

Factors Influencing the adoption of e-commerce by Small and Medium-Sized Enterprises (SMEs) in Algeria: a qualitative study

Hassen Houache¹, Noor Hayani Binti Abd Rahima², Mohamed Jalaldeen Mohamed Razi³, Asadullah Shah⁴

^{1,2,4}Dept. of Information Systems, International Islamic University Malaysia, Kuala Lumpur, Malaysia

³Dept. of Commerce & Finance Management, University of Kelaniya, Kelaniya, Sri Lanka

houache.hassen@gmail.com, noorhayani@iium.edu.my, razim@kln.ac.lk, asadullah@iium.edu.my

Abstract— Small and Medium sized Enterprises (SMEs) are regarded as the engine of the growth of the world economy. They had recently experienced rapid growth and improved their business activities in terms of customers' number and revenue expansion when they began to embrace e-commerce and started using it in their business. However, although there is a growing interest in e-commerce, its use is still insufficient in Algeria. Therefore, this study aimed to identify the factors that influence the adoption of e-commerce by SMEs in Algeria. This study adopts a qualitative methodology which involves in-depth, structured interviews to identify the factors that affect SMEs for the adoption of e-commerce in Algeria. The result of research found the main factors hindering the adoption of e-commerce by SMEs in Algeria are the e-payment methods, non-readiness of banks, lack of legal protection and lack in awareness of the benefits of e-commerce, as well as fear of risks. However, some other elements are less significant to influence the adoption of e-commerce. These research findings will give an addition in terms of bringing and giving a chance to the SMEs' leaders and the Algerian economic officials and a clear view of e-commerce practices. This can help them to design a strategy to remove barriers tactfully to its advantage.

Keywords— e-commerce, Small and Medium sized Enterprises, adoption factor, Algeria.

I. INTRODUCCION

The Internet explosion coincided with the new millennium. Since then, its uses have gone out from simple applications such as browsing and searching to more developed ones in all life sectors and facilities such as commercial transactions, financial transfers and so on. In a short period of time, it was able to integrate societies and change many of their life aspects and values. With the help of the Internet, time and space have been compressed. It has allowed organizations to expand beyond regional borders [1]. The last few years have seen a rise in the volume of electronic commerce around the world as a result of the spreading use of information and communication technologies (ICT) [2]. Compared to traditional business, the Internet and e-commerce have provided consumers with more benefits and different choices of both products and services [1]. In spite of their size, traditional companies must change their mind about selling products and services through the Internet since it has become a need rather than a luxury. Entrepreneur managers, who are not ready to use e-commerce, put themselves at risk of competition and maintenance of their position in the marketplace [3]. In the contemporary world, access to the Internet is a must for

companies of all sizes because that is where customers are at present [4].

The Algerian society has opened up to the world of new information and communication technologies. In addition, access to the Internet has become easier than ever [5]. However, most of those using the Internet for advertising and presenting their goods and services are utilizing email communication to get in touch with their suppliers and customers; but only a few of them offer products and services through the network. Therefore, e-commerce has not started yet in Algeria. Thus, Algerian SMEs remain far from the global development in this area [6]. So far Algeria has not been able to keep pace with its neighbours Morocco and Tunisia in e-commerce [7]. Therefore, the actual e-commerce has not started yet in Algeria and remains just a dream is waited to be achieved [8]. Therefore, this paper attempts to bridge this gap. In other words, the attention of this research is to study the factors that influence the adoption of electronic commerce by SMEs in Algeria.

II. SMEs IN ALGERIA

Many image de-noising techniques were developed to SMEs do not have a standardised definition. They have been identified differently by different individuals and

organisations so that a small and medium enterprise in a country may be perceived differently in another country. According to the Algerian ministry of commerce, an SMEs is defined regardless of its legal status in terms of providing either good or service or even both [9] [10], by determining specific characteristics, as presented in Table1.

TABLE I
DEFINITION OF SMEs IN ALGERIA

Enterprises	Employee	Turnover (dinars)	Total assets(dinars)
Micro	1-9	< 20 million	< 10 million
Small	10-49	< 200 million	< 100 million
Medium	50-250	200 million- 2 billion	100 - 500 million

Source: Algeria's Ministry of Industry, Small and Medium Enterprise and Investment Promotion, MISMEP (2012a)

III. E-COMMERCE IN ALGERIA

A. Introduction

In the last few decades, the information and communication technologies (ICT) developed so significantly that the world business has changed dramatically. Among these, e-commerce, created by the Internet which has been one of the most important scientific achievements since the Industrial Revolution, has had a profound impact on human life [10]. It has significantly increased the productivity and efficiency of economic processes, reduces economic operating costs and has made possible many things that were impossible earlier. It has also affected people's lifestyles and social aspects and thus changed their global outlook and methodology [10].

Nowadays, e-commerce is no longer an alternative but an imperative. At the microeconomic level of retail, wholesale and labour market transactions, it has an enormous impact on the performance and productivity of companies and the economic welfare of consumers and workers. It lowers costs and increases the choices available to consumers and firms [11].

Algeria is the tenth largest country in the world concerning the land area with a population of about 35 million people. The country's oil and gas reserves have made it one of Africa's wealthiest reserves. The Algerian economy depends heavily on the oil and natural gas sectors. Other sectors are less developed and suffer from neglect. However, the government began an economic reform programme in 1994, with a focus on macroeconomic stability and structural reform, which have achieved some success in some sectors. In Algeria's situation, giving more attention to the non-oil sectors, such as e-commerce, is very important because such areas exert a significant influence on economic growth and have long-term benefits [10].

