Journal of Information Technology Management

Print ISSN: 2008-5893

Online ISSN: 2423-5059

The Role of TIC on enhancing E-payment System in the Post Foundation of El Oued

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Abstract

This study aims to identify the role of information and communication technology in improving electronic payment methods. The descriptive-analytical approach has been applied. We have learned

about the concepts of ICT and electronic payment methods and the impact of ICT on these methods. On the applied side, an El Oued was distributed to a staff sample in the Directorate of the Algeria Poste unite of the State of El-Oued and several its postal institutions. The El Oued included two main axes: the first focuses on the reality of ICT in the organization. We discussed the electronic payment methods and the control procedures on their system on the second axis. Also, the challenges and risks which they face, the study revealed a statistically significant relationship between the variable of ICT and the means of electronic payment through the influence of some dimensions in the first axis on the dimensions of the second axis.

Keywords: Information and Communication Technology, Electronic payment methods, Algeria

DOI: 10.22059/jitm.2021.80362

Introduction

The beginning of the paper provides a context or sufficient background information for the study (i.e., the significance and nature of the problem) and previous experimental results to enable a reader who is not an expert in the topic to understand the question that is being addressed in the paper, and why it is significant. The introduction should attract the reader to the rest of the article. When presented properly, this section ensures that the reader will understand the experiment's details and its relevance to the scientific community. The introduction should (a) show the nature and the scope of the problem investigated; (b) provide enough background to orient the reader and justify the study, reviewing the pertinent literature to the question; (c) state the reason for the task, and how it differs or is related to previous studies; and (d) form the goal/objectives and method of the investigation. The introduction should explain the study's related background, explain why the research was done and specifies the hypotheses to be tested. Extensive discussion of relevant literature should be included in the form of results, not in the introduction.

Literature Review and Hypothesis

One of the essential elements of e-payment is information communication technology (ICT) (Nadeem.S et al, 2018). Therefore, The investment in and implementing information communication technology (ICT) is essential (Nadeem.S et al, 2018)and Information communication technology (ICT) also has a necessary partnership with any online operation. Besides, e-payment is only possible with ICT technology (ICT). There are minimal

developments in ICT in Tanzania, with less than three individuals having access to ICT infrastructure per 100 individuals. In Tanzania, the E-Commerce innovation program will develop small and medium-sized ICT companies to establish ICT businesses (Oreku.G et al, 2013). However, ICTs essential for managing ICT data, providing a bridge between merchant and customer(Waseem-Ul-Hameed, 2018). When using e-payment services, ICT can earn how to use e-payment services(Yaokumah.W et al, 2017). ICT is also more relevant because technology (ICT) has many logistics services. On the other hand, transport management (TM) is a form of ICT; payment is one of the transport functions. Hence, indirectly e-payment is also one of revenue is directly related to ICT, and the amount needs to be made by ICT. This means that ICT promotes the degree of satisfaction of the e-relationship between e payment and ICT(Waseem-Ul-Hameed, 2018). Three theories concerning the relationship between the quality of staff service and information communication technology (ICT), e-payment and information communication technology (ICT) and, ultimately, information communication technology (ICT) and e-logistic efficiency were suggested to achieve this objective (Naddem.s et al, 2018). Besides improving e-logistics, information communication technology (ICT) is a fundamental mechanism for creating a better e-payment system (Nadeem.S et al, 2018). The standard can be expanded to include management and non-ICT processes (Prihastomo.Y et al, 2019). These users have not correctly discussed ICT improvement until recently (Surendran.S et al, 2018). The first dimension charts the user's progress when using specific ICT. However, this entire method is possible only with the assistance of information communication technology (ICT). (Nadeem.S et al, 2018)

