
The Effect of Modern Information and Communication Technology on Customers' Satisfaction in the Algerian Public Institutions -A study Related to The Electronic Services Quality in The Postal Telecommunication Institutions-

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Abstract:

The study aims to test the relationship between communication information technology and customers satisfaction in public institutions. In order to achieve the aim of the study, the researcher followed a quantitative method, and the hypotheses has been analyzed by SPSS program. The study concluded that there was a moral and positive impact on the relationship between information and telecommunication, which means that the increasing of using internet by the public institutions and the provision of electronic services led to increase customers' loyalty and satisfaction. Moreover, this paper emphases on comprehensive electronic services with its all arrangements and details (security, privacy...).also, it Contributes with a high percentage to obtain new loyal customers. the institution shall ensure their loyalty by focusing on keeling up all what is new in modern technology of information and communication.

Key word: information and communication technology, customer satisfaction, electronic service, public corporation.

JEL classification codes : G22, C61

الملخص:

ستهدفت هذه الدراسة اختبار العلاقة بين تكنولوجيا المعلومات والاتصال ورضا العملاء في المؤسسات العمومية، ولتحقيق هدف الدراسة تم استخدام برنامج SPSS لاختبار الفرضيات، أين خلصت الدراسة إلى وجود أثر موجب ومعنوي لعلاقة تكنولوجيا المعلومات والاتصال مع رضا العملاء، ما يعني أن الزيادة في استخدام المؤسسة العمومية للإنترنت وتوفير الخدمات الإلكترونية يؤدي إلى زيادة الرضا والولاء في صفوف عملاء المؤسسة، كما أن التركيز على الخدمات الإلكترونية الشاملة بكل ترتيباتها وتفصيلها من أمن وخصوصية وغيرها يساهم بنسبة كبيرة في الحصول على عملاء أوفياء جدد، تضمن المؤسسة ولاءهم بالتركيز على مواكبة كل جديد يخص التكنولوجيات الحديثة للمعلومات والاتصال.

كلمة مفتاحية: تكنولوجيا المعلومات والاتصالات، رضى الزبون، الخدمة الإلكترونية، المؤسسة العامة.

1-Introduction.

Information and communication technology is improving rapidly and dramatically in recent years, which effects the development of institutions and businesses in most countries of the world, including Algeria, where the past decade has witnessed a rapid growth in the exploitation of information and communication technology, with an increase in all indicators (mobile cellular subscriptions, internet access, mobile and fixed phone, broadband subscription.. etc.).

As well as the rapid transition from the use of an ordinary mobile to Smartphone, as we have witnessed the rapid development of many new information and communication channels, such as social media, mobile cloud Computing, Bing Data, Smart Stations and more.

Without a doubt, this development constitutes a qualitative leap in the choices of clients, customers and service seekers from public institutions, and the creation of new ways of operating and managing companies.

As an inevitable consequence of this great development in information and communication technologies, we find a disequilibrium in the logical balance that includes seller, buyer and the traditional market, as the changing logic of the market comes as a result of change in many external influences, such as changing in mental models of customers towards the marketing and communications strategies of companies, and in the relationship entities multiple actors and participation in the level of controlling institutions in their relationship with customers and gaining their satisfaction and earning them as permanent customers.

Information and communication technology has a major role in defining the widening perspectives that are useful for a better understanding of the relationship between buyers and sellers and the market, and its main role in gaining customer satisfaction, confidence and lasting loyalty.

Many researchers and contributors have submitted studies on the ways in which modern information and communication technologies influence the behaviors of sellers and buyers, including how to gain customer satisfaction and ensure their lasting loyalty (cordella, 2006), (Caryannis et al, 2017), (Di Fatta et al, 2016), (Caputo and Wallezky, 217) also with regard to the impact of modern ICT and

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The contribution to determine the needs and expectations of customers and their desires (Wilson and Volsky, 1998).

As it defines strategies for selling and providing more efficient and effective services (Bourdeau et al, 1998) (Johnston and Marshall, 2016).

The problematic:

Despite the tremendous development related to modern I-Tech and all its contributions in influencing the facilitation and evolution of interaction between the institution and customers and working to gain their satisfaction and trust, it seems that the role of ICT as a major determinant to impact the relationship between customers and the public institution in Algeria in light of competition from private institutions such as banks and financial services are still incomplete, specifically when an extended framework has not yet been identified surrounding the role of ICT in influencing customers' perceptions, aspirations and mental models, thus many effects on management and governance of the various public service sectors in Algeria were not clarified like the postal and transportation corporation, which in recent years has devoted many services and its necessity to modern I-Techs.

Through al has been presented, the problem emerges to be studied through this research is as follows:

“What is the effect of using ICT on gaining customer satisfaction in Algerian public institutions?”

Hypotheses:

Hypothesis N°1: There is a positive relationship between technological readiness and the level of customer satisfaction with the advantages provided by ICT.

Hypothesis N°2: There is a positive relationship between modern ICT and the level of customer satisfaction with the advantages provided by ICT.