B. Analysis of e-commerce situation

1) The project e-Algeria 2013

The government recently revealed a new strategic plan for developing ICTs in the country. The initiative is supposed to accelerate their use, including the government's application of technology to increase access to government information. The e-Algeria strategy is based on several goals: boosting the use of ICTs in public administration and businesses, developing incentive mechanisms and measures to give citizens access to ICT equipment and networks, stimulating the development of the digital economy, strengthening high and very high speed telecommunication infrastructure, developing human capacities, strengthening research, development and innovation, updating the national legal framework, recognizing the value of international cooperation, and the establishment of mechanisms for monitoring and electronic evaluation [10] [12] [13] [14]. However, by mid-2013, the e-Algeria 2013 project has not achieved any progress, it has failed 100% [13]. The e-Algeria program is not a failure in itself, but it is its implementation that is a failure [14]. By 2015, 30% of the project had not been completed yet [12]. One of the causes for that failure is the lack of implementation of the axes of this program. The "your family" project which is an integral part of the plan of Algeria Electronic, did not meet all the conditions necessary for its success as the banks were not ready, and Algeria Telecom did not provide the Internet connection. In addition, computer manufacturers were not available as well as citizens were not prepared for technologies, not to mention the lack of visibility and explicit content of the project [14] [7].

2) Telecommunications Infrastructure

As a result of significant infrastructure investments during Algeria's boom years, the country has a relatively well-developed telecommunications infrastructure, including a fibre optic national backbone network and one of Africa's first FTTH (Fiber to the Home) deployments [10]. In October 2009, AT announced plans to invest US\$6 billion in fixed-line and mobile operations over the next five years as part of a US\$150 billion government program to upgrade the country's infrastructure. Priorities were the improvement of network coverage and capacity and the rollout of high-speed Internet services [15]. In other words, 63% of Algeria's residents are using third generation (3G). That is equivalent to 93% of the 15 to 65 age group.

The graph shows the evolution of Internet subscribers in Algeria from 2014 and the 3rd semester of 2017. both of the Asymmetric digital subscriber lines (ADSL) and fixed fourth-generation (4G), made a slight progress during fourth years, from 1.518 million to 2.274 million subscribers and from 0.08 million to 0.921 million subscribers respectively. Naturally, the use of the fixed Internet had the same trend of development because it is a sum of 4G and ADSL. However,

the use of the 4G was slightly higher than the use of the ADSL during this period.

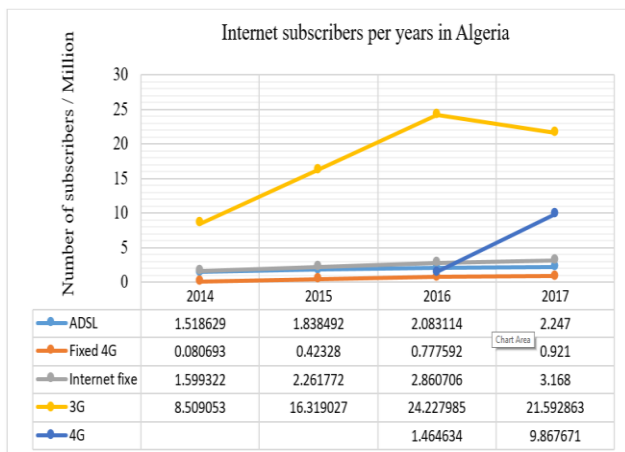


Fig 1: Evolution of Internet subscribers in Algeria

Source: Control Authority for Posts and Telecommunications
<http://www.arpt.dz/ar/obs/etude/?c=internet>

In contrast, the third-generation (3G) increased significantly during the first three years, while the fourth-generation (4G) was not yet available. However, in 2016, the 4G appeared, as it was adopted very quickly, it reached 9.867 million subscribers in one year whereas the 3G decreased significantly from 24.228 million to 21.592 million subscribers in 2017. That means the users have rapidly preferred the use of the 4G Internet rather than the 3G

3) Government regulations

Constraints related to the legislative aspect is the absence of the electronic transactions law and government regulations related to e-commerce [13] (Amina B., 2013). The Algerian legislator has tried to develop a legal framework regulating e-commerce transactions. However, it is not directly related to this trade, but it has issued a set of legislations, which are related to it [16]. Despite the laws and regulations available to protect consumer benefits, they could not solve all the problems related to consumer benefits that arise from e-commerce. Issuing detailed consumer protection laws or regulations regarding e-commerce is essential in protecting consumer rights in e-commerce. Therefore, there is a lack of a comprehensive regulatory framework that supports and controls the adoption of e-commerce in the country and that clearly defines and protects the rights of all parties [10]. However, the minister delegate in charge of the digital economy and the modernisation of financial systems "Mutasim Boudiaf"; confirmed that the e-commerce project was in its final preparations and it would be presented to the government

by the end of 2016 [12]. On Tuesday, 6 February 2018, the Minister of Post, Information and Communication Technologies and Digitalization, "Iman Houda Faroun", presented a draft bill on electronic commerce in an open session of the National Council of the People chaired by "Saeed Buhajah", the President of the Council and it was approved [17][18].

