The importance of the successful use of information technology as a tool for improving organizational performance in the Bank of Agriculture and Rural Development

TCHIKOU ABDELKADER*
University of Algiers 3- Algeria
Tchikouaek@gmail.com

BOUKLIA MOHAMED
University of Algiers 3- Algeria
boukliahamed@gmail.com

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Abstract:

This study aims to analyse the impact of implementing information and communication technology as an improvement tool for the organizational performance at the Bank of BADR. Where we developed a questionnaire related to the study variables, then this questionnaire was presented to the employees of the Bank of Agriculture and Rural Development (Algiers Down Town) and they recovered 82% of it. The results obtained showed that information and communication technology have significant positive effects between the level of using information and communication technology tools (networks, software and techniques), and organizational performance thus operational performance among the employees. Additionally, it highlights the importance of the successful using information and communication technology as a main requirement for Algerian banks, in order to improve the organizational performance, and thus achieving the highest degree of efficiency and effectiveness of performance.

Keywords: Information and communication technology (ICT); Organizational performance; Bank of BADR.

Jel Classification Codes: D80, D23.

*Corresponding author.

1. Introduction:

The information and communications revolution are forging a far more integrated economy, information and communication technology or (ICT) also One of the major developments which had profound impact on the economic growth pattern in the world in the new millennium has been the strides in the domain of Information Technology sector.

To stay competitive in an era of disruption and to be successful in today's dynamic business environment information technology now is the most preferred choice of all developing and developed countries to upgrade their economies and become competitive in the global market place, held a meeting on the subject in April 2000 (New York) and the resulting report, prepared for the ECOSOC conference, states that "Developing countries have great potential to compete successfully in the new global market, but unless they embrace the ICT revolution promptly and actively, they will face new barriers and the risk of not just being marginalized but completely bypassed.

The world has become a global village where the utilization of computers and communications are widely available, mobile phones, internet, satellite networks, and others that provide the latest trends in communication that are applicable in processing, storing and distributing wide array of reliable information, and this has been key to innovation, productivity and growth for organizations, by their growing reliance on the Internet and Information and Communication Technologies (ICTs), which allow them to take advantage of the global economy, as well as to strengthen processes, and to innovate.

There is a growing requirement in recent times for the implementation of Information & Communication Technology (ICT) to improve organizational performance, therefore creating immense value to organizational efficiency and effectiveness and it implies that ICT brings an organizational advantage .

All available research indicates that ICT has gained massive attention within organizations in a dynamic globalizing environment and changing conditions, Research also indicates that organizations spend more than fifty per cent of the new investment money on IT as well as associated communications, and further ICT, is the most preferred choice of all countries to upgrade their economies and become competitive in the global market place organizations do operate and manage their operation using ICT as one of the many tool used to advance the course of business growth .

In their request for development many developing countries put great intent in use of ICT to upgrade their economies and become competitive in the global market place, consequently in Algeria as in many other countries, ICT now is the most preferred option, it seen as the engine to speed up the growth of businesses and business transactions are becoming increasingly dynamic.

The mission of every information and communication technology based in any organization is to improve performance on the work and this performance efficiency and effectiveness is only achieved when ICT is accepted and used warmly by the concern managers and employees in organizations only to enhance their functions and activities of each organization parts have to work and focusing, but also to Attaining high performance, where demands a robust ICT infrastructure supported by a sound ICT management practice.

In these ways, information and communication technology is a very important tool that can be used to achieve improvement in each of the economic, administrative, and social sectors.

1.1. Study problem:

The Study problem is In the following main question:

What is the impact of implementing information and communication technology as an improvement tool for the organizational performance in the Bank of Agriculture and Rural Development (BADR)؟

Sub-questions: through this research problem, we can ask the following sub-questions:

- What is the reality of the use of information and communication technology among theemployees of the Bank of Agriculture and Rural Development؟
- What is the relationship of information and communication technology to the organizational performance of employees in the Bank of Agriculture and Rural Development?