We have asked the following sub-questions: What is ICT, and what are its components? What does it mean by electronic payment methods? What means are available in postal institutions? Are there differences between the average specimens of the sample individuals about the dimensions of ICT due to personal variables at the level of 0.05?.Are there differences between the averages of respondents' responses on the dimensions of electronic payment methods due to personal variables at the indicative level of 0.05?.Is there a relationship between ICT and electronic payment methods in the postal institutions of the El Oued state at the level of 0.05?. To answer the main problem and sub-questions, we have formulated the following assumptions: The information and communication technology (ICT) is the sum of equipment and communication symbiosis related to technology. Electronic payment methods are all techniques that allow payment supination sought by electronic mechanisms, and postal institutions provide electronic payment methods through the gold card. There are no differences between the averages of respondents' responses on the dimensions of ICT due to personal variables at the indicative level of 0.05.There are no differences between the averages of the sample answers about electronic payment methods due to personal variables at the level of 0.05.There is no statistically significant effect between ICT and electronic payment methods at 0.05.

The Theoretical Framework of ICT and Electronic Payment methods

The theoretical framework of ICT and electronic payment methods (Sokobe, 2015). This research will discuss what ICT is and the means and types of electronic payment, and the impact of ICT in electronic payment. ICT concept the encyclopedic dictionary of library and information terminology defines ICT as "techniques for obtaining, siphoned, and transmitting information using a combination of microelectronic computational and telecommunication equipment." According to the OECD, "the range of technologies that allow the collection, storage, and transmission of information in the form of sounds, data and images include microelectronics, e-telescience, and ancillary technologies. From the above, we can say that ICT is meant to be "all the modern technologies available on the level of communication and information and the means used to produce and exploit them with the efficiency, speed, and accuracy required."

The concept of electronic payment methods

There are several identifications of electronic payment methods, the most important of which can be summarized in the following: Algerian legislation defined it as: "The means of payment are all the tools that enable everyone to transfer money, regardless of the support or technical method used." "Money transfer (Aker, 2020) is essentially a price for a commodity or service in a digital way, i.e., using computers, sending data over a telephone line, network or any way to send data."

It is clear to us that electronic payment methods are "a set of means to transfer funds using different technologies and electronic technologies, which facilitate the exchange process safely and quickly and at the lowest possible cost."

The impact of ICT on electronic payment methods

The phenomenon of globalization (Abbasi.M et al, 2018)and information technology (IT) and information systems (IS) (Legner at al, 2017) development has changed the content and destination of the world of commerce and business, this world that began by bartering and exchanging all kinds of goods between members of society and evolved into an exchange in the form of the sale and purchase of goods for money, and then according to social needs and necessities, prompted a change in the concept of cash payment in the field of trade, to be used checks, bills and payment orders, all of which are synonymous with a cash payment in commercial sales and purchases, but the modern era and the developments that have not been made of trade features and made radical adjustments to them. All of them are in the interest of the seller and the buyer; this new face of the trade created the need to develop payment methods following their nature to show electronic payment methods.

Electronic transfer of funds and settlement of transactions over the Internet.

In the modern era emerged electronic payment methods, which were generated by the development of the Internet and the emergence of e-commerce, and this contributed to the evaporation of funds and their transfer to electronics, where the extensive use of computers and digital checks opened a wide door to the transfer of funds to numbers and virtual facts, the most important of these new means are bank cards, which compensated the check-in many small-value payments, and its first appearance was in the United States of America to spread to Europe and then the rest of the world to appear, After the rest of the electronic payment methods.

Although the critical use of the Internet was the speed of communication via e-mail and the collection and distribution of information, internet shopping is growing steadily; before the growth of electronic payment methods over the Internet, most of these funds were received in cash or the form of a check, and the new electronic procedures allowed the flow of funds faster using wire transfers that do not require a physical deposit. The entry of personal computers and modem units led to banking systems accessible from abroad known as computer exchange. By the end of the 1970s, payments to companies were made through direct debit from the client's bank account or through automatic check-in machines. Prices using these methods diverted funds from the client's bank account directly to the company account. Many payment options are currently available using the electronic data transfer system.

