E-management and the obstacles to its application in Algerian commercial banks - a case study on the Algerian External bank in Ghardaia

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Abstract:

This research aims to study the obstacles of applying E-management at Algerian commercial banks -Case Study On the External Bank of Algeria in Ghardaia, conducted on a sample of 50 individuals;

We presented a conceptual framework for E-management and identified the obstacles of applying E-management. To determine the obstacles in the Algerian External Bank in Ghardaia, we distributed 46 questionnaires to the workers there and used the SPSS 25 program to process the data and analyze the hypotheses of the study. At the end, we reached the following results:

There are obstacles that prevent the application of electronic management in the Algerian external bank of Ghardaia, are divided into four types namely: technical, organizational, human and financial. This is from the viewpoint of the employees at the bank under study; we will mention it in detail in the article.

Keywords: E-management; Obstacles; Commercial Banks; BEA Bank.
Jel Classification Codes: M21;M5; M19; M15.

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1. INTRODUCTION

Information and communication technologies (ICT) and their applications provide numerous possibilities for economic and human development (United Nations.Economic Commission for Africa, 2014, p. 1)

Today, electronic management and digital economy by using (IT) are two forms of communication, so E-management is an important outcome of IT and communication net mechanisms in the digital world. E-management's systems, tools, hardware and software are examples of the new mechanisms on the internet and in the new economy of knowledge (Ali Ellatif & Ahmed, 2013, p. 34).

In recent years, Algeria tended to implement many reforms in many fields and sectors, therefore, the Electronic-Algeria project was launched in 2013 to popularize electronic management in order to provide quality services to the Algerian citizen (Ben sayah, 2019, p. 264).

Commercial banks in Algeria have applied electronic management at the level of their departments and have shifted from traditional management to develop their banking services and compete with the international standards of international banks.

There are many obstacles to change in the early stages; banks must challenge it when applying E-management to improve their banking services.

In this paper, the researchers will investigate electronic management and obstacles of applying it at the level of commercial banks in Algeria.

1.1 Problem Statement:

In order to know the obstacles of applying E-Management at the commercial banks in Algeria, in particular on the external bank of Algeria of Ghardaia, the problem of this research was formulated in the following main question:

What are the obstacles of applying E-Management at Algerian commercial banks?

The main question raises the following sub-questions:

- What is the history of E-management?
- What is the concept of E-management?
- What are the characteristics and importance of E- management?

What are the obstacles of applying E- management on commercial banks in Algeria?

1.2 Study Hypotheses:

To answer the main question and sub-questions, the following four hypotheses have been adopted:

H_1: There are technical obstacles that hinder the application of E-management on the External Bank of Algeria.

H_2: There are organizational obstacles that hinder the application of E-management on the External Bank of Algeria.

H_3: There are human obstacles that hinder the application of E-management on the External

Bank of Algeria.

H_4: There are financial obstacles that hinder the application of E-management on the External Bank of Algeria.

1.3 Study Objectives:

This research paper aims to achieve the following points:

1- Identify the basics of E-management;

2- Identify the technical obstacles to Applying E-management at the External Bank of Algeria in Ghardaia;

3- Identify the organizational obstacles to Applying E-management at the External Bank of Algeria in Ghardaia;

4- Identify the human obstacles to Applying E-management at the External Bank of Algeria in Ghardaia;

5- Identify the financial obstacles to Applying E-management at the External Bank of Algeria in Ghardaia;

6- Suggest some solutions to facilitate the application of E-management at the External Bank of Algeria in Ghardaia.

1.4 Study Importance:

The importance of the study relates to the following points:

1- The novelty of the topic, which is E-management in Algerian commercial banks, as the term is new, modern and developing;

2- The importance of the technological factor in influencing the efficiency and development of banks in general;

3- The increasing interest of Algerian commercial banks in the field of E-management and administrative development, including information technology and its role in improving bank services.

