

The effectiveness of information technology in digital transformation within government institutions

The case of El wancharissi University, Tissemsilt

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Abstract:

The world is currently witnessing a scientific and technological revolution that has made international relations more integrated and interactive, especially with the developments that have taken place in recent years, where digital transformation in institutions has become an urgent necessity more than ever in order to optimize the use of information technology and help the good conduct of operational efficiency and thus improve the services that better provided by organizations to customers.

In order to achieve the objectives of the study, we designed a questionnaire about Al-Wansharissi University Foundation, which included (41) items in order to collect primary information, and the study sample consisted of (57) individuals.

The study reached a number of results, the most important of which are: There is a modest interest in the application of information technology, while the level of digital transformation is high, with a positive impact of the application of electronic management in improving administrative services in the institution under study.

Keywords: information technology; digital transformation; university; administrative services.

JEL Classification Codes: C82, C13, C52, D8, I20

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1. INTRODUCTION

The digital economy has dominated various aspects of administrative work in all institutions, the latter now possessing databases for various administrative functions, and communication networks such as the Internet, intranets and extranets, not to mention the increasing use of computers and other accompanying technological equipment. This reality forced the institutions to engage in administrative change and work on its development to benefit from its results, which made the managers pay attention to the developments imposed by this reality, and keep pace with the required change by knowing the priorities that they undertake in order to reduce paper transactions and routine administrative procedures, and adopt electronic methods in The field of management, and the completion of work anywhere and at any time with high speed and efficiency.

1.1 Study problem:

Through the above, the following main question can be asked: To what extent does the application of information technology affect the development of digital transformation El wancharissi University, Tissemsilt?

1.2 Research objectives:

Based on the problem raised, this study aims to:

- Highlighting the role of theoretical concepts related to information technology and the development of digital transformation.
- An attempt to identify the reality of the application of information technology in the institution, the field of study.
- To identify the extent to which the dimensions of information technology contribute to the administrative development of the institution.
- Attempting to present a set of proposals for the development of digital transformation through the dimensions of information technology.

1.3 The importance of the study:

The importance of the study stems from the need to reach a deeper understanding of the application of information technology in institutions, and as a result and scientific benefit to know its impact on digital transformation, and this requires emphasis in order to obtain a higher degree

of administrative development, because knowledge of the impact of information technology in improving administrative services gives Managers rationalize their decisions.

1.4 Hypotheses of the study:

Based on the study problem, the following hypotheses were formulated:

- Information technology may be applied at the University of El Woncharsi in Tsemself to a high degree
- The level of job performance in the institution, field of study, may be high.
- There can be a positive impact of information technology in improving job performance in the institution under study.

1.5 Data collection method and tools:

In this research, the descriptive analytical method was used in order to identify the impact of the dimensions of the independent variable (information technology) on the dependent variable (digital transformation). A questionnaire was designed that attempts to answer the study questions objectively, and this questionnaire covers the independent and dependent variables of the study.

1.6 The statistical methods used:

The data was analyzed and processed by the program (SPSS). The analysis process was based on:

- Measurement of reliability through Cronbach-alpha coefficient to express the validity and reliability of the study tool.
- Measures of descriptive statistics (frequencies, arithmetic means, standard deviations).
- Simple and multiple regression analysis and Pearson's correlation coefficient to measure the effect and relationship between the dimensions of the independent variable and the dependent variable.

1.7 Limitations of the study:

- Spatial boundaries: The study was conducted by the University of Ahmed Ben Yahya El Ounchrissi, Tissemsilt.
- Temporal limits: The study was conducted during the year 2022