4) Payment systems

There are several forms of payment in Algeria: the postal check account CCP (Compte Chèque Postal), money order, payment by bank check, cash on delivery, and pay by PayPal in Euros. Each payment method has its specificities. For example, the amount by CCP money order is made at all Algerian post offices and addressed to the person concerned. According to an interview conducted by the Eco¹ with "Nawel Benkritli", general manager of the "SATIM" (Société d'Automatisation des Transactions Interbancaires et de Monétique) (Automation Company of Interbank Transactions and Monetics), all online sales sites active in the Algerian market use alternative means of electronic payment. SATIM, a subsidiary of 8 Banks; BADR (Banque de l'Agriculture et du Développement Rural-Spa), BDL (Banque de Développement Local), BEA (Banque Extérieure d'Algérie), BNA (Banque Nationale d'Algérie), CPA (Crédit Populaire d'Algérie), CNEP (Caisse Nationale d'Epargne et de Prévoyance Banque), CNMA (Caisse Nationale de Mutualité Agricole) and ELBARAKA, is in charge of the management of electronic banking in Algeria. In collaboration with the banking community, it is working on the regulatory aspects so that web-buyers can proceed to the online payment of their purchases by CIB card before the end of 2013 [19]. However, the minister delegate in charge of the digital economy and the modernization of financial systems "Mutasim Boudiaf", confirmed that the electronic payment service was officially launched in late 2016, creating all the conditions for banks readiness for this service [12]. However, this card system was very limited and concerned only a small category of bank customers [14], which was around 2.84% of Algeria's residents [20].

5) Logistics systems

The logistics system in Algeria suffers from inefficiency and unreliability as a result of reduced transportation infrastructure, fragmented distribution systems, limited use of technology in the distribution and logistics sector, regulatory restrictions, and local protectionism [2]. The Algerian postal system is inefficient and lacks staff with the skills required for an e-commerce environment. At the same time, the costs imposed by foreign competitors are excessively high for ordinary online shoppers or enterprises.

¹ Journal Eco, N° 61 from 1st to 15th of March 2013.

The logistics sector thus still needs a longer time to develop to meet the requirements of e-commerce [2].

1. The current implementation of e-commerce in Algeria

Most Algerian joint venture companies use the Internet only to advertise and present their business. This can be noted on the websites of some Algerian institutions. It was found that these institutions use the Internet to display their critical data, such as their address, the nature of their activities, and contact numbers. Only a few of them offer products and services through the network [21]. However, some websites have appeared, which were very popular with Algerian visitors, and even among economic institutions, that were using these websites to advertise their products especially the new ones. In contrast, e-commerce was used by some other websites such as Ouedkniss, iPads, Air Algerian, web Dialna, Algeria markets, Shehab, made in Algeria, Bait Algeria [5] [6]. Moreover, there are several payment methods to shop online: the CCP money order, check payment, cash on delivery (most used), payment by bank transfer, payment by eBay.dz, payment by CIB card and payment by PayPal [5]. However, Bank payments are not easy to use, they are not available to everyone, as well as people do not trust them. Therefore, as e-commerce has not expanded vigorously in Algeria it remained very modest. Thus, Algerian commercial companies remain a far cry from the global developments in this area [22].

IV. RESEARCH METHODOLOGY

A. Definition

The qualitative method demonstrates a unique approach to scholarly inquiry. It employs different philosophical expectations, strategies of investigation and techniques of data collection, analysis, and interpretation. It relies on text and image data, in various steps in data analysis, and draw on diverse strategies of inquiry [23]. The data is generated in the field at the location where the participants are having a problem or problem under study. They do not bring individuals to the laboratory, nor do they typically send out instruments for individuals to complete. Hence, examining documents, observing behaviour, or interviewing participants are the critical aspects of this research. In the entire qualitative research process, the researcher focuses on the participants' understanding of the problem or the issue, not the sense that the researchers bring to the research or that writers express in the literature. The key idea is to learn about the problem or issue from participants and to address the study to obtain that information. This includes reporting multiple perspectives, identifying the many factors involved in the situation, and drawing the overall picture that appears in general [24].

B. Data collection

This study relied on a qualitative methodology, where a series of structured interviews were used to collect data from various small and medium enterprises. The method conducted was a snowball method. That means SMEs were randomly chosen because simple random sampling is an unbiased approach to obtaining responses from a large group [25]. However, the selected sample should be using information technology (IT) in its management. The interview was conducted mostly among managers / Chief Executive Officers (CEOs).

C. Procedural steps

The thematic analysis approach is as outlined by Braun and Clarke 2006 [26]. In a nutshell, these steps are the repeated reading of the data to get familiar with them, generating the initial codes and ideas, the conversion of the codes into themes, reviewing the items, defining and naming the identified items and producing the report of the themes [27]. After the interview, all respondents' statements were written. Then, the symbols and initial ideas were created. When the codes were converted to themes, the identified items (factors) were identified through a focused and in-depth reading of the respondents' responses. Each factor was determined, while the number of respondents who said it, is a crucial one. Finally, the percentage of each factor was extracted as well as the thematic analysis which was used to report the experiences, perspectives and meanings of SMEs. While examining how events, realities, implications, and backgrounds come about, the analysis is based on the answers obtained from the interviews. The purpose of the interview is to identify factors influencing SMEs to adopt electronic commerce in Algeria. Based on the groupings and classifications that were identified, the factors were then mapped into eight categories namely environmental factors, individual factors, organizational factors, management factors, technological factors, implementation factors, trust factors, cultural and social factor.

