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ASSESSING THE REALITY OF THE DIGITAL ECONOMY IN ALGERIA

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ABSTRACT:
The world today witnesses continuous changes that would not have occurred without the advancements in the telecommunications and information technology sector, particularly through the internet. This represents a qualitative leap in the concept of modern economy, leading to the emergence of the digital economy. Consequently, all countries have rushed to keep pace with technological advancements to achieve a qualitative leap in digital economy standards on a global level. Today, Algeria faces significant challenges in establishing a foundation capable of keeping up with the times. This study aims to understand the reality of the digital economy in Algeria, analyze and highlight its main features, including aspects such as e-commerce, ebanking, e-government, as well as the challenges it faces.

Keywords: Digital economy, e-commerce, e-banking, e-government.

INTRODUCTION:

The world is currently experiencing a wave of wide-ranging transformations, leading to the emergence of new ideas reflecting these developments. Among these ideas is economic globalization, where wired and wireless communication technologies have witnessed significant advancements, providing the speed required by the economy as a time-saving factor for making and implementing various economic decisions.

The internet, in particular, is one of the most dynamic technologies connecting different countries worldwide. All these advancements characterize what is known as the digital economy, which primarily relies on digital information and the proper use of modern technology, incorporating all that is new and beneficial to the economy (Zeydan Youssef, Bash Mohammed, 2022, p.2). This study aims to understand this economy and its key applications, focusing on e-commerce, e-banking, and e-government as its main components. Based on the above, the main problem statement can be formulated as follows: What is the reality and challenges of the digital economy in Algeria?

To answer the problem statement, we have divided the intervention topic into two axes:
First: The conceptual framework of the digital economy and its main aspects.

Second: Challenges of the digital economy in Algeria.

1- Concept of the Digital Economy:
The significant and rapid development of information and communication technology has led to the emergence of what is known as the digital economy and digital products. Many organizations have entered the virtual world because of its significant role in activating them, reducing costs, and providing new opportunities for the spread of goods and services and gaining a competitive advantage.

a) The digital economy refers to the continuous interaction, integration, and coordination between information and communication technology, on one hand, and the national, sectoral, and international economies, on the other hand, achieving transparency and immediacy for all economic indicators supporting all economic, commercial, and financial decisions in the country during a certain period (Farid Najjar, Digital Economy and Internet: Restructuring Investment, Stock Exchanges, and Electronic Banks, 2007, p.25).

b) It is an economy based on information and communication technology and the degree of connection to the global information network (the Internet) and the availability of fast information methods, mobile phones, and digital information exchange services, which have become the foundations governing all aspects of life (Jaafar Hassan Jasim, 2017, p.34).

c) The digital economy is: "That type of economy that operates primarily on information and relies on the use of information and communication technology in most of its steps, which have eliminated all temporal and spatial barriers, making the world a small village where information, goods, services, and capital flow freely from and to any point in the world at any time" (Hussein Al-Alami, 2013, p.4).

• Based on the above definitions, it can be said that the digital economy is an economy whose fundamental pillars are information, through which temporal and spatial barriers can be eliminated, making the entire world a small village.

2- The Difference between the Old Economy and the Digital Economy:
The old economy differs from the digital economy in several aspects. We have summarized and grouped these differences in the following table:

Table 1: The Difference between the Old Economy and the Digital Economy

Feature	Digital Economy	Traditional Economy
Dynamism	Dynamic	Stable
Scope	Global	National
Structure	Networked	Territorial
Production Focus	Flexible production	Mass production
Foundation	Innovation, knowledge, and entrepreneurship	Labor and capital
Technology	Digital technology (digitization/computing)	Mechanical technology (mechanization)
Collaboration	Based on partnerships and alliances	Based on individuality
Transactions	Uses electronic documents	Uses traditional markets
Learning	Based on lifelong learning	Based on acquired skills and university degrees

Source: *A. Haddada Samia, "Electronic Marketing and Mechanisms for Consumer Protection as an Approach to Building the Digital Economy in Algeria," Third National Symposium on Consumer and Digital Economy: The Necessity of Transition and Challenges of Protection, April 23rd and 24th, 2018, Abdelhafid Boualouf University Center, Mila. Article available on: 02*

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Feature	Digital Economy	Traditional Economy

02-2023, p. 04, at the link: http://dspace.centre-univ-mila.dz/jspui/bitstream/123456789/212/1/20.pdf

3- Transition to Digitization: (Mohammed Raouf Hamed, 2001, p.42).