1.2. Study hypotheses:

The main question and sub-questions can be answered by testing the following hypotheses*:*

- **The first main hypothesis**: There is a statistically significant effect of information and communication technology as a tool to improve organizational performance in the Bank of Agriculture and Rural Development at the level of statistical significance ($\alpha \leq 0.05$).
- **The first sub-hypothesis**: There is a statistically significant effect for the dimension of software and techniques as a tool to improve organizational performance in the Bank of Agriculture and Rural Development at the level of statistical significance ($\alpha \leq 0.05$).
- **The second sub-hypothesis**: There is a statistically significant effect of the dimension of communication networks as a tool to improve organizational performance in the Bank of Agriculture and Rural Development at the level of statistical significance ($\alpha \leq 0.05$).
- **The second main hypothesis:** There is a statistically significant effect in knowledge of information and communication technology concepts on organizational performance in the Bank of Agriculture and Rural Development at the level of statistical significance ($\alpha \leq 0.05$).
- **The third main hypothesis**: There is a statistically significant effect of a relationship between information and communication technology among employees in the Bank of Agriculture and Rural Development at the

level of statistical significance ($\alpha \leq 0.05$).

1.3. The importance of the study:

The importance of the study is highlighted in that it contributes to covering an important aspect of how to use information and communication technology on the organizational performance of employees in the Bank of Agriculture and Rural Development.

1.4. Study Objectives:

The objectives of this study are as follows:

- Knowledge of information and communication technology concepts.
- Knowing the organizational performance of the employees.
- Studying the relationship between information and communication technology and organizational performance at the Bank of Agriculture and Rural Development.

1.5. Study variables:

This study included two variables:

- Independent variable: represented in information and communication technology (Software and Technologies, Networking)
- Dependent variable: The organizational performance.

2. Concepts about ICT and organizational performance:

We try to provide brief theoretical concepts of the study variables represented in information and communication technology and organizational performance.

2.1. What is information and communication technology?

Information and communications technology has become one of the major developments which had profound impact on the economic growth pattern in the world in the new millennium, it's play an increasingly important role since we are now in the information age era, it is also the state of the art technology of the modern world and had a revolution impact on how we live, hence the good way to think about ICT is to consider all the uses of digital technology that already exist to help individuals, businesses and organisations use information, it's the infrastructure and components that enable modern computing.

There is no globally accepted definition of ICT,it can refer to anything related to computing technology, such as networking, hardware, software, the Internet, or the people that work with these technologies.

Ritchie and Brindley define ICT as "the array of primarily digital technologies designed to collect, organise, store, process and communicate information within and external to an organisation."

According to Mrs. MeghaGokhe" ICT, is technology that supports activities involving information. Such activities include gathering, processing, storing and presenting data. Increasingly these activities also involve collaboration and communication[1].

Other definitions of ICT emphasis the levels or categories of ICT i.e. used as an administrative and support tool and ICT used in the production process of goods and services. (Modimogale&Kroeze) , ICT, also facilitate the processing; transferring and communicating of information in a digital mannerfew researchers consider ICT as a range of electronic products, both digital and analogue. These products could be radio, television, telephones (fixed and mobile), computers, and electronically-based media such as digital text as well as audio-video streaming[2].

It is a set of different means, tools, techniques or systems that are employed to process the content or content that is intended to be communicated to the various stakeholders, depending on several stages starting from obtaining and controlling data from the environment, and then the process of data processing, which includes organization, tabulation, storage, coding, and analysis to reach the results of the treatment phase to take advantage of them in a timely and appropriate manner[3].

It is also defined as "the sum of different techniques, tools, means or systems that are employed to process the content or content that is intended to be communicated through the process of public, personal or organizational communication, through which information and data are collected, audio, written, photographed, photographed or sent. Visual, printed, or digital (through electronic computers), then storing this data and information, then retrieval in a timely manner, then the process of publishing these communication materials, messages, audio or audio-visual, printed or digital materials, and transferring them from one place to another, and exchanging them. This technique may be manual, mechanical or electronic[4].