E-commerce and banks' drive to integrate ICT

The emergence of mobile Internet (Goggin, 2020) , its widespread and its entry into the fields of business, and the facilities it has provided in various areas, especially economic ones, have contributed to the emergence of e-commerce, which can be defined in its universal sense as "the purchase and sale of goods and services over the Internet.

These phenomena have resulted in a review of the methods and methods of the performance and presentation of banking services, especially as the current situation has become characterized by rapid and continuous change, as well as the great competition and awareness of customers of the quality of service offered in the global market. What can be observed on the latter that it has become characterized by ease of movement and difficulty to withstand competitors, so the integration of banks for ICT (LKCW, 2019) is one of the strategic decisions that are necessary to achieve the factor of excellence and stability in the market, as well as to raise the level of its organizational performance, which is the basis of the bank's success.

Methods:

We tested the study tool (survey) and its phrases to make sure it measures what it is designed to measure, using three types of tests: To verify the authenticity of the content of the survey and to ensure that it serves the objectives of the study was presented to a group of experienced and competent arbitrators, they reached (05) arbitrators see Annex (02), and asked them to study the survey and express their opinion in terms of the appropriateness of the paragraph and the content and the adequacy of the survey in terms of the number of paragraphs and their comprehensiveness, the diversity of their content and the evaluation of language language, or any other remarks they deem appropriate with regard to the amendment, change or deletion as necessary.

We have examined the arbitrators' observations and suggestions and made most of the amendments in the light of their recommendations and opinions, and we have considered the adoption of the arbitrators' observations and the infringements referred to as the apparent honesty of the survey, and therefore I consider it valid to measure what has been put to it.

We applied the study tool after verifying its apparent authenticity on a random sample representing the group of study community (50), to determine the internal homogeneity of the study tool by calculating pearson correlation coefficients between each of the tool hub swords words and all the terms of the axis to which they belong, and the following tables illustrate this:

Table 1. Indicates the correlation coefficients of internal consistency between each ICT phrase and the sum of the axis

ICT								
Communications			Software			Hardware		
Sig	R	Number	Sig	R	Number	Sig	R	Number
0.835	0.030	10	0.000	0.991	05	0.000	0.750	01
0.000	0.642	11	0.000	0.981	06	0.000	0.770	02
0.000	0.621	12	0.000	0.984	07	0.000	0.588	03
0.000	0.684	13	0.000	0.979	08	0.000	0.770	04
0.000	0.742	14	0.000	0.959	09			

It is clear from table 2.4 that all the link transactions of the survey for the ICT hub are a statistical function at 01% and 05% except for the third dimension of the third dimension, which has no statistical significance, and this indicates an internal consistency between each of the TERMS of the IT axis form and all the terms contained in this axis.

Table 2. Correlation transactions internal consistency between each of the terms of electronic payment methods and the sum of the axis.

Electronic Payment Methods					
Control over the procedures and electronic payment systems			Challenges and risks facing electronic payment systems		
Number	R	Sig	Number	R	Sig
01	0.417	0.000	08	0.801	0.000
02	0.389	0.000	09	0.801	0.000
03	0.704	0.000	10	0.652	0.000
04	0.760	0.000	11	0.653	0.000
05	0.755	0.000	12	0.397	0.000
06	0.762	0.000			
07	0.093	0.523			

It is clear from table 2-5 that all link transactions for the electronic payment methods axis have a statistical significance at 01% and 05% except for the first dimension (07) of the first dimension has no statistical significance, and generally this indicates an internal consistency between each of the terms of the e-payment axis form and the sum of the axis.

Measuring the credibility and stability of the survey

We used the Alpha Cronbach scale to determine the stability of the survey and its paragraphs, where this coefficient takes values between (1-0) and the closer the value of the coefficient is to one, and vice versa if the value of the coefficient is equal to zero, and the following table shows the coefficients of stability and honesty for all dimensions and axes.