- Digital Transformation of Government: The transition from industrial economy to digital economy entails transformations in governance towards digital governance characterized by interconnectivity, unlike the previous government where information flowed vertically only (not horizontally).
- Digital Design of Things: Computer-aided design provides digital precision, three-dimensional reviews, and ensures the suitability of each design component, such as building an electronic model of an aircraft and mechanical simulation (required repairs).
- Digital Transformation of Education: Education rapidly moves away from the formal roles of education and becomes a continuous life-long process. Here, we mean the integration of technology with educational and life activities, not just the provision or delay of computers.
- Digital Transformation of Healthcare: Healthcare is considered one of the driving forces of the new economy through expanding the use of digital and interconnectivity (hospitals, pharmacies, users...).

4- Characteristics of the Digital Economy

The characteristics of the digital economy can be summarized as follows: (Farid Najjar, Investment in Electronic Systems, 2004, pp. 12-17).

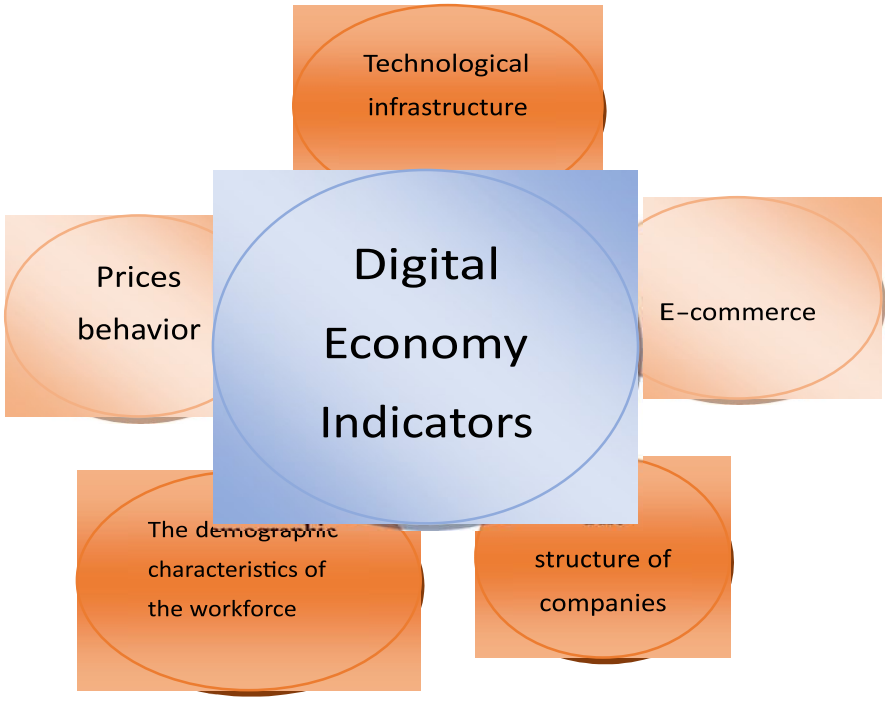
a) Ease of Access to Resources: The success and growth of the digital economy depend on individuals' and institutions' ability to participate in various information networks and internet sites. Active participation in these networks and in the digital economy requires infrastructure availability, such as electricity and telephone networks, low cost and fees for these services, availability of machines, equipment, skills, education, training, financial resources, and the use of electronic and plastic money, such as credit and debit cards.

b) Competition and Market Structure in the Digital Economy: The digital economy includes information technology, communication, e-commerce, e-delivery services, software, and information, which vary according to the size of economic transactions, specialization, resources, economic sectors, and components of gross domestic product. Some economists believe that the components of the digital economy vary depending on the scope of the economy and the impact of information networks, standards, public goods, transaction costs, and deals. It is known that technologies change rapidly and affect business systems in terms of alternative resources, inputs, operations, operations, outputs, products, uses, and distribution.