1.8 Previous studies:

- A study by Lalouche Ghina (2023), University of Algiers 3, entitled: Information Technology Infrastructure in the Shadow of the Digital Economy, where:
The economy in the age of the Internet, the conceptual framework of information technology, the requirements of the infrastructure of information technology to serve the digital economy, where technical and informational development has become one of the most important weapons among countries to extend influence. Possession of knowledge and technology has become the primary driver of the new global economy, in parallel with the global trend towards adopting a knowledge society, i.e. a society in which knowledge is applied in all its systems to improve its performance and raise its level of capabilities. One of the results of this research was the transfer of historical transformations, keys to civilization and strengths from matter to information and from machine to knowledge and from mass production to electronic production in computer industries, software technology and digital information services through business activities and electronic commerce. All this helped to shift from the virtual world of business and transform traditional economic activity into a digital virtual one. Where is this new economy based mainly on information technology, the degree of connection to the global information network, the availability of information highways, as well as digital exchange services.
- A study by Hamdi Pasha Rabah and Bouzurki Kawthar (2017), University of Algiers 3, entitled: Cloud Computing: A New Model for the Consumption of Information Resources in Economic Institutions
Where the cloud computing technology was discussed from two aspects, the first is conceptual, which includes the various definitions that dealt with it, its characteristics, models of its spread and the types of services it provides, while the second aspect was exposed to the most important reasons for organizations moving towards cloud solutions,

computing in emerging organizations and organizations with a structure
In the end, we address the most important challenges it faces and that prevent its spread.

2. Theoretical side

2.1 The concept of information technology:

The concept of information technology is of great importance, given the role it plays in exploiting knowledge in order to achieve development. For this reason, we will introduce the concept of information technology, then introduce the concept of elements related to information technology, and then information.

2.1.1 Definition of Information Technology:

We will first discuss the definition of the term technology, then the term information, and then a comprehensive definition of information technology.

2.1.1.1 Technology Concept:

Many people imagine that the concept of technology is mainly related to the tools and machines that are manufactured, and this in general terms is a misconception. Technology, in fact, is the human mind that thinks about how to manage life by making good use of knowledge and transforming it from its theoretical side that resides in the human mind to its practical side, which is represented in tools and equipment, which provide him with a better service than before. (Jaafar, 2005)

2.1.1.2 Concept of information:

Information represents data that is prepared in a form that is more useful to the individual and that has a driving value in the current or expected use or in the decisions that are taken. (Hardy, 2006)

The term information is related to the term data on the one hand and the term knowledge on the other hand. Knowledge is information that can be used and invested to reach useful results. (Ali & Green , 2012)

After we have dealt with providing definitions related to the basic elements related to information technology, we will now resort to presenting a definition related to information technology itself, and among these definitions we find:

Information technology represents the tools and techniques used by information systems to carry out computer activities of all kinds and applications, including both computer hardware and software. (Ali & Abdullah, 2008)

Information technology is represented in the processing, storage, transmission, display, management, organization and retrieval of data. (Salleh & Noor, 2010)

Information technology is meant as the information revolution associated with the manufacture, acquisition, marketing, storage, retrieval and distribution of information through modern, developed and rapid technological means through the joint use of electronic computers and modern communication systems. (Ismail Mohamed , 2002)

2.1.2 Evolution of Information Technology:

The term information technology, despite its novelty and its great association with computers, we can confirm that this term is not born of the hour, but was associated with information and communications that preceded technology in its modern concept, where the development of information technology was associated with the development of its industry, and thus a timeline for the development of the information technology industry can be established, which in four basic stages: (Najm Abboud, 2009)

A) The systems-based system phase (1964-1981):

During this stage, he encountered the use of Grosh's Law, which indicates that computer power increases at the square rate of cost, and therefore the higher the computer speed, the lower its cost.

B) The phase of the system based on the personal computer (1981-1994):

Where did this stage coincide with the emergence of Moore's Law, which expresses the operational power.

C) The stage of the network-based system: (1194-2005):

During this stage, he encountered Metkalf's Law, which indicates that the value of the network increases exponentially with the increase in the size of the network, which makes it expand and become more effective.

D) The stage of the system based on the legal axis (2005-2015):

The transformation law appeared, based on the fact that the extent of

the transformation of the industry will be equivalent to the square of the value-added percentage of the industry, which is calculated by means of abstract information (the flash) as a reflector for the treatment of corn.