Table 3. shows the stability coefficients (Alpha Cronbach) for the study tool

The Axes	Dimensions	The number of phrases	Alpha	Validity = square root of stability
ICT	Hardware	04	0.729	0.853
	Software	05	0.988	0.993
	Telecommunications	05	0.734	0.856
Total the first axis		14	0.811	0.900
Electronic payment methods	Control over the procedures and electronic payment systems	07	0.686	0.828
	Challenges and risks facing electronic payment systems	05	0.671	0.819
Total axis II		12	0.707	0.840
Total survey		26	0.742	0861

From the previous table, the value of Alpha Cronbach ranged from 67.1% to 98.8%. The stability of the survey was 74.2% so that the study tool can be described as Consistent and the data obtained through it are suitable for measuring variables and have a high degree of reliability.

Result and Discussion

Through this requirement, we aim to test the acceptance or rejection of the hypotheses of influence and association by using the F and T testing for independent variables by putting forward several hypotheses as follows:

H0: There are no statistically significant differences between the respondents' responses to ICT due to personal variables - (age, duration of work, number of training courses) - at a 5% indication level Through the central hypothesis, it can be divided into sub hypotheses as follows: The first sub hypothesis: There are no statistically significant differences at a moral level of 5% in the sample responses on the ICT axis attributable to age. To test this hypothesis, the One-way ANOVA test was used, as shown in the following table:

Table 4. results of a single TIC analysis of variance by age

	Model	Sum of Squares	df	Mean Squares	F	Sig
Gender	**Regression**	0.608	3	0.203	0.371	0.774
	Residual	25.117	46	0.546		
	Total	25.725	49			

Statistical data in the table above indicate no statistically significant differences between the sample responses on the ICT axis attributable to age at 5%. The moral value of 0.774 was more significant than 0.05, and these results require acceptance of the zero hypotheses.

Subhypothesis II - There are no statistically significant differences at a moral level of 5% in the sample responses about the ICT axis due to work duration in the organization's activity.To test this hypothesis, the One-way ANOVA test was used, as shown in the following table:

Table 5. results of the analysis of single-TIC variance by the duration of work

	Model	Sum of Squares	df	Mean Squares	F	Sig
Duration of employment	Regression	0.446	4	0.112	0.199	0.938
	Residual	25.117	45	0.562		
	Total	25.725	49			

The statistical data in the table above indicate that there are no statistically significant differences between the sample responses on the axis of the parameters and communication technology due to the duration of the work at the level of 5% due to the moral value (0.938), which is greater than 0.05 and these results require acceptance of the hypothesis H0.

Table 6. results of the analysis of variance between TIC by number of training sessions

	Model	Sum of Squares	df	Mean Squares	F	Sig
Duration of employment	Regression	3.063	4	0.766	1.520	0.212
	Residual	25.117	45	0.504		
	Total	25.735	49			

Statistical data in the table above indicate that there are no statistically significant differences between the sample responses on the ICT axis attributable to the number of training courses at 5% due to the moral value (0.212), which is greater than 0.05% and these results require acceptance of the zero hypothesis.

The results of the tables (2-20), (2-21), and (2-22) revealed that there are no statistically significant differences between the sample answers about the ICT axis attributable to the chosen personal information (age- duration of work - number of training courses), and this may be due in general to the fact that this personal information reflects the behaviour and basic principles of the study sample as we found no difference between the respondent's answers about ICT phrases dating back to the age of the respondent, the duration of his work or the number of formative cycles.

Based on the sub hypotheses' results, the central assumption that there are no statistically significant differences between the respondents' responses to ICT is attributable to personal variables - (age, duration of work, number of training courses) - at a 5% indication level.