c) Future of the Overall Economy in the Digital Economy: Information technology and communication play a fundamental role in increasing economic growth rates, capital investments, domestic and international e-commerce, and the internet affects business transaction methods and work styles.

d) The Digital Economy Provides Information for Decision-Making: Information can be controlled by effectively using it and employing it to serve economic decisions and policies. Information management skills help in the successful long-term investment decision-making process, and the digital economy provides information by learning how to identify information needs and then selecting appropriate sources of basic and important information, i.e., managing outbound and inbound information more efficiently.

Figure 1: Digital Economy Indicators



Source: Zeydan Youssef, Bash Mohammed, "The Digital Economy in Algeria: Means and Challenges," International Virtual Forum: Big Data and Digital Economy as a Mechanism for Achieving Economic Takeoff in Developing Countries "Opportunities, Challenges, and Prospects," University of Chahid Hamma Lakhdar, Faculty of Economic and Commercial Sciences and Management, June 18, 2022, p. 03.

5- Indicators of Digital Economy

Electronic commerce is a new term in the world of economics that emerged with the spread of the Internet in the early 1990s. Today, the Internet is no longer just a means of obtaining information and communication; it has become one of the profitable tools for many institutions and commercial companies, which has reinforced the emergence of a new concept of trade, namely e-commerce via the Internet, along with the emergence of other terms such as electronic banking, electronic government, and others.

A. E-Commerce: (Malika Arfis, 2018/2019, pp. 24-25).

E-commerce is defined as the execution of economic activities such as buying, selling, and exchanging goods, services, and information between economic entities through electronic means, using information and communication technology, media, and electronic methods by creating effective links between the parties involved. Ecommerce includes the following:

- Online purchasing: The execution of activities responsible for purchasing and providing goods and services using information and communication technology, media, and electronic methods.
- Online selling: The display of products and goods by producers and suppliers on the Internet or by using electronic media.
- Electronic marketing and advertising: Displaying and promoting goods and services and introducing them on the Internet, either on the company's electronic platform or on other advertising and promotional websites, as well as through search engine methods and using electronic messages or SMS on mobile communication devices.
- Electronic commercial mediation: Involves a specific entity acting as an intermediary between the parties to the contract or facilitating the flow of information between the parties using electronic media.
- Electronic banking: Electronic banking is defined as the completion of banking transactions, account management using electronic banking technology through electronic communication channels.

- Electronic accounting: Execution of accounting tasks and accounting education fields through computers and various components of digital computing and information network applications.
- Electronic supervision: It involves using electronic media to carry out monitoring procedures within the institution and utilizing information and communication technology to enhance the effectiveness of supervision, reinforcing the principle of disclosure.