D. Instrumentation and the field interview

The tool for this preliminary qualitative study is an open-ended question. Experts have validated these questions. Finally, after validation and subsequent corrections, the following interview questions were developed:

1. What are the obstacles and fears that have made you not to adopt e-commerce in your business? In term of organizational factors, management factors, technological factors, individual factors, implementation factors, trust & security factors, environmental factors, culture and social factors and other factors.

2. What are the most critical factors in your opinion that prevented most of the Algerian enterprises from the adoption of e-commerce?

The preliminary field interview cycle was performed from August 12th to 23rd, 2017. The interview has been conducted with seven participants. This number is justified by Creswell 2017 [23] to be appropriate for a qualitative study. The profile of the participants based on the professional ground are presented in Table 2 below

TABLE II
PARTICIPANTS' DETAILS

Participant ID	Background Information
P1	The executive director of "Geoxal" enterprise; sale and installation equipment electronic security and computer networks.
P2	Manager of the enterprise "Groupe Geounane"; selling IT equipment and networks.
P3	The executive director of the "Sarl alternate solar Energy" enterprise; selling solar energy equipment.
P4	Manager of "Sindibad" enterprise; national and international online training.
P5	Manager of "Eurl M.Mal" enterprise; importation of floor tiles and bathroom accessories
P6	Manager of "BMX Solutions" enterprise internet services and creating websites.
P7	Manager of "VCS Informatique" private school; training for business leaders and development of foreign languages skills.

The profile of the participants based on the professional ground are; the executive director of "Geoxal" enterprise; sale and installation of electronic security equipment and computer networks; which has a four-year experience and ten employees working in the company. The next person is the manager of the "Groupe Geounane" enterprise; selling IT and networks equipment which has a five-year experience and seven employees working in the company. The third-person is the executive director of the "Sarl alternate solar Energy" enterprise; selling solar energy equipment; which has a five years' experience and ten employees working in the company. The fourth person is the manager of "Sindibad" enterprise national and international online training which

has a twelve-year experience and eight employees working in the company. The fifth person is the manager of the "Eurl M.Mal" enterprise; importation of floor tile and bathroom accessories; which has a twenty five year experience and ten employees working in the company. The seventh person is the manager of the "BMX Solutions" enterprise; Internet services and website creation; which has a three-year experience, three employees working in the company. The last one is the manager of "VCS Informatique" private school; training for business leaders and development of foreign languages skills; which has a fifteen-year experience and twenty teachers and employees working in the school.

All the enterprises were visited for interviews with managers at their offices. The conversation lasted with them for 21 minutes, 42 minutes, 26 minutes, 48 minutes, 14 minutes, 18 minutes and 17 minutes, respectively. Arabic, mixed with some French words, was the language used in all the interviews. All the respondents have interacted with the topic because it was actual and the dream of most Algerian companies. The conversations with all respondents were audio recorded and notes were taken during the interviews. After the meeting, the data were transcribed and coded for analysis.

V. DATA ANALYSIS AND INTERPRETATION

In qualitative research, the effect of data analysis is to collect data into a small number of subjects, such as between five and seven themes [23]. In the present study, the organization and preparation of data for analysis involves copying interviews by typing all the recorded audio, sorting and classifying the data in different types according to the information sources of. This provided a general understanding of the data and provided an opportunity to reflect on its general meaning. It contains the overall ideas of participants, the tone of their ideas, the impression of the depth of the information, its credibility and its use. After that, all data was encrypted. This is the process of organising data by placing brackets (or text segments) and writing a word representing a class in the margins [28]. It includes the transfer of textual data collected during the collection of data, the division of clauses (or paragraphs) into categories, the designation of those categories by a term, often a term based on the actual language of the participant. The encoding process generates a description of the settings or attributes for analysis. After the coding, a discussion and analysis of these topics were held. This seems as the main findings of the study. The results were then interpreted.

A. Interpretation of the findings

1) Environmental factor

Most of the respondents (P1, P2, P3, P4, P6, P7) focused and deeply spoke about the environmental factor for e-commerce adoption. They consider the them very critical in

the adoption of e-commerce. This includes government readiness, market forces e-readiness, consumer readiness, competitive pressure, trading partners' readiness and social influence.

All respondents know that the executive decree of e-commerce appeared in 2017, but the regulatory order as well as crypto money appeared in 2018. However, the respondent (P2) said Algeria strictly prohibited dealing in digital currency in buying or selling. Besides, four (P2, P3, P4, P6) respondents said some laws are still vague and needed more details and clarity, especially those concerning taxes and the tax rate with remittances. Even more serious is the lack of consumer protection and the guarantee of his rights in the event of a conflict. Moreover, all of the respondents said the economy and banking system is not prepared in terms of currency conversion. Banks have not yet reached the ranks of international banks in currency conversion. While the respondent (P2) said, more importantly, the mentality of the Algerian system has not changed towards capitalism. Therefore, the financial, economic and commercial market has a centralised control, and this is one of the most critical obstacles to electronic commerce. In addition, all the respondents agreed with this statement. They announced that the state does not have transparency in the currency conversion and there are no legal currency exchange shops (black market spread). Consequently, the system does not encourage or stimulate the adoption of e-commerce.