1.5 Study limitations:

1. **Subject Limit (Academic):** The study was limited to investigate the obstacles of applying E-Management at Algerian commercial banks (case study on the external bank of Algeria in Ghardaia).

2. **Human Limit:** The study focused on and was limited to employees of the external bank of Algeria in Ghardaia, namely the head of the office, the head of the department, the director, the staff and the director of studies.

3. **Institutional Limit:** The study was conducted on commercial banks in Algeria (external bank of Algeria in Ghardaia).

4. **Spatial Limit:** The study was conducted in the State of Algeria, and was limited to Ghardaia.

5. **Timetable:** The study was carried out, as well as the collection of preliminary data on Algeria's external bank of Ghardaia and statistical analysis, between the 23rd of July and the 29th of August (2020), and thus represent the reality at the time.

2. THEORETICAL FRAMEWORK

In this part, the researchers present basic concepts concerning electronic management and some ideas related to the same topic.

2.1 E-management:

The researchers will address the historical development of electronic management as well as some related concepts:

2.1.1 History of E-management:

In this paragraph, we discuss the origins of information and communication technology, as well as their relationship to the history of electronic management as follows (Muslim, 2015, p. 205) :

In 1960, IBM invented a word processor based on the functionality of electric printers to process words when connected to a computer.

In 1964, IBM released the MT_ST (magnetic tape) device, which saves letters on magnetic tape as they are written.

Electronic management emerged in the last five decades of the last century, exemplified by the use of computer systems in activities at the end of the 1950s and 1960s. The development of electronic management was linked to the technological development of management from the beginning of the machine replacing the human being until it reached the internet and business networks.

In organizations, the use of computers means speed in completing work, reducing time and saving resources (Hafez, 2014, pp. 249-250).

2.1.2 Concept of E-management:

It can be defined as the integration into all management processes, that is to say, the finalization, organization, animation, control, impacts and opportunities for new information and communication technologies (NICT) (Kalika, 2000, p. 1).

Electronic management is the system of business and activities that are carried out electronically and across networks. It is also considered the completion of business using electronic systems and means. Therefore, electronic management is considered a continuous dynamic process to improve the completion of business by communication networks, especially the internet (Ghaleb, 2006, p. 10).

Department of Economic and Social Affairs of the United Nations defined E-management as the use of ICTs and their applications by the administration to provide information and public services to the population in order to ensure management (United Nations.Economic Commission for Africa, 2014, p. 3).

From the previous definitions, we can define E- management as carrying out administrative functions using information technology and communication through electronic means.

2.1.3 Principles of E-management:

E-Management system is designed by combining technology and the characteristics of a future

organization. When these elements are combined, the following e-management principles result (Yao, Bin Othman, Aballama, & Mahdi, 2011, p. 6659) :

2.1.3.1 Integrated system:

The organization's system can be integrated with external systems. They must integrate all departments internally to form a single system, and then the internal system will integrate with the external system to connect customers and suppliers.

In practice, there are two main types of integration: database integration and system integration.

2.1.3.2 Automated system:

In an E-Management environment, the integrated system automates all of the organization's processes.

Full automation means that it avoids total manual process of information between all related entities in the organization.

Automation is based on four principles:

- Process reengineering;
- Real-time data transferring;
- Minimum manual process;
- Minimum human interference.

2.1.3.3 Intelligent system:

The E-Management System is designed with Artificial Intelligent (AI) in all of its processing engines; it can simulate the experts Mind in the system.

There are several principles:

- Optimizing and tuning;
- Predicting and forecasting;
- Summarizing;
- Analyzing and proposing;
- Self-troubleshooting and machine learning.

2.1.3.4 Paperless system

Paperless environment is one of the most important elements in e-management, and all the Information systems must be designed towards a paperless environment.

All applications, approvals, meetings and reporting mechanisms must be changed to ensure the use of online information; only those documents needed by external users which cannot be connected online are justified to have printed hardcopy. The following are some of the benefits of a paperless system:

- Online information access;
- Online announcement;
- Online application and approval;
- Online notification and online reporting.