Hence the definition that will be adopted for this research of ICT will be:

'Information and Communications Technology (ICT) is a performance improvement tool therefore to help managers understand what's not working about their processes and which are the best ideas for improving them directly as well as indirectly to perform better and to be effective and efficient.'

2.2. The importance of information and communication technology:

Information technology plays a major role in the modernization and development of institutions, which leads to the creation of a competitive advantage among institutions and leads to the creation of various types of business environments. This can be noted as follows[5]:

- Helps in achieving effective control in operational processes.
- Helps to provide an actual workforce within the organization.
- Help to increase the administrative communication channels between the various departments.

- Helps to save time, especially for senior management, and to devote themselves to more important duties.
- Helps reduce the size of administrative organizations.

2.3. Functions of information and communication technology

According to Kabari (2015), the following are the perceivable importance of information and communication technology[6]"

- **Speed:** Information and communication technology help a worker to calculate a whole lot faster than human beings.
- **Cost effectiveness:**Information technology has helped to computerize the business process thus stream lining businesses to make them extremely cost effective money making machines.
- **Trade convenience:**Internet is a great place to post an advertisement for selling any product: as it accessed across the globe, it is possible to receive quotations from other parts of the world.
- **Creation of new jobs:**That information and communication technology has made mechanical jobs like that of a typist, redundant.

2.4. Impact of ICT on the organizational performance:

According to some authors (Verboncu, Zalman, 2005) performance is "a particular result obtained in management, economics, marketing, that print features of competitiveness, efficiency and effectiveness of the organization and its procedural and structural components". And therefore it's a concept whose dimensions have changed with the growing competitiveness and complexity of the economic environment in which organizations operate[7].

Managers measure and control organizational performance because it leads to better asset management, to an increased ability to provide customer value, and to improved measures of organizational knowledge. In addition, measures of organizational performance do have an impact on an organization's reputation. Organizational performance is the ability of an organization to reach its goals and optimize results, organizational performance also can be defined as a company's ability to achieve goals in a state of constant change. Moreoverorganization performance refer to ICT contributions to organization, including cost saving, expanded markets, additional sales, reduced costs, time saving, productivity, profitability, and market value. Howeverorganization performance devided into 2 (two)[8];

(1) Operational performance (the performance of business process) "Operational performance: is the ability of enterprises to deliver products or services to customers that's mean customer's satisfaction, employees satisfaction, and environmental performance using economical processes, This description of operational

performance highlights its close association with lean manufacturing and Six Sigma methodologies to drive strategic[9]."

(2) Final performance (the performance of financial) "The final performance identifies how well a company generates revenues and manages its assets, liabilities, and the financial interests of its stakeholders and stockholders that means profitability, growth, and market value." According to VenkatramanandRamanujam "organizational effectiveness performance is reflected in better financial performance in the medium or long term, because performance improvement is at the heart of strategic management and organization theory[10]"

Organizations invest in the information and communication technology to support their business activities, and offer unique opportunities to contribute significantly to economic growth thus to improve their performance (efficiency, effectiveness, Innovative business and competitiveness), additionally to support growth (productivity growth, strategic growth sales increase and profitability). In order to achieve these goals and results there are some conditions must be satisfied to successfully adopt ICT, certain infrastructure, skilled ICT, and budget to invest in ICT[11].

3. The practical side:

The impact of implementing information and communication technology as an improvement tool for the organizational performance in the Bank of Agriculture and Rural Development.

In this part of the study, we will try to project the theoretical side on the field on the reality of the employees working in the Bank of Agriculture and Rural Development, through the questionnaire that we relied on mainly in the data collection process, which allows us to test the hypotheses as they are subject to analysis by the SPSS program.

