, payments, goods and services, and is characterized by the creation and maintenance of e-business relationships. According to (Newton (1998), p.260, cited in [7]), e-commerce is defined as the electronic use of information and communication technologies by an enterprise to conduct business with business partners, regardless of the use or non-use of the exchange of computer-sponsored data and the Internet.

There are therefore several types of e-commerce definitions. According to the narrowest definition, "an electronic business exchange involves a purchase, consumption and / or payment made through a network." The broadest definition accepts that "electronic commerce is any activity that uses some form of electronic communication in the inventory, exchange, promotion, distribution, or payment of goods or services."

With the spread of the Internet, favored on one hand by the proliferation of microcomputers and on the other by the appearance of navigation tools on the world wide web (an interconnection of computer networks that cover the entire planet), e-commerce is experiencing unprecedented growth, disrupting the old habits of national and international trade, favoring new professions, new modes of organization, new consumer behavior, new products, and so on.

According to Schneider (2011), the development of e-commerce is divided into two stages: first wave and second wave. "First wave" of e-commerce was adopted by large enterprises in USA with easy access to capitals, primarily from external sources. Evans and Wurster (1999) refer to

e-commerce in this early stage as a “landgrab”. Immediately, the whole new marketplace was created and companies who had enough resources and willingness could “grab from the land”. These large companies understood at first the possibilities that e-commerce can offer and started exploring and developing them.

Since most companies were dependant on external investors, achieving the profit was relatively rare. The pressure to the smaller companies was far more intensive, and many of them suffered losses. The technology was simple in the beginning, inexpensive and internet connection slow, the websites were mainly English based, e-mails were used unstructured and the integration of e-commerce with other processes were not efficient [8].

B. Benefits of E-commerce adoption by SMEs

Benin SMEs that establish a presence on the Internet and who are starting to participate in e-commerce, either with other companies or with consumers, benefit from several advantages. E-commerce has reduced many of the costs associated with customer communications, and allows enterprises to do business anywhere, anytime; it helped Beninese SMEs that approach the world market. E-commerce enables Beninese SMEs to engage in electronic commerce, establish a close relationship with their customers, improve the quality of service to customers, and enable SMEs to customize their products and services.

On the other hand, the use of information technologies and communications in general and e-commerce, in particular by Benin SMEs, strongly contributes to their productivity and profitability. Electronic commerce does not only refer to the sale of products on the Internet. Recently, between 80% and 90% of the benefits attributed to the electronic commerce of Beninese SMEs result from inter-company transactions and savings achieved by enhancing the productivity of internal administrative procedures [9].

In addition, e-commerce also aims to increase the effectiveness of traditional business relationships and processes, especially recruitment, procurement, administration, marketing/customer support (commonly known as overhead), through innovative applications, technologies and procedures. By leveraging information technology and network-centric e-commerce applications, organizations can reduce costs, increase profits, and increase customer satisfaction. It allows considering customer loyalty policies through a high value-added service offering and facilitates transactions by avoiding the buyer to move. It also gives the opportunity to reduce product audiences by eliminating the margin usually left to the intermediaries.

C. Barriers for E-Commerce Adoption

The adoption of e-commerce by SMEs is not so easy and feasible, spared from any obstacle, but on the contrary, there are several barriers that could prevent the adoption of e-commerce. Beninese SMEs face generic obstacles, such as trust and transaction security, and face challenges in the areas of management skills, technological capabilities, productivity and competitiveness to adopt e-commerce. The problem of the security of online transactions still stirs up big questions. The security and confidentiality of business information is not the major obstacle to e-commerce applications such as data

exchange, or the conquest and development of new markets; but they partly explain the low level of online transactions with deferred payment, and certainly also partly the low level of online transactions of SMEs in Benin. The formation of the e-commerce workforce also remains a barrier in the adoption of e-commerce in Benin.