The relationship of electronic payment methods to personal variables

We are going to put forward the following central hypothesis:

H0: There are no statistically significant differences between the respondents' responses about electronic payment methods due to personal variables - (age, duration of work, number of training courses) - at a level of 5% indication Through the central hypothesis it can be divided into sub hypotheses as follows:

The first sub hypothesis: There are no statistically significant differences at a moral level of 5% in the sample responses about the axis of electronic payment methods attributable to age. To test this hypothesis, the One-way ANOVA test was used, as shown in the following table:

Table7. results of the analysis of unilateral variance between electronic payment methods according to age

	Model	Sum of Squares	df	Mean Squares	F	Sig
Age	**Regression**	0.190	03	0.063	0.856	0.470
	Residual	3.394	46	0.074		
	Total	3.583	49			

Statistical data in the table above indicate no statistically significant differences between the sample responses to the electronic payment axis attributable to age at 5%. The moral value was more significant than 0.05, and these results require acceptance of the hypothesis.

Sub hypothesis II: There are no statistically significant differences at a moral level of 5% in the sample answers about the axis of electronic payment methods due to the work duration. To test this hypothesis, the One-way ANOVA test was used, as shown in the following table:

Table 8. results of the unilateral analysis of variance between electronic payment methods according to the duration of work

	Model	Sum of Squares	Df	Mean Squares	F	Sig
Duration of employment	**Regression**	0.190	04	0.073	1.001	0.417
	Residual	3.219	45	0.073		
	Total	3.583	49			

Statistical data in the table above indicate no statistically significant differences between the sample answers about the electronic payment axis due to the duration of work at 5% because the moral value was equal to 0.417 and is more significant than 0.05. These results require the acceptance of the zero hypotheses.

Sub hypothesis III: There are no statistically significant differences at a moral level of 5% in the sample answers about the axis of electronic payment methods due to the work duration. To test this hypothesis, the One-way ANOVA test was used, as shown in the following table:

Table 9. the results of the unilateral analysis of variance between electronic payment methods according to the number of training courses

	Model	Sum of Squares	df	Mean Squares	F	Sig
Training courses	Regression	0.361	04	0.090	1.261	0.299
	Residual	3.222	45	0.072		
	Total	3.583	49			

The table above indicates no statistically significant differences between the sample answers on the electronic payment axis due to the number of training courses at 5% since the moral value was more significant than 0.05, and these results require acceptance of the zero hypothesis.

The results of the tables (2-23), (2-24), and (2-25) revealed that there were no statistically significant differences between the sample answers about the electronic payment axis attributable to the chosen personal information (age- duration of work - number of training courses) and there were no differences in the responses of the sample members about this axis due to the age of the respondent, the duration of his work or the number of his formative cycles, indicating that there was a complete agreement between the members of the sample on the means of electronic payment

Based on the sub hypotheses' results, the central assumption that there are no statistically significant differences between the respondents' responses to electronic payment methods attributable to personal variables - (age, duration of work, number of training courses) - was accepted 5% indication level.

The relationship of ICT dimensions to electronic payment methods

We will try to test the following central hypothesis:

H0: There is no statistically significant effect on the sample's responses to the dimensions of ICT and electronic payment methods at a moral level of 5%.

Since there are dependent variables and independent variables, multiple linear slopes (stepwise method) have been used, as well as regression analysis to measure the impact of independent and dependent variables, and we will use a technique to test the central hypothesis divided into two assumptions:

The first sub hypothesis: There is no statistically significant effect on the sample's responses about the dimensions of ICT and the first dimension in electronic payment methods (control of procedures and electronic payment systems) at a moral level of 5%.

Table 10. Results of the multiple regression of the impact of information and communication technology in achieving control over electronic payment procedures and systems

Sig	T	Value (Beta)	Standard error	B	Independent variable
0.000	4.237	0.522	0.157	0.667	Hardware

From the table above, we conclude that there is one of the three dimensions of ICT, which is ICT in terms of equipment and equipment, and this is shown in the model above; and in this way, the variables that have no moral and do not affect the dependent variable are

deleted, which is the realization of control over electronic payment procedures and systems, as the increase in equipment parameter and equipment in one unit leads to an increase in the variable control of the means of payment by 0.667 units.