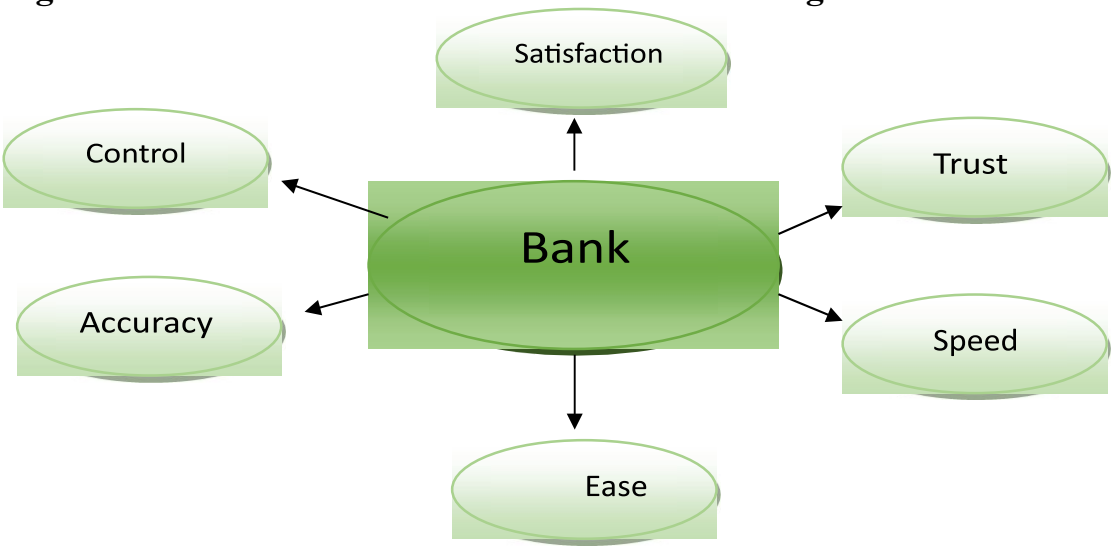
B. Electronic Banking

Banking is defined as: "All activities and operations conducted, executed, or promoted by electronic means such as telephones, computers, ATMs, the Internet, digital television, etc., by banks or institutions engaged in electronic financial transactions." (Nazim Muhammad Nouri Al-Shammari, 2008, p. 28).

There is another definition of electronic banking as: "Different financial transactions between financial institutions, individuals, companies, and government entities using modern methods derived from information and communication technologies and continuous innovations have led to achieving this."

(Mazrav Ashour, 2008, p. 03). Through the two previous definitions, we conclude that electronic banking represents various banking services using information and communication technology, using various electronic tools such as ATMs, mobile phones, personal computers, etc., enabling customers to benefit from them anytime, anywhere, quickly, at lower costs, and without hassle.

Figure 2: Reflection of Electronic Work on Banking Performance



Source: Nabil Dzun Jasim: "Mubarik Example, Obstacles to the Implementation of

Electronic Banking in the Government Banking Sector", Institute of Management, Baghdad, 2088/2009, p. 06.

C-Government:

It demonstrates the level of advancement of the state in implementing e-government, its shift towards the digital economy. The most important areas of e-government represent the electronic public services provided by the government to citizens either free of charge or at a nominal cost, which helps improve various public services and accelerates them such as healthcare, education, culture, among others. This reflects on the economy in terms of expenditures. The work of e-government is not limited to providing services to individuals only but also includes various types of electronic interactions from government to government, from government to citizens, from government to institutions, and the reverse direction from citizens to the government. (Dr. Abdul Salam Breeza, 2018, p. 06).

It is a modern approach to formulating the administrative, organizational, servicerelated, data, and informational procedures within public institutions of the state, requiring changes in existing laws and the introduction of new laws and policies. Egovernment is the application of information and communication technology to achieve efficiency, transparency, information accuracy, and information exchanges within the government, between the government and its subordinate institutions, between citizens and public institutions, and non-governmental organizations, enhancing citizens' ability to access and utilize information. Its most important applications include:

- Payment of traffic fines, penalties, postal bills, and electricity bills.
- Issuance of administrative documents.
- Issuance of cards and passports, etc.
- Facilitating payment operations and procurement in the public sector.
- Providing electronic forms and conducting public opinion polls online.
- Job vacancy information.
- Providing statistical data.
- Supporting information and communication technology for voluntary work, security centers, and courts. (Dr. Zidan Yousef, Dr. Bash Mohammed, 2022, p.10).

Second: The Reality and Challenges of the Digital Economy in Algeria 1- The Reality of E-commerce in Algeria

E-commerce in Algeria differs from that in the world in terms of its components and characteristics, but it differs in terms of the degree of dissemination and level of development. Some institutions have initiated the development of electronic

payment networks, but the inability to control and manage them has caused some to cease their services because they rely on imported solutions and systems that are not compatible with the characteristics of the Algerian market.

However, the increasing demand for these services, such as payment and settlement with financial transaction cards, encouraged some institutions to continue their progress, such as prepaid cards for telephone services and ATM cards for postal and transportation services, and bank cards for withdrawal.

However, these financial cards are not sufficient for international transactions, but they are a starting point for e-commerce in our country. Regarding the relationship of economic institutions with the Internet, there is a modest number of them online, where their number reached about 6,000 institutions in 2000 to about 10,000 institutions in 2001, reaching approximately 18,000 institutions at the beginning of 2004 and until 2010/2022, the number of Algerian institutions on the Internet reached about 30,000, which is equivalent to 2.5% of the number of Algerian institutions registered in the National Commercial Registry Center.