While significant differences do exist in the awareness of e-commerce within companies, there is still a common trend that companies are increasingly evaluating the role of applications in improving productivity and expansion of the market. Despite the large number of SMEs in Benin, taking responsibility for e-commerce seems tricky. Some companies have charged the development of e-commerce, those who were responsible for IT; some others have confided this responsibility to marketing. Executives trained in basic e-commerce are therefore very little in Benin.

On the other hand, we have concerns about the lack of skills and human resources in SMEs. The lack of skills in the technical fields concerned as well as in the field of human resources configuration is a problem that does not only affect SMEs in Benin. The problem of lack of internal skills and reluctance to seek outside help is, however, more specific to SMEs. The insufficiency of internal resources is explained by the lack of people competent to use electronic commerce in an efficient manner, being given that within the SME, profit margins are often limited and reduced.

To all this is added the problem related to the minimal awareness of the interlocutors, which can be explained by the difficulty of communication that the SME experiences with its business partners or customers because of their low conviction or lack of connection to the Internet.

Companies that adopt this mode are experiencing psychological resistance in some of its customers because e-commerce is not yet widely used in all regions of the country, there is also the Low internet penetration in the country which make things difficult. Even though Internet is available, the continued use in SMEs is hampered by lack of electricity especially in rural areas. Further, the slow speed of Internet does not motivate or promote e-commerce adoption as well. There is also absence of a reliable and cheap parcel delivery logistics service.

Besides, the change in regulations sometimes with each government also represents a barrier, since some regulations which have been taken are neglected by the new government. Therefore we face lack of an appropriate legal environment to apply e-commerce. In addition, the lack of awareness of e-commerce benefits, leads to the lack of popularity for online sales.

IV/ Research Methodology

The main objective of this work is to investigate the impact of e-commerce adoption on SMEs in Benin. To fulfill the objective and achieve the goal, a framework for e-commerce adoption benefits and barriers in SMEs was used and a questionnaire was designed to collect the required information.

A. Conceptual Framework for E-commerce Adoption Barriers in SMEs

E-commerce adoption is related to the level of ICT acquisition or adoption; therefore, investigation should be done with regarding to the challenges that SMEs are facing in ICT adoption in Benin. The available researches reveal