3. Digital transformation in government institutions:

Technological progress has become the main driver for the emergence and development of the digital economy, so that the essence of the characteristics of this economy is the use of technology and its employment in this new economy. Information technology also plays a prominent role in the life of societies today, whether at the level of individuals and groups or at the level of organizations. (Rusu & Najla , 2015)

3.1 Digital Transformation:

Perhaps digital transformation is the most common phrase you heard during your meetings. Some people may confuse the concept of digital transformation, as some believe that once one or two new programs are used, their company or organization will be digitally transformed, or even a shift to focus on transforming the company from a company that relies on paper correspondence to a company that relies on e-mail, but digital transformation is much greater. Who is this. (Benlian & Thomas Hess , 2015)

3.1.1 Concept of digital transformation:

Investing in thought and behavior change to bring about a radical shift in the way of working, by taking advantage of the great technological development that has taken place to serve the beneficiaries faster and better. Digital transformation provides huge potential for building effective, competitive and sustainable societies, by achieving a radical change in the services of various parties, including consumers, employees and beneficiaries, while improving their experiences and productivity through a series of proportional operations, accompanied by reformulating the necessary procedures for activation and implementation. (Spremic, 2017)

3.1.2 Features of digital transformation:

- Reshaping the way people live, work, think, interact and communicate, depending on the available technologies, with continuous planning and constant striving to reformulate practical experiences.
- Improve efficiency, reduce spending, and implement new services

quickly and flexibly. **(David & Valérie , 2008)**

- Achieving a radical change in the services provided to individuals in the areas of health, education, safety and security, and improving their experiences and productivity.
- Changing business models and changing mentalities.
- Take advantage of modern technologies to be more aware and flexible in work and the ability to predict and plan for the future.
- Enable faster innovation to achieve desired results and drive towards success. **(digitaltransformation, 2022)**
- Providing a strategy to create higher competitive value, advanced work teams, and the sustainability of a culture of creativity.

3.1.3 Benefits of digital transformation:

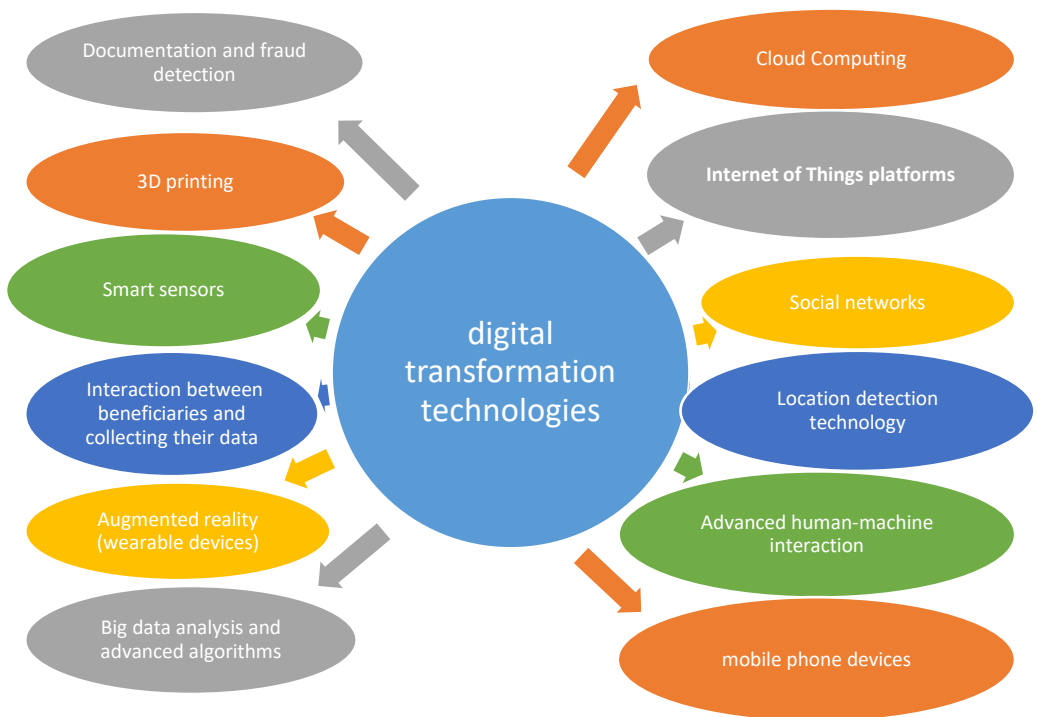
Digital transformation has many benefits, the most important of which can be mentioned are the following:

- Replacing digital operations with traditional ones.
- Increased thinking time for development.
- Changing business models and changing mentalities.
- Increase workflow efficiency and reduce errors.
- Speed up the daily workflow.
- Apply new services quickly and flexibly.
- Quality improvement and performance development.
- Increase productivity and improve products.
- Increase beneficiary satisfaction.
- Improving investment feasibility.