2.1.3.5 Dynamic system:

A dynamic organization must manage changes in the most fast and efficient manner. The E-management system, which is the supporting element in the organization, must be very dynamic and flexible to allow any changes needed by the organization.

Characteristics of dynamic system are:

- Scalable;
- Configurable;
- Customizable and personalizable.

2.1.4 Obstacles of E-management:

Researchers divide the obstacles to the application of E-management into six categories, but we study just four factors, which are as follows (El-Seoud & Taj-Eddin, 20018, pp. 451-452):

2.1.4.1 Organizational obstacles:

Management of knowledge, employees and internal communication are all identified in current business management literature as being instrumental in terms of organizational success and survival.

Furthermore, the e-government processes are complicated and complex information systems with monolithic architectures are currently handling them. This complexity is transferred to the users each time they transact electronically via such a system.

2.1.4.2 Technical obstacles:

Lack of sufficient software, facilities, incongruity between systems and users, as well as lack of sufficient bandwidth of the internet and the existence of network and telecommunication problems and difficulties in IT application.

2.1.4.3 Humanistic obstacles:

The interaction of E-management initiatives with human-beings may be hampered due to humanistic factors such as human resistance to change, insufficient number of specialists, lack of interest, motivation and etc.

2.1.4.4 Financial obstacles:

The lack of financial resources allocated to the infrastructure needed to implement electronic management, especially the construction networks, linking sites, hardware and software development.

Lack of resources available to higher managements as a result of the connection with fixed and limited budgets in which they are fixed aspects of spending (Alhasanat, 2011, p. 55).

3. FIELD STUDY

This part contains the study method, the population and the sample as well as the study tool with hypothesis testing.

3.1 Methodology of the study:

The descriptive approach is best suited to measuring the perceptions of study participants because it enables us to collect information from a large number of individuals so that we can then generalize the information to all the members of the studied society.

3.2 Society and Study Sample:

We studied the case at the Algerian External Bank in Ghardaia, so we present a bank profile as follows:

The Algerian External Bank was established according to the order No. 204/67/10/01 with a capital of 20 million DZD after Algeria’s nationalization of five external banks.

Then, it was transformed into an economic public corporation, it used to finance external trade, but now it grants credits for imports and gives guarantees to Algerian exporters to facilitate their tasks (Latrash, 2007, p. 22).

The study population consisted of employees in the External Bank of Algeria in Ghardaia. The total number of the study community members is 50 due to the small size of the sample. The sample has been selected randomly.

The required sample size estimated at 45 Samples (calculator SS, 2020).

Accordingly, 50 questionnaires were distributed and 48 were retrieved; two of which were canceled due to lack of data and 46 questionnaires were analyzed, which is an appropriate size greater than 45, representing 92% of the study population shown in table (01).

Table 1. Number of questionnaires distributed and valid for study

Statement	Number of distributed quest	Number of refundable quest	Number of non-refundable quest	Number of cancelled quest	Number of quest valid for study
Number of questionnaires	50	48	2	2	46

Source: prepared by the researchers.

3.3 The Study Tool:

We chose the questionnaire as a tool for collecting the necessary data in order to determine the obstacles to applying electronic management in Algerian commercial banks. It was designed after reviewing a set of questionnaires related to the same topic.

Building of questionnaire:

The questionnaire consisted of two major sections:

- **Incorporating demographics:** gender, age, education level, job level and professional experience.

The second section consisted of two axes:

- **The first axis:** talks about E-management elements (hardware, software and communication networks) and contains 9 phrases.
- **The second axis:** talks about obstacles to applying E- management; it contains 12 phrases. We used in this axis the SPSS 25 to analyze the questionnaire.
- **Likert scale:** in this scale, the participant is asked to determine the degree of his agreement or disagreement with the questionnaire phrases according to five-point scales, provided that each possibility has a degree that determines the importance of the phrase in order to analyze individuals' assessments of the level of obstacles to applying E-management, which included the answers:

Strongly disagree, disagree, neither agree nor disagree, agree and strongly agree.