As for market forces readiness, there are those (P2, P3, P4) who said that evasion from electronic commerce is due to the lack of financial transactions transparency resulting in massive taxes. However, (P2, P4) said Algeria is moving towards e-commerce against its will and not voluntarily, and it is only a matter of time. Others said Algeria is late in e-commerce, but it has to move towards this area sooner or later, and this is the right time for companies to prepare themselves for this field. They also said enterprises do not put their money in banks, and they are dealing in buying and selling with cash, due to the fear of taxes, which reach amounts as far as 36% of the profit. The respondent P4 said, therefore, there is \$80 billion in non-bank transactions because of tax evasion.

As for consumer readiness, some of the respondents (P1, P2, P3, P4, P6) said it is low at present. Moreover, the Algerian market does not only force them to use e-commerce but trading partners' and social influence as well.

2) Individual factors

All of the respondents believed and declared that education is an essential factor for the adoption of e-commerce. Besides, they said most of the workers today have skills in IT such as manipulating a personal computer (PC) & using the Internet, Excel and Word It has become easy for them to learn and adapt with new software in the

field. So, there have no problems in these areas. Moreover, there are training courses to raise the level of workers. As the old generation of workers who are not well educated, they are not able to be employed in the places where information technology is used. The respondent (P2) said there is no formal education on e-commerce in Algerian Universities, and there are no workshops or seminars in this field. He also said that the national exhibition of e-commerce and electronic payment had been postponed for the third time.

All respondents have agreed that most modern enterprises are using advanced technology in their daily dealings and their businesses and that their staff are well skilled in IT. Meanwhile, most of the managers have Information & Communication Technology (ICT) experience and skills, such as dealing with employees, dealing wisely with work problems and mastering modern technology means and so on. However, one respondent (P7) said there are significant challenges in finding the efficient workers who master skills of dealing with customers and the basics of modern marketing, while the respondent (P1) said it is better to employ university graduates and train them in areas they are weak in; because their salary is less than that of the experienced ones and their continuity and stability are guaranteed in the company.

All of the respondents' replies indicate that awareness of the benefits of e-commerce is the most critical factor because if they understand the advantages that will get benefit from them. They will change entirely towards it, whether they are institutions or consumers while the respondent (P4) said if the government had recognised the advantages of e-commerce and e-payment, they would have adopted it for a long time. Among its most important features are a decrease of traffic congestion in roads, pollution, fuel consumption, extension market reach, an increase of revenue and most importantly not only a better financial transactions control and reduction of the illegal transaction funds but also rising the state's economy and eliminating tax evasion. Enterprises will also benefit from the expanding of their customer segment and the reduction of their renting cost for large warehouses in public places, which is one of the most significant problems currently. As for the consumer, he is provided with comfort, saving time and effort as well as cost. Whereas respondents (P2) said if the manager is conscious of the benefits of e-commerce, he will be encouraged to make his utmost efforts to train his workers and purchase equipment. Therefore, awareness is the basis of everything.

3) Organizational factor

As for the organizational factor for adoption of e-commerce, which includes the scope of business operations, size of the organisation, business resource, the organization mission and enterprise resources. All of the respondents did

not focus on these factors well and believe they did not pose a significant obstacle for adoption of e-commerce because the respondents (P1, P2, P4, P5, P6, P7) said that their companies are structurally prepared. They have all departments, and each one has specific tasks. Whereas the respondent (P4) confirmed that the use of e-commerce in their trade is not necessary for large enterprises only but even to small-sized enterprises also, no matter its size of the organization because that is where benefits are. The respondents (P1, P7) noticed that the Algerian market is almost empty, that means there is no great competition in the market of the economy, therefore there, are many opportunities to make money.

4) Management factor

The management field includes human resources, commitment, governance and facilitating conditions. All respondents did not speak deeply about this topic. They pointed at the importance of human resources in institutions and that it has a significant role in the stability of the company and its continuity. Moreover, all of the respondents said there is a great challenge in finding efficient workers.

5) Technological factors

Respondents have different opinions regarding technological factors. The first respondent said the problem with the Internet had decreased significantly, primarily when the government provided the 3G, 4G (fourth generation of mobile network technology) and a specialized line on the last few years. However, the respondents (P2, P3, P4, P6, P7) said the Internet connection is sometimes tweak or cut. Besides, all of the respondents agreed on the abundance of computers, whether laptops or desktops. While most of the interviewees (P2, P3, P4, P6, P7) believe there is a lack of awareness whether on the perceived usefulness of using technology and perceived ease of use of modern technology. That is why they are far from e-commerce. The respondent (P4) added that most enterprises are entirely unaware of the contemporary electronic means (robot) used in the websites to answer users' inquiries and help them to purchase through the internet, which provides an excellent effort for companies. This offers the best service quality for consumers.

6) Implementation factor

The respondents focused and spoke extensively on the implementation factors for the adoption of e-commerce. They also considered implementation factors as very imperative for adopting e-commerce which includes payment systems, delivery systems, customer services, content quality, stability and cost of the platform.