3.2 Digital Transformation Technologies:

The most important digital transformation technologies can be shown in the following chart:

Fig.1. Digital Transformation Technologies



Source: <https://www.my.gov.sa/wps/portal/snp/aboutksa/digitaltransformation>

3.2.1 E-learning:

E-learning platforms have been developed in many countries of the region. For example, in Saudi Arabia, the national education portal “Ain” has become the main channel for education for more than six million users, and the digital education platform has been updated to provide 300,30 thousand devices for students in need, in addition to providing more than 100 thousand interactive digital educational hours for university students. The Egyptian, Saudi and Palestinian governments have also provided free internet for university professors and free SIM cards for students to access learning platforms through their devices. In Tunisia, Morocco and Bahrain, operators provided free access to online education platforms. In Jordan, new platforms have been developed to host teaching materials such as Darsak, Edraak, Go

Academic and Abwab.

It should be noted that the weakness of the networks and the inability of users to access broadband services in some countries such as Lebanon, Iraq and Jordan prompted their governments to broadcast lessons via television as well. (Buthaina, 2021)

3.2.2 Measures taken by Middle East and North African governments to improve the network and promote the use of broadband services:

Governments in the Middle East and North Africa region responded quickly, working to improve broadband networks and boost internet services. For example, some governments and telecommunications companies have reduced the burden of purchasing recharge cards on prepaid users, allowing them to pay after consumption (Egypt, Tunisia and Palestine), and have also increased the size of Internet packages and speeds for users without additional cost (Lebanon, Iraq and Bahrain), and covered the cost Additional benefits include increasing monthly quotas for subscribers (Egypt), unblocking VoIP applications (UAE and Oman), providing more spectrum to telecom companies (Jordan and Saudi Arabia), and securing free cloud applications for businesses (Vodafone in Egypt). In the Kingdom of Saudi Arabia, the government has been able to secure continuity of access to various e-government services thanks to its continuous investment in modern digital infrastructure and digital government platforms over the past two decades. (Buthaina, 2021)

3.2.3 New risks and vulnerabilities in the digital infrastructure:

However, despite these government solutions and initiatives, some risks and weaknesses related to digital infrastructure in the Middle East and North Africa have emerged, such as:

- The inability of many telecom operators to continue their work, which requires the presence of their employees at work sites, due to the closure procedures.
- The disruption of global trade, especially with countries exporting electronic equipment, which affected the availability of devices and equipment for broadband networks and services.
- Increasing cases of theft and vandalism of communications equipment

- Increase in cyberattacks, fake news, and cases of digital fraud that capitalize on the public panic and confusion surrounding the COVID-19 pandemic.
- Threat to self-privacy through the use of mobile communications personal data by some governments to track and prevent the spread of COVID-19. (Buthaina, 2021)

3.3 Theories explaining the movements of the exchange rate in the long run:

Are theories that try to explain how the exchange rate is affected by economic, financial and political factors in the long run. Among the most important of these theories:

3.3.1 Purchasing power parity theory:

It says that the exchange rate is determined by comparing the price level between the two countries, and that the exchange rate changes to maintain the purchasing power parity of the currencies.

3.3.2 Balance of Payments Theory:

It says that the exchange rate is determined by comparing the volume of payments and dues between the two countries, and that the exchange rate changes to maintain the balance of payments balance.

3.3.3 Monetary approaches:

It says that the exchange rate is determined by comparing the level of money stocks and the demand for currency between the two countries, and that the exchange rate changes to maintain a balance in the money market.

3.3.4 Portfolio Balance Model:

It says that the exchange rate is determined by comparing the level of financial and investment allocations between the two countries, and that the exchange rate changes to maintain a balance in the capital market.

4. EXPERIMENTAL

4.1 Study methodology:

4.1.1 Study population and sample:

The study population consists of the workers at El wancharissi University, Tissemsilt totaling (104) workers. From this community, a sample of (81) individuals were selected, using the simple random sampling

method, based on the sample size table.