Most of them are in the Algerian Institutions Directory online, where this directory introduces them and assists in accessing them. In addition to the low percentage of Algerian institutions connected to the Internet, most of them do not go beyond the second level of e-commerce application, meaning they only have information pages on the network, while only a few of them have full websites.

This is due to the high cost of website services, estimated annually at about 60 million cents, and Algerian e-transactions do not reach completion in all stages of the deal due to legal gaps such as recognizing electronic documents, electronic signatures, and technical obstacles, the most important of which is the absence of electronic payment means.

Thus, e-commerce has not really taken off in Algeria, and thus Algerian economic institutions remain far from global developments in this field. Moreover, it is impossible to talk about actual e-commerce without a modern and advanced banking sector, which imposes greater dynamism on the Algerian banking system in providing services, especially e-marketing services, which allow for neighborly relationships and easy access to new customers. (Dr. Zidan Yousef, Dr. Bash Mohammed, 2022, p.09).

The Reality of Electronic Banking in Algeria

What distinguishes the banking service offered by the Algerian banking system is its traditional nature, which does not align with what is happening in advanced

countries. Therefore, there is a need to consider modernizing the banking service in Algeria by making it contemporary. Among the most important elements of updating the banking service is modernizing various types of payment methods and making them electronic payment methods to facilitate the adoption of electronic banking in Algeria. Recently, the Algerian banking system has introduced the use of ATM cards and programmed several projects. A company was established among the eight public Algerian banks: the Agricultural Bank, the National Savings and Social Security Fund, the Algerian External Bank, the Algerian Popular Credit, the Local Development Bank, the Algerian Baraka Bank, the National Fund for Agricultural Cooperation, and the National Algerian Bank. This company was established in 1995 with a capital of 267 million Algerian dinars. The purpose of this company was to update the payment methods for the Algerian banking system, develop and manage cash transactions between banks, improve banking services, increase cash flow, and install Automatic Teller Machines (ATMs) in banks. This company is also responsible for manufacturing bank cards for withdrawal according to international standards and printing the secret code. This service is established through a contract between the bank and SATIM Company, which defines the obligations of both parties regarding delivery procedures, in addition to linking ATMs with SATIM through an X25-DZPAC communication network, allowing withdrawals, whether internal or portable. Furthermore, the transactions are recorded by the clearinghouse to settle accounts between banks. SATIM also works on detecting counterfeit cards and all manipulations. (Abdelkrim Kandouz, 2007, pp. 10-11).

Given the importance of what electronic banking has offered to the economy and Algeria's attempts to revive its economy from the dismal recession state and accelerate and stimulate its movement, Algeria saw the necessity to develop its banking system and keep up with what is new. Thus, it initiated several reforms to prepare it for this event. However, it has not succeeded so far, as each reform brought forth ideas, most of which did not see the light due to procrastination in implementing and respecting the laws and because of corruption and mismanagement.

The Reality of E-Government in Algeria

As part of the e-government project, the Algerian government established a committee consisting of representatives from ministries and experts in information and communication technologies, called the "Electronic Committee," to begin implementing this project. In this context, much work has been accomplished in some sectors such as postal services, information and communication technology, social security, education, and others. Some of these operations include:

- Establishing an internal government network (R.I.G), which is a modern communication system used in advanced countries.
- Implementing the IDARA program at the level of the Human Resources Department in the public service, as well as installing an information network linking administrations with central and local structures related to public service jobs.
- Automating a lot of information related to government departments on websites such as the Presidential website, the State Council website, the Tax Administration website, the Ministry of Postal Services and Information Technology website, the Ministry of Foreign Affairs website, the Ministry of Higher Education and Scientific Research website, the Ministry of Labor and Social Security website, Parliamentary Offices' websites, the Ministry of Housing and Urban Planning website, the Ministry of Small and Medium-Sized Enterprises website, and the Ministry of Interior and Local Authorities website, as well as university and higher education institution websites, among others. Major operations in some sectors include: A- For the Ministry of Interior and Local Authorities: The ministry aimed to modernize administration and transition from traditional paper-based management to electronic management to bring administration closer to citizens by digitizing civil status records. Consequently, it accomplished:
- Issuing biometric passports;
- Issuing biometric identification cards;
- Establishing a system for managing and monitoring legal files. B- For the Ministry of Postal Services and Information Technology:
- ATM cash withdrawals using postal and bank magnetic cards (the latest being the gold card), despite the difficulties associated with their use, as ATMs are often out of service;
- The ability to request checkbooks online and view balances, as well as access to information on financial transactions related to postal accounts for a certain period;
- Money transfers via Western Union. C- For the Ministry of National Education:
- An online registration system for all competitions and exams such as the Baccalaureate and the Certificate of Basic Education;
- The establishment of a project by the Ipad Institute (Digital School) through a special program on the Internet aimed initially at students preparing for the Baccalaureate and the Certificate of Basic Education. This virtual institution was named "Your Education". D- For the Ministry of Labor and Social Security: Initiating the use of the electronic card, called the "Recovery Card" by social security beneficiaries, for purchasing medications from pharmacies contracted with the Social Security Service. However, what hampers the Social Security

> Service is the significant bureaucracy that still characterizes the services provided to citizens. After receiving the second prescription within two months, the beneficiary is required to pay for the medication and follow the traditional procedure for reimbursement. (Sadek Dzrifi, 2018, pp. 9-10).

Algeria ranked 13th in the Arab world and 139th globally out of a total of 184 countries according to the United Nations' Global E-Government Index for the year 2012. This index measures the readiness and speed of e-government and the extent to which countries use information to serve and interact with citizens. Algeria's rank is very low compared to financially less fortunate countries than Algeria, such as Tunisia. Tunisia ranked seventh in the Arab world and 66th globally, while Libya ranked 11th in the Arab world and 114th globally, and Morocco ranked 12th in the Arab world and 126th globally. All of these countries are ahead of Algeria in the Maghreb region. (Zaidan Youssef, Bash Mohammed, 2022, p. 11).

Table 2: E-Government Development Index (EGDI) for Some Arab Countries, During the Period 2005-2018

2018		2016		2014		2012		2010		2008		2005		
Rank	**Ind**	**Rank**	**Ind**	**Rank**	**Ind**	**Rank**	**Ind**	**Rank**	**Ind**	**Rank**	**Ind**	**Rank**	**ind**	
130	0.42	150	0.29	136	0.31	132	0.36	131	0.31	121	0.35	123	0.3242	**Algeria**
80	0.62	72	0.56	75	0.53	103	0.48	66	0.48	124	0.34	121	0.33	**Tunisia**
110	0.52	85	0.51	82	0.50	120	0.42	126	0.32	140	0.29	138	0.27	**Morocco**
114	0.48	108	0.45	80	0.50	107	0.46	86	0.45	79	0.47	99	0.37	**Egypt**
21	0.82	29	0.75	32	0.71	28	0.73	49	0.53	32	0.63	42	0.57	**Emirates**
26	0.81	24	0.77	18	0.80	36	0.69	13	0.73	42	0.57	53	0.528	**Bahrain**
180	0.23	161	0.25	154	0.25	165	0.26	154	0.25	161	0.21	150	0.23	**Sudan**

0.5491	0.4922	0.4712	0.4882	0.4406	0.4514	0.4267	**International indicator**

Source: *Munira Bouras, "The Transition towards E-Government in Algeria between Implementation and Desire for Development," Doctoral Thesis, University of El-Hadj Lakhdar Batna 1, p. 229.*

Through tracking the development of the United Nations E-Government Development Index (EGDI) for Algeria as shown in the table, it becomes apparent that despite the efforts exerted, whether before the establishment of the Algerian e-Government strategy, during its implementation period, or even after the decision to extend the implementation deadlines and develop a work plan for the period 2015-2019 by the Ministry of Post and Information and Communication Technologies, the index values decline from one report to another, reaching their lowest value in the 2016 report with an average of 2999.0, where Algeria's global ranking dropped from 136th to 150th place. This reflects the Algerian state's failure to provide the requirements for establishing e-Government over an entire decade. It is also noticeable that this index has not remained stable, fluctuating between increase and decrease from one report to another, registering its best value in the 2018 report with an average of 4227.0, thereby raising Algeria's ranking to 130th instead of the 150th position recorded in the 2016 report, a value that exceeded the average e-Government Development Index.