The major obstacle for adopting e-commerce for all respondents was the payment systems. While the

respondents (P2, P4, P6) said that their organization is ready regarding workers and equipment and they tried to start electronic commerce. However, the other obstacle they faced was electronic payment. The respondents (P2, P3, P4) said the Algerian banking and post system are still not having an allocated department and experts who are trained in this field (e-commerce). Respondent (P2) said despite the permission of the minister of Post and technology to use the golden and banking cards CIB (Corporate & Institutional Banking) in e-commerce, unfortunately, it remained only a declaration. Besides, the bank workers lack training and courses and are not prepared for this. Also, there is no public institution that provides training for these workers in the trend of e-commerce. Whereas, 63% of the respondents said Algeria is moving towards e-commerce. In the meantime, the e-payment of water, electricity, telephone bills, ticketing for Air Algeria via the Internet has started. The removal of taxes will encourage the consumer to use e-payment and gradually enter the world of digitalisation. In addition, Algerians began to pay by CIB card in some shops through the electronic payment machine. They can also withdraw money from ATMs (Automated Teller Machine). Respondent (P1) added they expect that using e-commerce will take a long time because the customer uses cash to buy and sell transactions and does not use banks. Moreover, bank cards are still limited to use across national territory only. Therefore, the government must make a great effort to achieve actual e-commerce.

As for the delivery systems, the opinions were different. The respondents (P1, P6) said there is no doubt in the improved level of delivery system services and the emergence of many enterprises in this area, especially in the north and the centre of the Algeria. In the south, there is still some shortage. However, the respondent (P4) said there is a distribution problem due to difficulty in accessing the specified address, and that Google Maps is not updated with the new addresses and cannot reach some places easily.

As for the customer services, and content quality, the respondents (P1, P2, P4, P7) said yes, they are important factors that influence e-commerce adoption. Still, it belongs to the enterprises itself and its interest to improve their reputation for consumers.

The majority of respondents (P1, P2, P3, P4, P6, P7) are concerned about the stability platform which is based on the law issued. It states that all institutions that want to create an e-commerce website should host it at CERIST (Centre de Recherche sur l'Information Scientifique et Technique). The big issue is whether the institution can afford a vast number of websites and ensure all transactions and exchanges or not.

As for the cost of the platform, the respondent (P3) is the only one who knows how much it costs. He said that the

enormous problem is the high cost of the API (Application programming interface) platform which is the intermediate between the bank and the user as well as it is not easy for enterprises to afford such a massive cost, and that it should be free. The respondent (P4) agreed with the previous one that it should be free. Moreover, respondents (P2, P3, P6) said the government has not opened an API for all enterprises and also bank workers are not aware of the technique at all. They also said the annual cost of the bank card is among the obstacles, so some banks are now starting to reduce their price to 50%. Therefore, the cost is an essential factor for the adoption of e-commerce.

7) Trust factor

All the respondents agreed that trust was an essential aspect to adopt e-commerce, but Algerian people did not trust online buying as they are accustomed to traditional commerce. Respondent (P1) said one of the reasons for mistrust is that the image does not give the truth about the product at times. While respondent (P2) said something more serious; that Algerian people had lost confidence in the state's system. However, the respondent (P4) said that the Algerian people could adapt and change with all situations easily. So, the trust will build gradually.

8) Culture and social factors

The respondents (P2, P3, P4, P6) said that in the Algerian culture, people used to use liquidity when buying and doing conventional commerce, the other issues is the fear of risk in e-commerce, that discourages companies from adopting e-commerce. However, the respondent (P4) thinks it is comfortable for them to adopt e-commerce, especially when they are convinced of its merits and benefits since Algeria, now has high-speed internet, smartphone penetration and computer literacy which will help the citizens embrace e-commerce shortly. However, the respondent (P1) added that *"The community has great apprehension about dealing with banks"* the same respondent (P6) said *"The religious legitimacy of dealing with banks has a direct impact on SMEs use of e-commerce"*. The respondent (P4) said: *"The community has used the Internet for advertising, entertainment and news, not for sale and purchase"* as well as the respondents (P3, P8) who said consumers prefer the traditional market more than e-commerce. They do not purchase only for necessity.

9) Others questions

To summarize all the respondents' replies. It is clear that they strongly agree that the major obstacles for adoption of e-commerce in Algeria are; electronic payment methods, non-readiness of banks, lack of legal protection and lack of awareness about the benefits of e-commerce as well as fear of risk in e-commerce.

VI. Discussion and findings

This study shows that the e-payment methods, non-readiness of banks, lack of legal protection, lack of awareness about the e-commerce profits and fear of risk in e-commerce are highly significant factors for the adoption of e-commerce in Algeria. However, some other elements are less significant to influence its adoption. These are market forces eReadiness, state policy, communication processes, technology resources, human resources, enterprise financial resources, education, IT skills and expertise, delivery systems, trust in the state system, security issues, cost of platform and maintenance, hardware and software stability, consumer eReadiness, support industries eReadiness, perceived usefulness, perceived ease of use and high tax rate.

From the literature review on electronic commerce adoption in developing countries, the authors Kabanda and Brown 2015 [29]; Saif-Ur-Rehman and Alam 2016 [30]; Hoque and Boateng 2017 [31]; Ekanem and Abiade 2018 [32]; Ahmed and Apparatus 2018 [33] agree that awareness, human and technology resources, trust, legal and regulatory barriers, security, government support and IT infrastructure and e-payment system, are the considerable features, which have an impact on the adoption of e-commerce in developing countries. These findings are appropriate with the results of the study of e-commerce adoption factors in Algeria. However, this study found out that the respondents did not regard that technology resource, perceived ease of use, stability and cost of the platform, culture and perceived usefulness were high significant factors for the adoption of electronic commerce in Algeria. It may be due to the fact that respondents just hypothesised since all of them have not yet practiced e-commerce in their businesses. However, possibly after using e-commerce in their businesses, they would find it otherwise. On the other hand, the factors and degree of their impact on e-commerce adoption may change after the actual practice of e-commerce.