4.1.2 Distribution and management of the questionnaire:

(81) questionnaires were distributed to workers in the various departments of the institution, (65) of them were retrieved, and it was found that (8) of them were not subject to analysis, so that the number of questionnaires that could be analyzed became (57), i.e. (70.37). % of the distributed questionnaires.

4.1.3 Study tool:

This questionnaire consists of three parts as follows:

A- The first part: the personal and organizational characteristics of the sample, including (sex, age, educational qualification, job location, number of years of work).

B- Part Two: Information Technology (the independent variable) includes (21 items) that measure the following dimensions:

The technical infrastructure and equipment include (7) paragraphs;

- Administrative services include (7) paragraphs;
- Beneficiary services include (7) paragraphs;

C- Part Three: Digital Transformation (the dependent variable) includes (20 items) that measure the following dimensions:

Administrative re-engineering includes (5) paragraphs;

- Simplifying work procedures, including (5) paragraphs;
- Regulations and laws include (5) paragraphs;

The development of human resources includes (5) paragraphs;

4.2 Results:

It should be noted that we used the five-point (LIKERT SCALE) scale in the study tool, where scores were given (1,2,3,4,5) to (completely agree, agree, neutral, disagree, totally disagree) for the purposes of statistical analysis. (Sekaran & Uma, 1993, p. 253)

4.2.1 Validity and reliability of the study tool:

A. Validity of the tool:

By applying the data obtained, it was concluded that the coefficient of validity for the variables of the overall study is (85.90%), which is an acceptable percentage to a large extent, as the acceptable percentage in social

studies is (60%). (Reg & Tavakol , 2011, p. 55)

B. Reliability of the tool:

Table (01) shows the stability values of the measurement tool for the study variables, where the Cronbach alpha coefficient for the variables of the overall study was (542.8%), while the Cronbach alpha coefficient for the information technology items was (76.0%), while the Cronbach alpha coefficient was for the digital transformation items (77.8%) as it is higher than the minimum percentage (60%) and this reflects the stability of the measurement tool to an acceptable extent.

Table 1. The stability values of the measurement tool (Cronbach-Alpha)

The variable	Number of paragraphs	The value of the Cronbach-alpha coefficient
Information technology	21	0.760
Digital transformation	20	0.778
Total variables	41	0.825

Source: prepared by the researcher based on the outputs of the SPSS program

5. Discussion

5.1 Testing the first hypothesis:

The first hypothesis states that information technology is applied at Ahmed Bin Yahya Al-Wansharisi University to a high degree.

To find out the degree of application of information technology, the length of the categories was relied on as follows: (From 1 to 80.1 low level, from 80.1 to 602 low level, from 602 to 40.3 medium level, from 40.3 to 204 high level, from 204 to 5.00 level very high). The degree of application of information technology was measured through three dimensions, as follows: A- The level of application of information technology in the field of infrastructure and technical equipment:

Table No. (02) shows the responses of the study sample to the paragraphs of the first dimension of the dimensions of information technology, represented in the field of infrastructure and technical equipment. The value of the arithmetic mean for this dimension was (3.41) higher than

the hypothetical mean (3) with a standard deviation of (0.57), and its relative importance is estimated With (66.60%), this means that the level of information technology application in the field of infrastructure and technical equipment was high.

This is due to the fact that the institution possesses a sufficient number of electronic devices used in the completion of the required work, as it is characterized by its high quality in storing and processing information, as well as sufficient interest in maintaining computers in order to maintain the efficiency of its performance.

B- The level of application of information technology in the field of administrative services:

Table No. (02) shows that the respondents' responses to all items of the administrative services dimension were close, and it also shows that the general average of the dimension was (3.21) higher than the hypothetical arithmetic mean (3), with a standard deviation of (80.5), and its relative importance was (62.64%). This means that the level of application of information technology in the field of administrative services was medium.

This is due to the institution's relative interest in training employees to use and apply information technology, especially in the area of facing the difficulties of dealing with electronic software.