Challenges Facing the Digital Economy in Algeria:

There are numerous challenges hindering the implementation of digital knowledge in Algeria, including: (Hadj Kaid Kourine, Mohamed Taifour Amina, 2014, pp. 12-13).

- Absence of educational and administrative operations and activities capable of efficiently and effectively dealing with information technology systems in general, digital communication technologies, and self-educational service technologies in particular.
- Lack of interest in information technology, knowledge economy, information systems, software engineering, network programs, e-commerce, e-business, and artificial intelligence.
- Absence of databases specific to educational spaces of various types and their administrators as well. For example, knowledge databases are the most important for e-learning. These databases exist on software sites where indexed tutorials are displayed, along with guidance for inquiries, instructions, and step-by-step guidance for specific tasks, effectively presenting information where users can choose a keyword or phrase to search the database, and in return, they can select a word from an alphabetical list.

- Lack of online support, which is a model for e-learning, operating as a pedestrian to knowledge bases, in the form of forums, discussion rooms, and bulletin boards on the network, real-time email or correspondence support.
- Absence of innovative, integrated, and constantly updated network sites. Educational network sites require the touch of experts in information technology, marketing, and management, in addition to services from professional teachers and trainers, thus the educational network site is the culmination of these combined skills, supplemented by the skills and experiences of psychologists, sociologists, and educators.
- Widespread illiteracy in Algeria, where it is considered one of the countries with a high illiteracy rate, and thus these individuals do not understand the meaning of engaging in digital knowledge, posing a barrier to its spread.
- Proliferation of individuals, even among educated and learned groups, who are not proficient in computer usage. Many university graduates hold advanced degrees but do not excel in using computer technology.
- High cost of obtaining a personal computer, as the spread of digital knowledge requires acquiring a personal computer to achieve freedom and comfort in elearning and browsing websites without temporal or financial constraints, despite its wide availability and diversity.
- High cost of internet usage, as there is a lack of competition because in Algeria, almost one company nearly monopolizes the internet, which is Algeria Telecom, preventing a decrease in internet connection costs in addition to the material conditions experienced by young people of unemployment and poverty, making the internet their least concern.
- Lack of interest from economic institutions in the country and their unawareness of how digital knowledge can open wider economic horizons for them. Many economic institutions are connected to the internet but have inactive websites containing general information about the institution not dedicated to etransactions.
- Backwardness of the Algerian banking system in terms of modern means and payment technologies, in addition to the fear of venturing into virtual commerce that may incur significant losses that are difficult for a country like Algeria to cover.
- Absence of clear and explicit laws governing e-transactions.
- Bureaucracy, administrative and financial corruption.
- Weak infrastructure: Algeria lacks a strong electronic infrastructure.
- Modest information culture, electronic interaction, and weak information society.
- Low level of trust in government and transactions.
- Lack of specialized skills in the field of technology and communications.

- Absence of communication and information usage standards.
- Lack of political will.

CONCLUSION: The most important conclusion reached through this research paper is that the digital economy, which relies on modern communication means, especially the internet, deals with digital information and is characterized by many features that distinguish it from the traditional economy. Its direct responsiveness is more efficient and effective, necessitating Algeria to keep pace with developments by disseminating electronic culture among Algerian society members and encouraging internet use and its generalization in all sectors - economic, political, social, and cultural - through developing e-commerce and modernizing the banking system, as well as adopting the idea of e-Government. However, there are many obstacles hindering the achievement of this goal, making it necessary to overcome these problems and exploit all available potentials and resources to advance its digital economy.