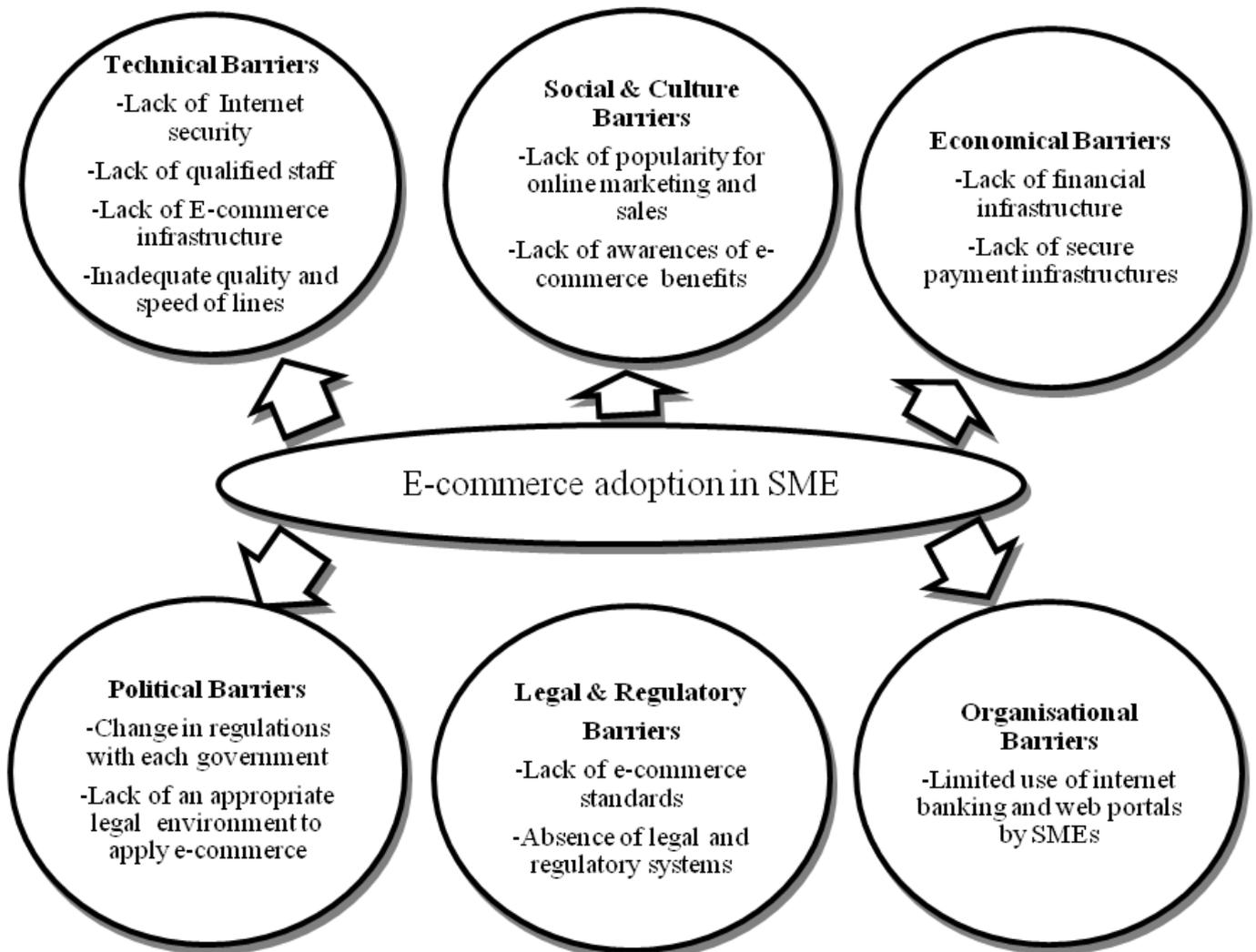
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significant challenges dealing with ICT and e-commerce adoption in SMEs, the literature review in that matter reveal that SMEs in Benin are dealing with infrastructure, trust, internet and electricity challenges.

Despite the fact that the e-commerce adoption offers a number of benefits to SMEs, they also face many barriers in

its adoption, which is categorized into 6 groups as show in the conceptual framework in figure below.

Barriers to E-commerce in Benin SMEs



B. Investigation

1. Questionnaire design

Structured questionnaire was used for data collection and it consists of 24 questions. The questionnaire was designed to investigate about

2. Questionnaire distribution

We target few SMEs in Benin that the questionnaire has been sent to. Questionnaires were distributed via email; and personally (two copies for each enterprise). To assure the participants quick and correct response; the questionnaire copies were sent directly to the owners and/or managers. The total numbers of received questionnaire were ten, but only six answers to the questionnaire.

the use of e-commerce in SMEs, the benefits resulting from the adoption of e-commerce and the barriers which SMEs faced in the process of adoption

e-commerce is slowly taking off in the commercial environment. In fact, the six companies that answered the questionnaires gave a positive answer to the question regarding the adoption of e-commerce in their businesses. It has also been noted that SMEs in Benin adopt e-commerce only for sales. The table below summarizes the companies studied; their sector of activity, their size, the number of agents in the e-commerce department and the sector in which they use e-commerce.

V/ Results and Discussions

Following the research and investigation of some SMEs in Benin, it has been noted that

Table (2): SMEs Studied

Enterprise Name	Specifics	Size	E-commerce Adoption: Yes/No	Area: Buy or Sale	Employee Number
Erevan Benin	Super Market	30	Yes	Sale	5
Luciole Sarl	Service delivery	5	Yes	Sale	2
Benin telecoms	Sale and production of ICT	300	Yes	Sale	25
Alo mobile	Electronic store	100	Yes	Sale	6
Micro-land	Home appliance	100	Yes	Sale	5
New Look	Dressing store	10	Yes	Sale	4

In addition, the level of education of the majority of staff recruited in this field is the high school degree, with a percentage of 100% for the six participants. On the other hand, the percentage of agents holding bachelor's degree is 66.7% and 16.7% for master degree.