Hence, as a result of the hypothesis, we conclude that ICT in the State Directorate Of the El Oued Post Unit affects the control of electronic payment procedures and systems in only one dimension, which is equipment and equipment, which is in fact what we have seen in postal institutions, from which we reject the zero hypothesis and accept the alternative hypothesis where there is a statistical effect at 5%, and to know the magnitude of the impact the selection coefficient and the correction of the quality indicators of the model factor.

The selection coefficient is R-2.=SSR-SST.

Through the model we have and from SPSS outputs, we found that the selection coefficient for the last selected model was as follows:

Table 11. Selection coefficient for the latest selected model

R	R^2	$\overline{R^2}$
0.522	0.272	0.257

The R-value indicates no strong relationship between the independent variables and the dependent variable of 52.2%. In contrast, the R2 value shows that 27.2% of variations (total deviations in child variable values) are explained by the linear relationship between communication technology in terms of equipment, equipment and the child variable, while 72.8% of variations are due to other factors. The corrected selection coefficient is calculated to confirm the relationship's strength since the selection coefficient is influenced by the number of independent variables in the form even if it is not important to take the corrector. In contrast, the corrector is calculated to confirm the strength of the relationship. Consider the decrease in freedom grades, and its value is always below the selection factor, and here it was 0.257, which indicates that the effect is weak.

Sub hypothesis II: There is no statistically significant effect on the sample's responses about the dimensions of ICT and the second dimension in electronic payment methods (challenges and risks facing electronic payment systems) at a moral level of 5%.

Table 12. Results of the multiple regression of the impact of information and communication technology and the challenges and risks facing electronic payment systems

Independent variable	B	Standard error	Value (Beta)	T	Sig
Hardware	0.651	0.252	0.411	2.522	0.013
Software	0.235	0.245	0.511	2.201	0.032
Telecommunications	0.243	0.215	0.400	2.388	0.042

From the previous table, we conclude that there is an effect between the three dimensions of ICT, which is information technology in terms of equipment and equipment and duration of software, and in terms of communications, as shown in the model above, where the increase in equipment and equipment parameter in one unit leads to an increase in the variable challenges and risks facing electronic payment systems by 0.651 units with the stability of other independent variables, and that the rise in the software parameter in one unit leads to an increase in the variable challenges and risks facing the payment systems. Electronic b 0.235 units with the stability of other independent variables and the rise in communication parameter in one unit lead to increased variable challenges and risks facing electronic payment systems by 0.243 units with different independent variables' stability.

Hence, because of the hypothesis, we conclude that ICT in the state directorate institution, the Algerian Post Unit in the El Oued, affects the challenges and risks facing electronic payment systems in their three dimensions, which is really what we have seen in the postal institutions, from which we reject the zero hypothesis and accept the alternative hypothesis where There is a statistical effect at 5%. To determine the magnitude of the impact, the selection coefficient of 0.686 is calculated, i.e., 68.6% of the variations (total deviations in the dependent variable values) are explained by the linear relationship between communication information technology with its three dimensions and the dependent variable, 31.4% of the variations are due to other random factors. After testing the sub hypotheses and not accepting them, it was found that there is a statistically significant effect between the dimensions of the IT axis and electronic payment methods at the level of 5%, which requires rejecting the central hypothesis and accepting the alternative hypothesis .

Conclusion

Through this study, the role of ICT in improving electronic payment methods was examined. The purpose was to answer the main problem and sub-questions, where several conclusions were reached, the most important of which was ICT, which is all the modern technologies available in terms of communications, information, and means used to produce it and exploit it with the required efficiency, speed, and accuracy. Electronic payment methods transfer funds using different technologies and electronic technologies, which facilitate the exchange process in a safe, rapid manner and at the lowest possible cost.

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Bibliographic information of this paper for citing:

Ahmed, Ben Khalifa; Baali, Hamza; Mohammed Salima, Mesai; El Amine Abdelli, Mohammed; Bentouir, Naima; Khalil, Afef (2021). The Role of TIC on enhancing E-payment System in the Post Foundation of El Oued. *Journal of Information Technology Management*, 13(2), 188-201.