3.1. Study and Sample

We get to know the population and sample of the study as follows:

- **Study population:** The study population refers to all employees working in the Exterior Bank of Algeria, on which the research is being conducted.
- **Study sample:** After distributing the estimated 45 questionnaires based on the total sample, 35 valid questionnaires were retrieved for analysis, after missing questionnaires and questionnaires that contained more than one answer in one phrase were excluded.

3.2. Describe the characteristics of the study sample:

Table (01)shows the characteristics of the two study samples:

Table No. 01 shows the characteristics of the employees and workers of the Bank of Agriculture and Rural Development

Characteristics		Number
Gender	**Male**	**13**
	Female	**22**
Total		**35**
The Age	**lessthan 35**	**11**
	35-47	**9**
	47-57	**8**
	morethan 57	**7**
Total		
Educational Qualification	**TechnicalDiploma**	**5**
	Bachelor's degree	**23**
	Master's degree	**6**
	Magesterdegree	**1**
Total		**35**
Number of years of service	**less than 10 years**	**8**
	20-10	**17**
	30over than	**10**
Total		**35**

Source: Prepared by the two researchers

3.3. Information and data for the target sample for measurement:

The questionnaire contains the main study variables, where the independent variable represents information and communication technology and consists of sub-dimensions (software, technologies, and communication networks), the dependent variable represented in organizational performance. Since the paragraphs statements according to a five-graded Likert scale and the weights of the statements are calculated in a five-way method (strongly agree, agree, neutral, disagree, strongly disagree), the questionnaire was subjected to tests of validity and reliability and as follows and Table No. (02) shows the results of tests honesty and persistence.

Table No. (02) Results of honesty in reliability coefficient ofreliability statistics

N of Items	Cronbach' Alpha
3	0.778

Source: Prepared by the two researchers based on the outputs of the spss system

The value of the alpha coefficient for all paragraphs of the questionnaire was (0.778), and the resolution in its final form is distributable. Thus, the two researchers have confirmed the validity and reliability of the study questionnaire, which makes him fully confident in the validity of the questionnaire, answering the study questions and testing its hypotheses.

3.4. Initial diagnosis of the results:

For the purpose of identifying the level of each variable in the study based on the attraction of the views of the study sample in the Bank of Agriculture and Rural Development throughout the study, the two researchers presented the level of the study variables to verify the initial diagnosis of the results:

❖ **Presenting the results of the level of the sample answers from the study variables:**Table No. (03) Presents the results of the descriptive statistics for the study variables (arithmetic mean, standard deviation and coefficient of variation), the total dimension of the main (independent) variable, information and communication technology in the Bank of Agriculture and Rural Development, and it is clear from them that:

Table No. (03) First Dimension: Descriptive Statistics for Total and Dimension (Software and Technologies)

the question	Arithmetic mean	standard deviation	Variation coefficient
Q 1	**3.50**	**0.880**	24.6
Q 2	**2.90**	**0.980**	32.3
Q 3	**3.55**	**0.813**	20.5
Q 4	**3.70**	**0.652**	17.2
Q 5	**3.90**	**0.972**	25.8
Total Dimension Software and Technologies	**3.51**	**0.859**	24.08

Source: Prepared by the two researchers based on the outputs of the spss system.

Table No. (03) shows the details of the first dimension (software and technologies) for the main independent variable (information and communication technology) as follows:

- The first dimension (software and techniques): my total mean of the dimension (software and techniques) reached (3.51), which is a good harmony with the answers at the level of the employees of the Bank of Agriculture and Rural Development, in terms of the general standard deviation (0.859) and a coefficient of difference (24.08), and this indicates that the effectiveness of this dimension It slightly exceeded the average in the Bank of Agriculture and Rural Development over the course of the study.
- Paragraph (5Q) of the first dimension (software and techniques) achieved the highest response with an arithmetic mean value (3.90), a mean dispersion between the answers and a standard deviation (0.972), and

a coefficient of variation (25.8), which indicates that modern techniques are being documented through the use of very software. Sophisticated to increase the use of information technology.