There is also a problem of competence in the sense that only 50% of companies recruit ICT specialists per year to the e-commerce

department, this means that the agents working in this field are not specialists of the NICTs. So, we have tried to find out whether companies organize orientation courses for agents who do not specialize in NICTs. As an answer, we have 50% yes and 50% no. It has therefore been deduced that maintenance and competence remain a major problem in Beninese SMEs in their adoption of e-commerce.

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The proficiency of the technological tools being a key element in e-commerce adoption, investigations have also been made in this direction. The results showed 50% excellent, 16.7%, very good, 16.7% good and 16.7% fairly

good. Although efforts have been noted in this area, there is still work to be done.

We also researched tools used by businesses in adopting e-commerce. The result is summarized in the table below (Table 3).

Table (3): Tools used by SMEs

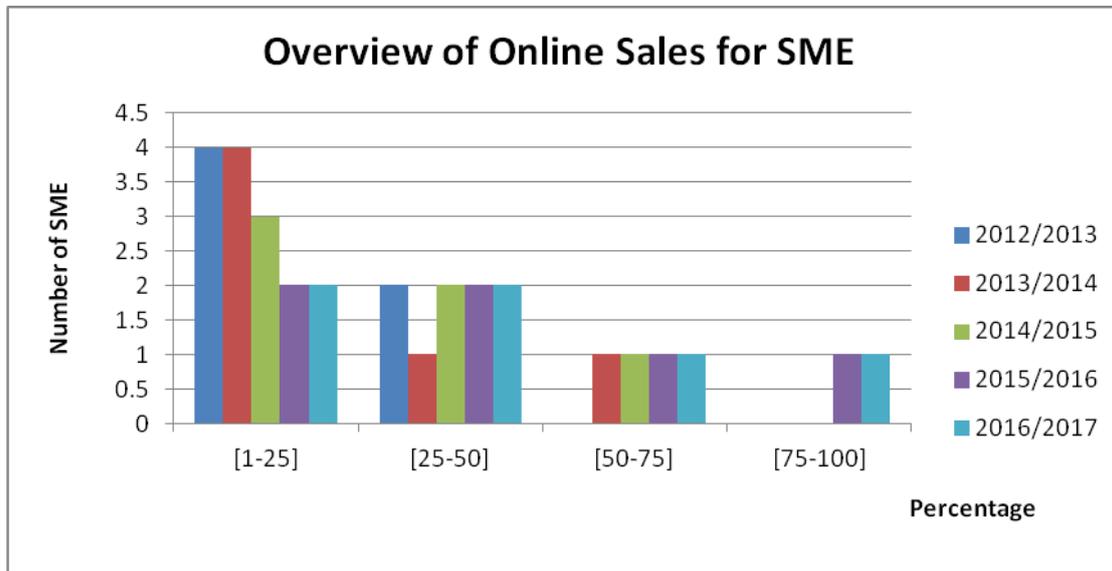
Computer(Desk)	Laptop	Notebook	Phone
5(83.3%)	6(100%)	5(83.3%)	6(100%)

Besides, we focus our study on online sales made by SMEs. Here, we have been interested in online sales of SMEs over a period of 5 years to evaluate

the evolution of their sales percentages over the years. The result is shown in the graph below.

Table (4): Number of SME (for online sales from 2012 to 2017)

Years \ Percentage	2012-2013	2013-2014	2014-2015	2015-2016	2016-2017
[1-25]	4	4	3	2	2
[25-50]	2	1	2	2	2
[50-75]	0	1	1	1	1
[75-100]	0	0	0	1	1



This graph summarizes the online sales of 6 SME from 2012 to 2017. The sales are expressed in

percentage ranged as the following: [1%-25%]; [25%-50%]; [50%-75%]; [75%-100%].