Hypothesis N°3: There is a positive relationship between the frequency of requesting Electronic-services and the level of customer satisfaction with the advantages provided by ICT.

Hypothesis N°4: The design of the website has a positive relationship with customer satisfaction on the E-services.

Objectives of the study:

We aim through this study to identify potential guidelines for more effective management and governance of the public services sector, bridging the knowledge gap of the role of modern ICT in influencing level of customer satisfaction in Algerian public institution, and focusing on the formula for providing E-services remotely and how they are compatible the client nature.

Study form:

This research paper proposing an expanded conceptual framework to study the role of ICT

in influencing E-services on the level of customers' satisfaction, supported by a set of hypotheses that we seek to test based on conducting a survey research for a randomly selected sample from the study community represented by postal and transportation institutions' customers, where we use the SPSS program in testing this hypotheses, we value the research with a set of result and recommendations.

2-Theoretical and conceptual framework:**2-1- The ICT is the foundation of marketing in organization:**

The technology change is continuous and fast. There is no guarantee on the stability and resilience of the current services as well as the products that the demand will last in the near or distant future. The marketing department also faces a set of complex challenges from different and wide-ranging sources; the impact of ICT on marketing relation is one of the most important, serious and severe challenges ever. There is a prominent impact on how companies market their products, services in various ways and methods. They effect communication and coordination within the network of many institutions of multiple alliances and complex coordination. On one hand, ICT contributes to activate the enrichment of institutions; on the other hand, it may destruct a range of specific services and industries (Bashir Abbas Mahmoud Al-Alaq, 2015).

Enterprises are currently giving a great attention to all product offerings and sales in light of the extensive use of ICT, which in turn has collaborated to profound changes in the strategies of product launches, expanding markets and remaining at the level of competitors (Michel Kalika and Hadjer Kfi, 2003).

The organization's use or non-use of technology has also become important to its long-term survival. ICT is also extremely important

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in terms of its ability to provide the information required to ensure successful relationships or partnerships. Without partnership and information sharing (the relationship based on Information), organization will not be able to communicate and withstand in a renewed technological and participatory environment, their strengths are cooperation and coordination in various fields. In addition to the existence of growing relationships between all parties with direct and indirect connection There are other challenges in business as the ability of these enterprises to extract value from ICT sources, especially in this case, where enterprises trying to change their focus from the research for competitive benefits provided by strategic information systems to the research for benefits after the process of re-engineering, and in this particular field I-Tech can play a crucial role in the transformation process where ambitious can unlock the great benefits of post re-engineering. Therefore, it can be said that ICT had achieved clear success in transforming the world of broadband marketing into a business and a small world available to all. It also facilitated product design and manufacturing processes, as well as its role in creating and developing effective and efficient marketing.

Without the efficient use of technology, marketing will not have an effective strategy, I-Tech and other technologies provide opportunities to develop new relationships with end users (whether they are end consumers or industrial buyers of goods and services).

2-2-Information and Communication Technology and Customer Satisfaction:With the significant development taking place at the level of ICTs, which is increasing day by day, information and communication technologies become an important strategic resource for institutions, whatever the nature of this institution, modern technologies provide an important set of information important for making good decisions and at appropriate times to serve the goals of the institution (Galbraith, 2012), this technology also guarantees the continuation of the competitive race experienced by the institution during its activity in light of the fierce competition that characterizes the current non-traditional markets (Smith, 1996).

(KMPG, 2014) has determined that the main reason for the relationships of institutions between themselves and with customers comes from ICT, and the fact that three quarters of the citizens of the planet have access to cellular technology and various mechanism of service communication. (ICT) work on changing economic and services societies , with a big leap in some of the leading industrial countries to rely on modern technology where does “digitization” change transaction models, customer relationships, market perceptions and competitive nature visions (Ernst and Young, 2015) (KMPG, 2014)

This is in line with the papers presented at the European conference issued in the biotechnology journal where the role of ICT was discussed and how it could be appropriate for organizational knowledge management process, such as social networking tools, wikis, internal blogging, Smart phones and modern method of technology. (Delone and McLean, 1992) also believe that ICT has six main dimensions, which are the base success in adopting ICT’s:

- The quality of ICT’s: the extent to which the institution is in touch with advanced methods that stimulate accuracy and practice, and the extent of institution’s commitment to the latest technological means, discovered media and applied by other competing institutions in the market.

- Quality of information: in terms of accuracy, importance and its compatibility with the reality of the market and consistency with what is in the minds of clients. Whether this information is satisfactory and convincing to current prospective or targeted customers.

- the ability to use ICT: this means the willingness of customers and employees of the institution to deal and use ICT , the extent of their response to all new developments in this field, their understanding and their ability to work through these constantly renewable technologies.