The weighted Average of the Likert Scale is determined in table (2).

Table 2. Weighted Average of the Likert Scale

Degree of approval	Strongly disagree	Disagree	N.agree N.disagree	Agree	Strongly agree
weighted Average	1-1.79	1.80 -2.59	2.60 -3.39	3.40 -4.19	4.20 -5

Source: prepared by the two researchers.

3.4 Psychometric properties of the questionnaire:

3.4.1 Reliability of the questionnaire:

Reliability of the scale means giving the same results if it is re-applied to the same sample.

Cronbach's alpha is a method of assessing reliability. Using the SPSS program, the Alpha Cronbach coefficient was calculated to find the internal consistency of the combined study questions shown in table (03). Its value was 91.8%, which is greater than 70%, indicating the instrument's reliability, consistency, and feasibility for use in the study.

3.4.2 Validity of the questionnaire:

The validity of the questionnaire means measuring what it is designed to measure as shown in table (3).

Table 3. Validity and reliability coefficients of the questionnaire

The axes	Number of items	Reliability coefficient (α)Cronbach	Validity coefficient
Total	21	0.918	0.958

Source: prepared by the researchers based on the outputs of the SPSS program.

3.5 Sample Characteristics:

This section describes the sample of the study, showing the frequencies and percentages of participants according to their demographic variables (gender, age, education level, job level and professional experience).

Gender: the distribution of the sample population according to gender regarding the external bank of Algeria is shown in table (4). In light of the study sample's repetition, which has a total volume of 46 individuals, we note that there is a convergence between the percentages of male and female participants concerning gender, so that the percentage of males is (58.7%), while the percentage of females was (41.3%). This explains that there is no discrimination between male and female in working at the bank as shown in table (4).

Table 4. Sample characteristics according to gender

Gender	Frequency	Percent %
Male	27	58.7%
Female	19	41.3%
Total	46	100%

Source: prepared by the researchers based on the outputs of the SPSS program.

a) **Age:** The relative frequency distribution of the members of the study sample according to the age variable can be shown in a table (5). It is clear from these data that the equivalent of 78.2% of the participants is between the ages of less than 30 years and 40 years. As for the other age groups, they are of varying percentages, in which people over 50 years represent 2.2% as a minimum percentage.

Table 5. Sample characteristics according to Age

Age	Frequency	Percent%
Less than 30 years	18	39.1%
31 to 40	18	39.1%
41 to 50	9	19.6%
More than 50 years	1	2.2%
Total	46	100%

Source: prepared by the researchers based on the results of the SPSS program.

b) **Job:** The distribution of the members of the study sample according to the job variable can be shown in table (6). The greatest percentage of employees was 71.7%, and this is normal because the majority of workers in the bank are regular employees, followed by the category of organization's head with a small percentage estimated at 19.6%, then an office head at 6.5%, and one director.

Table 6. Sample characteristics according to job

Job	Frequency	Percent %
Employee	33	71.7%
Office head	3	6.5%
Organization head	9	19.6%
Director	1	2.2%
Total	46	100%

Source: prepared by the researchers based on the results of the SPSS program.

c) **Educational level:** As it appears in table (7), 73.9% of participants (34) are bachelor, 17.4% (8) have gotten master degree and 8.7 % (4) are of high school level. Thus, it is evident that most participants have a university degree.

Table 7. Sample characteristics according to Education level

Education level	Frequency	Percent %
High school	4	8.7%
Bachelor	34	73.9%
Master	8	17.4%
Total	46	100%

Source: prepared by the researchers based on the results of the SPSS program.

d) **Experience:** As it appears in table (8) and through the results, we notice that the largest percentages were 41.3% and 39.1% for the two groups of less than 5 years and 10 years of experience. This explains that the bank's policy of employment targets new graduates, then the percentages are in order of experience from the least experienced to the most experienced.