C- The level of application of information technology in the field of beneficiary services: Table No. (02) shows that the responses of the respondents to all paragraphs of the beneficiary services dimension were close, and it also appears that the general average of the dimension reached (3.07), as it is very close to the hypothetical arithmetic mean (3) and with a deviation Normative (10.7) and its relative importance (61.40%), which means that the level of information technology application in the field of beneficiary services was also medium. It is the lowest level within the IT application dimensions.

This is due to the institution's limited use of electronic messages with beneficiaries, as it relies heavily on paper-based transactions instead of electronic ones.

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Table 2: The arithmetic means and standard deviation of the study variables

The variable	arithmetic mean	standard deviation	relative importance
Infrastructure and technical equipment	3, 41	0,57	0,666
Functionality	3,21	0, 58	0,642
Beneficiary services	3,07	0,71	0,614
Information technology	3, 23	0, 62	0,640
Administrative re-engineering	3,34	0,75	0,668
Simplify work procedures	3,62	0,48	0,724
Regulations and laws	3,09	0,67	,618
Human power development	3, 91	0,56	0,782
Digital transformation	3,49	0, 61	0,698

Source: prepared by the researcher based on the outputs of the SPSS program

D- The level of information technology application (all dimensions combined): Table No. (02) shows that the level of information technology application is average, as the arithmetic mean is estimated at (0.233) higher than the hypothetical mean (3) with a standard deviation of (0.62), and its relative importance is (0.62). 00.64%), and we note that the order of information technology dimensions came as follows: the field of infrastructure and technical equipment, the field of administrative services,

the field of user services. Accordingly, we reject the first hypothesis, which states that information technology is applied at Al-Wansharisi University to a high degree.

5.2 Testing the Second Hypothesis:

The second hypothesis states that the level of digital transformation in the organization is high. The field of study is high.

A- The level of application of administrative re-engineering: Table No. (02) shows the attitudes of the study sample regarding the application of administrative re-engineering, where the arithmetic mean for this dimension was estimated at (3.34) higher than the hypothetical arithmetic mean (3), as it approaches the high level with a standard deviation (0.75) and its relative importance (66.80%), which means that the level of application of administrative re-engineering was medium.

B- The level of simplification of work procedures: Table No. (02) shows the attitudes of the study sample regarding the simplification of work procedures, and we note that the attitudes of the study sample towards most of the paragraphs related to this dimension were within the high agreement, as for the arithmetic mean of the dimension, it was estimated at (3.62). Much higher than the hypothetical arithmetic mean (3) with a standard deviation of (0.48), and its relative importance is (40.72%). This means that the level of simplification of work procedures was high.

This is due to the fact that the procedure for executing transactions in the institution does not take long.

C- The level of application of laws and regulations: Table No. (02) shows the attitudes of the study sample regarding the application of laws and regulations, and we note that the attitudes of the study sample towards most of the paragraphs related to this dimension were within the average approval, as for the arithmetic mean of the dimension, it was estimated at (3.09). It is slightly higher than the hypothetical arithmetic mean (3) with a standard deviation of (0.67), and its relative importance is (61.80%), which reflects the average level of this dimension, as many workers believe that the current systems and procedures in the institution need to be reconsidered.

D- The level of human resources development: Table No. (02) shows the

attitudes of the study sample members regarding the development of human resources, and we note that the attitudes of the study sample members towards most of the paragraphs related to this dimension were within the high agreement. As for the arithmetic mean of the dimension, it was estimated at (3.91). Much higher than the hypothetical arithmetic mean (3) with a standard deviation of (0.56), and its relative importance is (78.20%), which reflects the high level of this dimension.

E- The level of administrative development (all dimensions combined): From Table No. (02) it is clear that the level of administrative development is high, as the arithmetic mean was estimated at (3.49) higher than the hypothetical arithmetic mean (3) with a standard deviation of (0.61), and its relative importance was (69.80. %), and we note that the arrangement of the dimensions of administrative development came as follows: development of human resources, simplification of work procedures, administrative re-engineering, and then regulations and laws. Accordingly, we accept the second hypothesis, which states that the level of administrative development is high.

5.3 Testing the third hypothesis:

The third hypothesis states that there is a positive impact of information technology on the digital transformation of the institution under study.