REFERENCES:

2. Dr. Zidan Youssef, Dr. Bash Mohamed, "Digital Economy in Algeria Between Means and Challenges," International Virtual Conference: Big Data and Digital Economy as Mechanisms for Achieving Economic Takeoff in Developing Countries "Opportunities, Challenges, and Prospects," University of El-Hadj Lakhdar - Batna 1, Faculty of Economic and Commercial Sciences and Management, June 18, 2022, p. 2.
3. Fareed Najjar, "Digital Economy: Internet and Restructuring of Investment, Stock Exchanges, and Electronic Banks," 2007, p. 25.
4. Jafar Hassan Jasim, "Introduction to the Digital Economy," Dar Al-Bidayah, Jordan, 2017, p. 34.
5. Hussain Al-Alami, "The Role of Investment in Information and Communication Technologies in Achieving Sustainable Development - A Comparative Study between Malaysia, Tunisia, and Algeria," (Master's Thesis, Faculty of Economic Sciences and Management, University of Ferhat Abbas - Setif 1), 2013, p. 4.
6. A. Haddad Samia, "E-Marketing and Mechanisms for Consumer Protection as an Introduction to Building the Digital Economy in Algeria," Third National Conference on Consumer and Digital Economy: Necessity of Transition and Protection Challenges, April 23-24, 2018, Abdelhafid Bou Al-Souf University Center, Mila, Article available on: February 2, 2023, p. 4, at the link: http://dspace.centre-univ-mila.dz/jspui/bitstream/123456789/212/1/20.pdf
7. Muhammad Raouf Hamed, "Digital Economy, Notes Series (Presentations) by Donna Tapscott," Academy Library, Cairo, 2001, p. 42.
8. Fareed Najjar, "Investment in Electronic Systems and the Digital Economy," 2004, pp. 12-17.

9. Malika Arfis, "The Impact of the Digital Economy on Economic Growth in Some Arab Countries from 2007 to 2017," Academic Master's Thesis, Mohamed Boudiaf University - M'sila, pp. 24-25.
10. Nazem Mohammed Nouri Al-Shammari, Abdel Fattah Zuhair Al-Abdallat, "Electronic Banking (Tools, Applications, and Expansion Barriers)," First Edition, Wael Publishing and Distribution House, Jordan, 2008, p. 28.
11. Mazriff Ashour, Mouamouri Soureya, "Modernization of the Banking Sector and the Reality of Electronic Banking Services in Algeria," International Scientific Conference on the Reform of the Algerian Banking System in Light of Current Developments, December 11-12, 2008, p. 3.
12. Nabil Zanoun Jasim: Example Marhoun Mubarak, "Barriers to Implementing Electronic Banking in the Public Banking Sector," Institute of Administration, Baghdad, 2088/2009, p. 6.
13. Abdel Salam Briza, "Indicators of Digital Economy in Algeria," Third National Conference on Consumer and Digital Economy: Necessity of Transition and Protection Challenges, April 23-24, 2018, Abdelhafid Bou Al-Souf University Center, Mila, Article available on: February 2, 2023, p. 6, at the link: http://dspace.centre-univ-mila.dz/jspui/bitstream/123456789/216/1/50.pdf
14. Abdel Karim Qandouz, Boumedine Nourin, "Electronic Banking in Banking Institutions as an Introduction to Building the Monetary Economy in Algeria," Second International Scientific Conference: Knowledge in the Era of the Digital Economy, Hassiba Ben Bouali University, Chlef, Algeria, November 27-28, 2007, pp. 10-11.
15. Al-Sadiq Dharifi, "Challenges of Transitioning to E-Government in Algeria," International Conference on the Legal System of the Electronic Public Facility, Mohamed El-Akli Mohamed I University, Bouira, November 26-27, 2018, pp. 9-10.
16. Munira Boras, "Transition Towards E-Government in Algeria Between Application and Desire for Development," Doctoral Thesis, El-Hadj Lakhdar University - Batna 1, p. 229.
17. Haj Kaid Kourine, Muhammad Taifour Amina, "Applications of Electronic Knowledge in Algeria: Reality and Challenges," First International Annual Scientific Conference on Economic Intelligence: Digital Systems and Economic Intelligence, Faculty of Economic and Management Sciences, Djilali Bounaama University, Khemis Miliana, Algeria, April 22-23, 2014, pp. 12-13.