Table No. (04) The second dimension: Descriptive statistics for the total and dimension - communication networks-

the question	Arithmeticmean	standarddeviation	Variation coefficient
Q 1	**3.66**	**0.771**	22.2
Q 2	**3.44**	**0.850**	21.5
Q 3	**3.34**	**0.859**	24.2
Q 4	**3.80**	**0.780**	19.3
Q 5	**3.92**	**0.889**	22.8
Total networkdimension	**3.63**	**0.829**	22.06

Source: Prepared by the two researchers based on the outputs of the spss system.

Table No. (04) shows the details of the second dimension (communication networks) of the main independent variable (information and communication technology), as follows:

- The second dimension (communication networks): Paragraph (2) of Table No. (04) shows the responses of the sample members regarding the paragraphs and the total dimension (communication networks) at the level of the Bank of Agriculture and Rural Development, and it is clear from it the following indicators: My total mean of the dimension (communication networks) reached It is (3.63), and the dispersion was above the average in the answers in terms of the general standard deviation (0.839), and with a coefficient of difference (22.06), and this indicates that the effectiveness of this dimension slightly exceeded the mean over the course of the study.
- Paragraph (Q5) of the second dimension (communication networks) achieved the highest response with an arithmetic mean value (3.92), and an above-average dispersion between the answers in terms of the standard deviation (0.889), and with a coefficient of variation (22.8), which indicates that employees seek to use communication networksTo know the developments of modern communication and teamwork to achieve the objectives of the Bank.

Table No. (05) presents the results of descriptive statistics for the study variables (arithmetic mean, standard deviation and coefficient of variation) and the total main variable (dependent) organizational performance in the Bank of Agriculture and Rural Development, and it is clear from them that:

Table No. (05) Descriptive Statistics of the Total Variable (Organizational Performance)

the question	Arithmeticmean	standarddeviation	Variation coefficient
Q 1	**3.35**	**0.706**	17.4
Q 2	**2.55**	**0.794**	23.5
Q 3	**3.70**	**0.980**	25.7
Q 4	**3.45**	**0.874**	24.6
Q 5	**3.20**	**0.765**	22.4
Total network dimension	**3.45**	**0.823**	22.72

Source: Prepared by the two researchers based on the outputs of the spss system.

It is clear from Table No. (05) details of a total of the main independent variable (organizational performance) as follows:

- The mean of my total calculation for the independent variable (organizational performance) is (3.45) and the general standard deviation is (0.823) and the coefficient of difference (22.72) and this indicates that the effectiveness of this variable is the organizational performance of workers in the Bank of Agriculture and Rural Development throughout the study.
- Paragraph (Q3) for the main independent variable (organizational performance) achieved the highest response with an arithmetic mean value (3.70), and a dispersion above the average between the answers with standard deviation (0.980), and with a coefficient of variation (25.7), which indicates the consistency of the organizational performance variable among workers in Bank of Agriculture and Rural Development.

3.5. Testing and analyzing the hypotheses of the correlation and influence relationships between the study variables:

Presenting the results of testing the hypothesis of the correlation between the application of information and communication technology as a tool to improve organizational performance in the.

Table No. (06) values of Spearman's correlation coefficients between information and communication technology and organizational performance

Variable	Software and Technologies	Networks	Number of Correlation Coefficients	Percentage %
organizational performance	**0.942**	**0.951**	**2**	%77.88

Source: Prepared by the two researchers based on the outputs of the spss system.

It is clear from looking at the correlation matrix in Table No. (06) that:

- The software and techniques dimension indicates a correlation with the organizational performance variable.