Through Tables (03) and (04), we want to prove that the data follows a normal distribution, so we note that the value of ($\text{Sig} \geq 0.05$) for all dimensions of the study and its variables, and therefore the data of the study follow a normal distribution.

Table 3. Test the normal distribution of the dimensions of information technology requirements

	performance implementation	Performance evaluation	Performance review	information technology
N	57	57	57	57
Asymp. Sig. (2-tailed)	0,562	0,306	0,501	0,125

Source: prepared by the researcher based on the outputs of the SPSS program

Table 4. Testing the normal distribution of job performance dimensions

	Administrative re-engineering	Simplify work procedures	Regulations and laws	Human power development	digital transformation
N	57	57	57	57	57
Asy. Sig. (2-tailed)	0,322	0,461	0,623	0,766	0,275

Source: prepared by the researcher based on the outputs of the SPSS program

To analyze the data, a simple regression analysis method was used by taking information technology as one independent variable to determine its impact on managerial development as a first step. In the second step, the multiple regression analysis method was used to determine the impact of the component dimensions of information technology on digital transformation.

The following decision rule was used to test the hypotheses:

H0 Acceptance: If the calculated significance level is greater than the approved significance level (0.05)

H0 Rejection: If the calculated significance level is less than the approved significance level (0.05)

A- Studying the impact of the information technology variable on digital transformation:

The value of the correlation coefficient was ($r = 0.462$), which indicates the existence of a positive correlation, but it is relatively weak between the application of information technology and digital transformation, while the value of the determination coefficient was ($r^2 = 0.213$), and this means that the application of information technology explains the amount of (3.21%) of the change in the dependent variable (functional performance). The significance value was (0.000), which is less than (0.05), and this indicates that the model is significant at a confidence level of (95%). Through Table (05), the following regression equation can be written:

$$\text{Digital Transformation} = 0.341 \times \text{Information Technology} + 1.452$$

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Table 5. Regression coefficients for the impact of performance planning on digital transformation

Sample	non-standard		standard	statistic t	indication
	transactions		transactions		
	Coefficient B	standard error	Beta		
Constant	1,452	0,160		8,650	0,000
information technology	0,341	0,066	0,464	4,092	0,000

Source: prepared by the researcher based on the outputs of the SPSS program

This means that whenever the focus on information technology increases by one unit, it leads to an increase in digital transformation by 0.341 units. Accordingly, we accept the third hypothesis, which states that there is a positive impact of information technology on the digital transformation of the organization.

6. CONCLUSION

Digital development is an integrated economy project that must be based on a comprehensive view that is concerned with infrastructure, platforms, digital skills and applications in vital fields, while striving for this digital economy to be based on respect for self-data, fair and inclusive so that the possibilities of digital transformation are available to all. Digital technology is bringing about fundamental transformations in our economies and has an impact on all sectors such as education and health, agriculture, government and financial services.

6.1 Results: Among the most important findings:

- There is generally a medium interest in the application of information technology through its dimensions that we find unevenly, as the institution pays good attention to the dimension of infrastructure and technical equipment, while the interest in the two dimensions of information technology services and electronic services to beneficiaries was modest.
- The level of digital transformation is high, especially with regard to developing human resources and simplifying work procedures, while

administrative re-engineering and the application of laws and regulations need improvement.

- The application of information technology has a positive impact on the digital transformation of the institution under management.
- The institution was able to influence the digital transformation through the dimensions of information technology, and this was evident through interest in infrastructure and technical equipment, as well as administrative services.

6.2 Recommendations:

As governments continue to create an enabling environment to increase network capacity, improve service quality, and develop innovative services that follow global best practices, it is important to emphasize a number of priority actions in the short, medium and long term. Which includes:

- Removing barriers to private and public sector investment and facilitating the entry of new operators into the telecom market by encouraging competition, reducing licensing fees and sharing revenues;
- organize sentence definitions;
- establish regional cooperation for the construction of new submarine cable systems;
- open access to basic infrastructure in government institutions;
- Adopting an open access policy in order to connect all operators to the infrastructure; for communication in a non-discriminatory manner, especially in universities and educational institutions;
- Infrastructure sharing between operators, including between the transport, energy and telecom sectors;
- Allowing the use of globally popular services such as Voice over Internet Protocol (VoIP).

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