Table 8. Sample characteristics according to Experience

Experience	Frequency	Percent %
Less than 5 years	18	39.1%
6 to less than 10 years	19	41.3%
10 to 15 years	7	15.2%
More than 15 years	2	4.3%
Total	46	100%

Source: prepared by the researchers based on the results of the SPSS program.

3.4 Hypotheses testing:

In this part, we will talk about the most important results after testing and analyzing the hypotheses presented in the theoretical part about the obstacles to the application of E-management in the external bank of Algeria in Ghardaia.

We have four hypotheses testing obstacles in bank which are (organizational, technical, human and financial) as the following:

3.4.1 Testing hypothesis of technical obstacles:

H_1: There are technical obstacles that hinder the application of E-management in the External Bank of Algeria.

The items which measure technical obstacles are shown in table (9)

Table 9. Arithmetic mean and standard deviation for technical obstacles

N	Items	Mean	Std.DEV	Towards
01	Lack of infrastructure for communication networks	3.78	1.26	Agree
02	Lack of interest in monitoring the development of information technology	3.70	1.28	Agree
03	Lack of maintenance follow-up of electronic devices	3.59	1.22	Agree
The result of technical obstacles		**3.69**	**1.25**	**Agree**

Source: prepared by the researchers based on the results of the SPSS program.

According to table (9), the arithmetic mean of technical obstacles is (3.69). This indicates that the answers tend to agree. "Lack of infrastructure for communication networks" has the highest mean of 3.78, whereas the lowest mean of (3.59) was for phrase 03: "Lack of maintenance follow-up of electronic devices". This means that the employees of Ghardaia in the external bank agree that there are technical obstacles in the bank under study.

- By analyzing the previous results, we accept the first hypothesis; there are technical obstacles that hinder the application of E-management in the External Bank of Algeria.

3.4.2 Testing the hypothesis of organizational obstacles:

H_2: There are organizational obstacles that hinder the application of E-management in the External Bank of Algeria.

The items that measure organizational obstacles are shown in table (10)

Table 10. Arithmetic mean and standard deviation of organizational obstacles

N	Items	Mean	Std.DEV	Towards
01	Lack of a suitable work environment for applying E-management	3.78	1.20	Agree
02	Lack of spreading the culture of implementing E-management in the bank	3.74	1.10	Agree
03	absence of follow-up on the evolution of the application of E-management	3.70	1.07	Agree
The result of organizational obstacles		**3.74**	**1.12**	**Agree**

Source: prepared by the researchers based on the results of the SPSS program.

According to table (10): The arithmetic mean of organizational obstacles is estimated at (3.74). This indicates that the answers tend to agree. "Lack of a suitable work environment for applying E-management" gained the highest mean of 3.78. Further, the lowest mean of (3.70) was for phrase 03: "absence of follow-up on the evolution of the application of E-management". We understand that the employees of Ghardaia's external bank in Algeria believe that there are organizational obstacles in the bank under study.

- By analyzing the previous results, we accept the second hypothesis; there are organizational obstacles that hinder the application of E-management in the External Bank of Algeria.

3.4.3 Testing the hypothesis of human obstacles:

H_3: There are human obstacles that hinder the application of E-management in the External Bank of Algeria.

The items that measure human obstacles are shown in table (11).

Table 11. Arithmetic mean and standard deviation of human obstacles

N	Items	Mean	Std.DEV	Towards
01	Lack of training programs regarding the human component to work in E-management	3.70	1.17	Agree
02	Weakness in the skill of languages for some workers	3.17	1.28	Agree
03	Workers are afraid to use the computer because of not perfecting the work with it	3.41	1.16	Agree
The result of human obstacles		**3.42**	**1.20**	**Agree**

Source: prepared by the researchers based on the results of the SPSS program.

According to table (11), the arithmetic mean of human obstacles is (3.42). This means that the answers tend to agree. "Lack of training programs regarding the human component to work in E-management" has the highest mean of 3.70. The lowest mean of (3.17) was for phrase 02: "Weakness in the skill of languages for some workers". This means that the employees of Ghardaia's external bank in Algeria believe that there are human obstacles in the bank under study.