- The networking dimension showed a strong and significant positive correlation with (organizational performance).
- Significant values of the correlation coefficients achieved from the dimensional level (software, technologies and communication networks) ranged between (P≤0.05 and P≤0.01).
- The achieved results indicate the emergence of (77.88%) of the expected relationships between information and communication technology and organizational performance. Overall organizational performance and at the level of dimensions in the Bank of Agriculture and Rural Development over the course of the study.

❖ **The first main hypothesis:** There is a significant relationship of information and communication technology as a tool to improve organizational performance in the Bank of Agriculture and Rural Development. Presenting the results of the impact relations hypothesis test for its sub-variables of information and communication technology on organizational performance in the Bank of Agriculture and Rural Development.

An analysis of the impact of its sub-variables of information and communication technology on organizational performance in the Bank of Agriculture and Rural Development. Table No. (07) shows the effect of distancing and total information and communication technology on organizational performance in the Bank of Agriculture and Rural Development.

Table No. (07) First Dimension: Impact of Software Dimensions and Techniques on Organizational Performance

dependent variable	determination coefficient R2	regression coefficient β	calculated t value	The calculated F value	Indication level P	The nature of the relationship
Organizational Performance	**0.920**	**0.959**	**26.920**	**679.523**	**0.000**	high spirits

Source: Prepared by the two researchers based on the outputs of the spss system.

The data of Table No. (07) indicate that the first dimension (software and technologies) from (dimensions and total of information and communication technology) has achieved the following results: The first dimension (software and technologies) achieved a high significant effect in most of the dimensions of outstanding performance in terms of (t) and (F) values. Calculated at the level of significance (0.05).

Table No. (08) The second dimension: the impact of the dimensions of communication networks on organizational performance

dependent variable	determination coefficient R2	regression coefficient β	calculated t value	The calculated F value	Indication level P	The nature of the relationship
Organizational Performance	**0.931**	**0.965**	**31.302**	**979.836**	**0.000**	high spirits

Source: Prepared by the two researchers based on the outputs of the spss system.

The data of Table No. (08) indicate that the second dimension (communication networks) from (the dimensions and total of information and communication technology) has achieved the following results:

The second dimension (communication networks): achieved a high significant effect in most of the dimensions of outstanding performance in terms of (t and (F) values) calculated at the level of significance (0.005).

Table No. (09) The impact of the total dimensions of information and communication technology on organizational performance

dependent variable	determination coefficient R2	regression coefficient β	calculated t value	The calculated F value	Indication level P	The nature of the relationship
Organizational Performance	**0.894**	**0.945**	**24.795**	**614.790**	**0.000**	high spirits

Source: Prepared by the two researchers based on the outputs of the spss system.

The data of Table No. (09) indicates that the total information and communication technology in the dimensions of organizational performance has achieved the following results:

- Total dimensions of information and communication technology in organizational performance: The data of Table No. (09) reflect that the total dimensions of information and communication technology have achieved a significant and high degree of impact on the total organizational performance in terms of (t) and (F) values calculated at the level of significance 0.05.
- Within the framework of the presented results, the second main hypothesis (the main impact hypothesis) can be accepted, which says: "There is a statistically significant effect of a relationship between information and communication technology among employees in the Bank of Agriculture and Rural Development at the level of statistical significance ($\alpha \leq 0.05$)."

4. Conclusion:

This study dealt with the impact of the application of information and communication technology as a tool to improve organizational performance in the Bank of Agriculture and RuralDevelopment(CENTRE of ALGER).

There is a direct relationship between the use of information and communication technology and organizational performance with Information and communication technology with its various applications has contributed to improving the productivity of organizations and increasing their efficiency and performance, whether in terms of service quality or product or in terms of speed, efficiency and accuracy in performance. Employees and directing their behaviour by imposing new methods that are compatible with the possibilities offered by information and communication technology.

The study presents a set of recommendations as follows:

- Seeking to increase investment in communication software and networks to keep pace with global changes and developments and to apply it on the ground the latest technology.
- Working on training employees on modern techniques and improving and raising the level of performance.

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