It is noticed that there is an agreement between the results of this study and some other ones. Among some examples, the environmental factors are significant in the adoption of e-commerce [31] [33]. Banks were not ready neither in terms of the banking system nor currency conversion [2] [34]. The awareness about the benefits of e-commerce and fear of risk in e-commerce are the most critical factor for the adoption of e-commerce [33]. Human resources have a significant role in the stability of enterprises [35]. There is a lack of awareness, whether on the perceived usefulness of using technology or perceived ease of use of modern technology [34]. The cost is an essential factor for the adoption of e-commerce [30]. Trust is also another vital factor in the adoption of e-commerce [32].

Some studies were carried out by Chaabna et al. [2], Chaabna & Wang [10] in 2014 and 2015, and Ben Sassi [12] in 2017 about e-commerce in Algeria. In fact, these studies were not inspired by a questionnaire or an interview with SMEs. They all agreed that the most critical factors for adopting e-commerce in Algeria are banking and payment systems, and legal infrastructure. Still, there are some differences in the degree of impact on the adoption of e-commerce for some factors such as logistics which is seen as very significant. However, currently, its importance may diminish because according to the declaration of some respondents, the logistics services in Algeria have improved, and new companies in this field have been established in recent years.

VII. CONCLUSION

Based on previous explanations, it is noted that the delay of SMEs in the adoption of e-commerce in Algeria is due to several highly significant factors which are the e-payment methods, non-readiness of banks, lack of legal protection and lack in awareness of the benefits of e-commerce, as well as fear of risks. However, some other elements are less significant to influence the adoption of e-commerce. They are market forces eReadiness, state policy, communication processes, technology resources, human resources, enterprise financial resources, education, IT skills and expertise, delivery systems, trust in the state system, security issues, cost of platform and maintenance, hardware and software stability, consumer eReadiness, support industries eReadiness and high tax rate (tax evasion). Therefore, the state must redouble efforts to keep pace with the development and achieve robust e-commerce in reality, thus to increase its economy and to be an alternative to petroleum. Besides, the new generation is accustomed to electronic means, smartphones, and all modern devices and this will be the majority of the people in the future. So, they will have a more e-commerce acceptance. The Algerian people have a potential for development while hesitating at the same time. However, when convinced of the feasibility, they may start immediately. Consequently, e-commerce will be deployed in Algeria soon. Therefore, institutions must prepare themselves for this field, which will be rich in future business

VIII. LIMITATIONS AND RECOMMENDATIONS

Among the most critical challenges of this study is the size of the sample itself is relatively small because the study was qualitative, and the size of the larger sample is preferred to conduct a thorough assessment of the concept of small and medium-sized enterprises in Algeria towards adopting e-commerce. Consequently, it is suggested that future research is carried out on a large sample size (quantitative research) that provides a higher response rate for more robust statistical analyses. Moreover, in future research, it is

proposed to study the e-commerce adoption factors in Algeria by applying the most widely used models of e-commerce adoption in developing countries, such as Technology Acceptance Model (TAM), IT adoption theories, Unified Theory of Acceptance and Use of Technology (UTAUT), Technology Organization Environment (TOE) or Perceived eReadiness Model (PERM). However, it is better to combine these models to provide a more comprehensive view and obtain an improved result.

REFERENCES

- [1] E. M. Agwu and P. J. Murray, "Empirical Study of Barriers to Electronic Commerce Uptake by SMEs in Developing Economies," *International Journal of Innovation in the Digital Economy*, vol. 6, no. 2, pp. 1–19, 2015.
- [2] S. Chaabna, H. Wang, and M. Lutf, "A National Perspective on the Factors Involved in the Lack of E-commerce in Algeria," *The Thirteenth Wuhan International Conference on E-Business*, vol. 5, pp. 259–266, 2014.
- [3] R. D. Hisrich and V. Ramadani, "E-commerce Challenges and Entrepreneurial Manager," *In Effective Entrepreneurial Management*, pp. 159–178, 2017.
- [4] W. Msitfa H., "The Legal System of Electronic Commerce in Algerian and Comparative Legislation (Unpublished doctoral dissertation)," University of Abdelhamid Ibn Badis Mostaganem, Algeria., 2017.
- [5] B. Rassim and M. Sonia, "Les freins au développement du commerce électronique Etude comparative entre l'Algérie et le Maroc (Unpublished master's thesis)," Université de Abderrahmane Mira de Bejaia, Algeria, 2017.
- [6] B. F. Zahra, L. T. A. Wassila, and M. Amine, "The Reality of E-Commerce Ethics in The Algerian Economic Institutions," *Revue Organisation & Travail*, vol. 6, N°1, pp. 155–171, 2017.
- [7] K. Khalifa, "E-commerce as a tool to activate trade in Algeria (Unpublished master's thesis)," University of Abdelhamid Ibn Badis Mostaganem, Algeria., 2018.
- [8] F. Falak C., "The reality and prospects of e-commerce in Algeria," University of Abdelhamid Ibn Badis Mostaganem, Algeria, 2018.
- [9] A. B. Bouazza, "Small and Medium Enterprises As an Effective Sector for Economic Development and Employment Creation in Algeria," *International Journal of Economics, Commerce and Management*, vol. III, no. 2, pp. 1–16, 2015.
- [10] S. Chaabna and H. Wang, "Analysis of the State of E-commerce in Algeria," *International Journal of Marketing Studies*, vol. 7, no. 2, pp. 44–58, 2015.
- [11] D. Heil and J. E. Prieger, "The Macroeconomic Impacts of E-Business on the Economy," *In Encyclopedia of e-business development and management in the global economy*, no. expected 2010, pp. 1–11, 2010.
- [12] Khaled Ben sasi, "The reality of E-commerce and Logistic in Algeria," *Journal of the performance of Algerian institutions*, vol. 12, no. 1938–2170, pp. 205–224, 2017.
- [13] A. ben Hamed, "EGovernment - Algeria's experience of transformation towards e-government (Unpublished master's thesis)," University of kasdi merbah Ouargla, Algeria., 2013.
- [14] B. Rym, "The perspectives of e-Banking on the strategy of E-Algeria 2013 (Unpublished doctoral dissertation)," University of Abou Belkaid, Tlemcen, Algeria, 2015.
- [15] P. Lange, "2010 Algeria - Telecoms, Mobile, Broadband and Forecasts," June 2010, 2010. [Online]. Available: <http://www.budde.com.au/Research/2010-Algeria-Telecoms-Mobile-Broadband-and-Forecasts.html>.
- [16] A. A. M. Musbah, "Adoption Factors in Business To Consumer (B2C) E-Commerce For SME in Sudan (Unpublished doctoral dissertation)," *International Islamic University Malaysia*, 2018.