* 2012-2013: the period 2012-2013 marks the beginning of online commerce in Benin, which justifies the choice concerns this period. Today, a few companies operate in this sector, among which we selected six (6) for this study.

In the period 2012-2013, out of the 6 SMEs we chose, 4 were able to make the first online sale corresponding to a percentage between 1 and 25%. With regard to sales between 25 and 50%, we have two. As the graph shows, none of the SME could sell more than half of its products. However, the results indicate that there is a sustainable evolution in the sector. This can be partly explained by an increase in the number of social network subscribers, especially Facebook. This performance can be explained by a vast advertising program set up by the Micro-land structure through mass media (TV, Radio, print media, social networks). In summary, we can conclude from the analysis of the 6 SMEs that the online sales sector in Benin shows a significant evolution as the years go by.

VI –Conclusion

E-commerce has the potential to greatly improve how an enterprise operates internally and how it serves its customers. E-commerce is much more than a tool for improving cost-quality ratios in SMEs services. This research investigated on the impact of e-commerce adoption on Beninese SMEs. Based on the research literature and the results of the investigation, a number of conclusions were drawn.

The results showed that e-commerce is still in the primary stage in Benin. The majority of SMEs do not yet identify the possibility of selling online; and the few who are interested, are not yet make a high turnover with online sales. Also, they widely adopted most common e-commerce technologies (e-mail and internet) as an additional marketing tools to expose the company's products and service

* 2013-2015: we record an SME having sold more than 50% of its products online, which shows that it has slight increase of online sales. IT is Benin Telecoms Infrastructure operating in the sale and production of NICTs. This can be explained by the nature of customers who also evolve in the NICTs, i.e. having more access to commercial platforms compared to other ordinary customers.

2015-2017: During this period, the online sales of a company have evolved significantly, passing for the first time in Benin the 75% mark. This is Micro-land operating in the home appliance.

information rather than as an e-commerce platform to enable transactions. However, the adoption of e-commerce applications as online payment system, orders online is relatively low. It is therefore observed that efforts must be made to help and encourage Beninese SMEs to speed up the adoption of electronic commerce, particularly the more advanced applications.

Also, the implementation of e-commerce is hindered by some factors as: lack of Internet security and limited use of internet banking web portals by SMEs. So the critical issues that need to take the highest level of priority in e-commerce implantation process are security and privacy. In addition, awareness of e-commerce needs to be addressed to raise and promote e-commerce benefits and advantages.

VII -Limitation of Study

It should be noted that this study has several limitations. The data for the study were collected from various SMEs in different sectors, and it is not possible to make sector specific conclusions. Also, due to the fact that e-commerce is still on primary level in Benin, it was difficult to access to data, so this is a quantitative study and further qualitative research is required to gain a better understanding of the key issues of e-commerce adoption in SMEs.

REFERENCES

1. Fongang, D., PME en Afrique: essai d'une définition commune. 2014.
2. <http://www.marche-public.fr/Marches-publics/Definitions/Entrees/PME.htm> 2018.
3. Thong, J.Y. and C.-S. Yap, CEO characteristics, organizational characteristics and information technology adoption in small businesses. *Omega*, 1995. 23(4): p. 429-442.
4. Gélinas, F., L'adoption de l'approvisionnement électronique par les PME québécoises. 2005, Université du Québec à Trois-Rivières.
5. report-on-SMEs in europe. 2011.
6. Fruhling, A.L. and L.A. Digman, The impact of electronic commerce on business-level strategies. *Journal of Electronic Commerce Research*, 2000. 1(1): p. 13.
7. Eastin, M.S., Diffusion of e-commerce: an analysis of the adoption of four e-commerce activities. *Telematics and informatics*, 2002. 19(3): p. 251-267.
8. Evans, P. and T.S. Wurster, Getting real about virtual commerce. *Harvard Business Review*, 1999. 77: p. 84-98.
9. MCTIC, C.d.c.d., The digital economy is an unprecedented opportunity for youth employment. 2016.