- By analyzing the previous results, we accept the third hypothesis; there are human obstacles that hinder the application of E-management in the External Bank of Algeria.

3.4.4 Testing hypothesis of financial obstacles:

H_3: There are financial obstacles that hinder the application of E-management in the External Bank of Algeria.

The items that measure financial obstacles are shown in table (12)

According to table (12), the arithmetic mean of financial obstacles was estimated at (3.83), indicating that the answers tend to agree. "Lack of financial support to cover the costs of E-management in the bank" obtained the highest mean of 3.89, whereas the lowest mean of (3.78) was for phrase 03: "Lack of funding for computer equipment maintenance", which means that the employees of Ghardaia's external bank in Algeria believe that there are human obstacles in the bank under study.

Table 12. Arithmetic mean and standard deviation of financial obstacles

N	Items	Mean	Std.DEV	Towards
01	Lack of financial support to cover the costs of E-management in the bank	3.89	1.26	Agree
02	Lack of funding for training courses for workers in E-management	3.83	0.99	Agree
03	Lack of funding for computer equipment maintenance	3.78	0.98	Agree
The result of financial obstacles		**3.83**	**1.07**	**Agree**

Source: prepared by the researchers based on the results of the SPSS program.

- By analyzing the previous results, we accept the fourth hypothesis; there are financial obstacles that hinder the application of E-management in the External Bank of Algeria.

4. RESULTS AND DISCUSSION

By analyzing the previous results, we reached the following results:

- we accept the first hypothesis; there are technical obstacles that hinder the application of E-management in the External Bank of Algeria;
- we accept the second hypothesis; there are organizational obstacles that hinder the application of E-management in the External Bank of Algeria;
- we accept the third hypothesis; there are human obstacles that hinder the application of E-management in the External Bank of Algeria;
- we accept the fourth hypothesis; there are financial obstacles that hinder the application of E-management in the External Bank of Algeria.

Finally, according to the results of the previous section, all of the proposed hypotheses were accepted, indicating that there are obstacles impeding the application of E-management in the Algerian external bank in Ghardaia, including technical, organizational, human, and financial obstacles, with unanimous approval by the employees of the bank under study. The average is (3.71) i.e. this value corresponds Agree in the Likart scale.

5. CONCLUSION

This research aims to identify the obstacles of applying E-management in the external bank of Algeria in Ghardaia. In light of the current research finding and the discussion above, the researcher can clearly conclude that there are four types of obstacles: technical obstacles, organizational obstacles, human obstacles and financial obstacles.

Through the results of the study, the researchers put together a list of the most important obstacles to the application of electronic management in the Algerian External Bank in Ghardaia, which were as follows:

1) **Technical obstacles:**

- Lack of infrastructure for communication networks;
- Lack of interest in monitoring the development of information technology;
- Lack of maintenance follow-up of electronic devices.

2) **Organizational obstacles:**

- Lack of a suitable work environment for applying E-management;
- Lack of spreading the culture of implementing E-management in the bank;
- Absence of follow-up on the evolution of E-management application.

3) **Human obstacles:**

- Lack of training programs for the human component to work in E-management;
- Weakness in the skill of languages for some workers;
- Workers are afraid to use computers because of not perfecting the work with them.

4) **Financial obstacles:**

- Lack of financial support to cover the costs of E-management in the bank;
- Lack of funding for training courses regarding the workers in E-management;
- Lack of funding for computer equipment maintenance.

Through the results of our study we can make a number of recommendations:

- Organizing training courses for workers on electronic management;
- The necessity of instilling the culture of electronic management among those working in administration and members of society;
- Providing the infrastructure for the electronic management project;
- Providing qualified and trained human officials for a successful application of e-management;
- Providing sufficient financial allocations to implement E-management;
- Continuous development of electronic software to keep pace with global developments.

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