- [17] Elkhabr, "E-commerce door opens in Algeria," 2018, February 20, 2018. [Online]. Available: <http://www.elkhabar.com/press/article/133912/>. [Accessed: 25-Nov-2018].
- [18] Radioalgerie, "Presentation of the electronic commerce bill in the National People's Assembly," 2018, February 6, 2018. [Online]. Available: <http://www.radioalgerie.dz/news/ar/article/20180206/133131.html>. [Accessed: 25-Nov-2018].
- [19] A. Makhloufi and M. Belattaf, "Le Commerce Electronique En Algerie : Vers De Nouvelles," 2013.
- [20] U. De Sidi and B. Abbés, "Un essai d'analyse sur l'utilisation de la carte électronique de retrait et de paiement interbancaire (CIB) en Algérie," no. December, pp. 19–42, 2016.
- [21] A. Fatima, "Factors Influencing Electronic Commerce Adoption in Malaysian Small and Medium Sized Enterprises (Smes) (Doctoral dissertation)," University of Malaya Kuala Lumpur, Malaysia, 2017.
- [22] F. Ajmal and N. Yasin, "Electronic Commerce adoption model for small & medium sized enterprises," *International Conference on Education and ...*, vol. 30, no. 2, pp. 12–16, 2012.
- [23] J. W. Creswell and J. D. Creswell, *Research design: Qualitative, quantitative, and mixed methods approaches*. Sage publications, 2017.
- [24] J. Sutton and Z. Austin, "Qualitative Research : Data Collection , Analysis , and Management," *The Canadian journal of hospital pharmacy*, vol. 68, no. 3, pp. 226–231, 2015.
- [25] M. Horton, "What are the disadvantages of using a simple random sample to approximate a larger population?," Jan 29, 2018, 2018. [Online]. Available: <https://www.investopedia.com/ask/answers/042815/what-are-disadvantages-using-simple-random-sample-approximate-larger-population.asp>. [Accessed: 31-Dec-2018].
- [26] V. Braun and V. Clarke, "Using thematic analysis in psychology," *Qualitative Research in Psychology*, vol. 3, no. 2, pp. 77–101, 2006.
- [27] W. Askarzai, "The effects of Virtual Management on employee behaviour in Small and Medium-sized Enterprises (Unpublished doctoral dissertation)," University of Western Sydney, Australia, 2014.
- [28] S. F. Rallis and G. B. Rossman, *The research journey: Introduction to inquiry*. Guilford Press., 2012.
- [29] S. K. Kabanda and I. Brown, "E-Commerce Enablers and Barriers in Tanzanian Small and Medium Enterprises," *Electronic Journal of Information Systems in Developing Countries*, vol. 67(1), no. March, pp. 1–24, 2015.
- [30] Saif-Ur-Rehman and R. Alam, "A Study of Barriers to E-Commerce Adoption among SMEs in Malaysia," *Gulf-Pacific Journal of Business Administration*, vol. 1, no. February, pp. 2–5, 2016.
- [31] R. Hoque and R. Boateng, "Adoption of B2B e-Commerce in Developing Countries : Evidence from Ready Made Garment (RMG) Industry in Bangladesh," *Pacific Asia Journal of the Association for Information Systems*, vol. 9, no. 1, pp. 55–74, 2017.
- [32] I. Ekanem and G. E. Abiade, "Factors Influencing the Use of E-Commerce by Small Enterprises in Nigeria," *International Journal of ICT Research in Africa and the Middle East*, vol. 7, no. 1, pp. 37–53, 2018.
- [33] A. L. Ahmed and S. E. Apparatus, "Influence Factors of Adoption E-commerce in Iraqi SMEs," *Journal of Al-Qadisiyah for Computer Science and Mathematics*, vol. 10, no. 2, pp. 17–26, 2018.
- [34] K. Ben Saci, "The reality of E-commerce and Logistic in Algeria," *Journal of the performance of Algerian institutions*, vol. 12, no. 1938–2170, pp. 208–226, 2017.
- [35] M. H. Rabie, "The Adoption of e-commerce in SMEs: An Empirical Investigation in Egypt," University of Starling, 2013.