- Individual impact: the difference that an individual can make from the institution with regard to develop or influence the internal or external environment of the institution, with regard to the communications of employees within the organization (internal communication)or with regard to the communication of the

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institutions or external dealers (communication external) (Delone and McLean, 1992)

-The general impact of institution: what is presented by the foundation in general by the effects and changes introduced in relation to its external and for its customers in terms of ICT, Here shows the critical importance of innovation function in organization (Zhang J Chen and Z Yang, 2015), which has become one of the main and important functions and through which the institution works not to imitate and awaiting scientific approaches and methods to work and imitate them, but rather to initiate the creation , by providing scientific research through the enterprise's innovation research laboratories. (Xiaosheng J, 2013).

Customer satisfaction: (Jacoby and Kyner, 1973) (McCain and al, 2005) believes that customer satisfaction is a process of repeating favorable client's behavior that consistent with the goals and will of the organization because psychological satisfaction is provided by the institution. Modern ICTs contribute to achieve a high degree of customer satisfaction because, according to the latest statistics from specialist, it indicates a great spread of modern technologies among different levels of society (Statista, 2019), which shows the great role of modern technologies used by most dealers in gaining their satisfaction and confidence.

We conclude that customer satisfaction is considered one of the most important dimensions that determine the extent of the organization's success in exploiting a huge development in modern technologies. If the institution is able to make connection to satisfy its customers and gain their trust, then the biggest aspect of that is due to its reliance on modern ICTs. This is what shows the strong relationship between the modern ICT and customer satisfaction.

2-3-E-services, the foundation's path to gain customer satisfaction:The importance role of ICT In the organization and in all its functions developed very quickly such as the marketing, as the internet has become an example of ICT and the most important means on which the marketing function depends, so it is the deal means to process the marketing operations and create channels for services providers. It advanced huge opportunities for organization to expand their customer base, business numbers, profits and

revenues, conditional on the effectiveness of approved e-services plus the electronic marketing methods in order to maintain existing customers and targeted new ones who are visitors to learn the available e-services before the institution turns them loyal customers (Scholsser, White and Lloyd, 2006) according to (Santos, 2003) (Sun and Lin, 2009). The fast development of e-services had been led to fierce competition across platforms that are the main center which controls both quality of services and represent the principal sources of competitive advantage in communication channels and all areas of internet. The high quality of e-services enable the institution to meet customer's needs provides preferences also alternative choices for them enhance loyalty to existing clients, gain new customers and maintaining profitable long-term relationships with them.

Many researcher touched on the definition of e-services or marketing services via internet, where both researcher (Zeithaml, Parasuraman and Malhotra, 2002) defined it as the ability of the website or method of representing the institution services to facilitate shopping operations for customers, how effective it is in relation to explain interpretation of the Foundation's services and products in the best way. As for the definition of (Fassnacht and Koese, 2006) is more comprehensive where the researchers emphasize that the e-services is the mainly the quality of service provided to customers and the extent of its ability to fulfill the aspirations and their needs and the extent of its effectiveness and efficiency to gain their satisfaction and searching new clients.

Many researchers have linked (customer satisfaction, loyalty and trust) to the quality of e-services available in the organization. Indeed, the main reason for reaching customer satisfaction and earning loyalty is the quality services (Anderson and Srinivasan, 2003), (Finn, Wang and Frank, 2009) (Shankar, Smith and Rangaswamy, 2003), and there is almost unanimous consensus who need to focus on developing the quality of services to reach the organization's goals in terms of loyalty clients, despite the presence of some researchers who beside e-services. According to different societies, as well the nature of the service or product provided in line with the culture of the environment and the extent of consistency of society to which the institution belongs (Gupta and Kabadayi, 2010). Others concluded that satisfaction is influenced by the concept by

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comprehensive quality of services and not by the quality of service only (Brady and Cronin, 2001). Through recent studies researcher sum up; a set of dimensions that determine the level of e-services for the institution, these dimension are: (Blut, 2016), (Brucsh and al, 2019), (Rasheed and Abadi, 2014), (Saleem et al, 2017) and others.

Reliability: the fulfillment or reliability of the presentation of the product expresses with us in an accurate, clear and error-free manner. The coincidence of customer is that there is a problem that must be adopted in a standard, appropriate and specific time; the reliability also relates the delivery of the service in a professional manner.

Privacy and security: the privacy dimension includes the protection of customer's personal information, ensuring that his identity and ensuring the confidentiality of all operations such as the services that he benefited from or the products he acquired. It involves protection of customers and users from the risk of fraud and financial loses, and securing the use of electronic and private credit cards, and all financial information.

-Website design: the design of the website takes into account the comprehensiveness of the information that must be provided about the services and the available options and alternatives. It also contains an accurate and timely presentation of all changes or presented offers, research must be available. The design of the site includes all the diagrams, graphs, visual appearance, pictures and instructions and statistics, and everything that can the process of convincing the clients, gain their confidence and get new clients (Collier and Bienstock, 2006).

3-The reality of ICT and E-services in Algeria Post Corporation:

According the Algerian ministry of postal and telecommunication, ICT has become a vital tool of the institution. It reinforces the capacity of operations and it facilitates the services for both administration and population. ICT increases the financial integration, which is a crucial part of the national economic solidarity.

3-1-Orientation towards modern postal services: (the official website of the Ministry on January 22/02/2020)

In this context, it is a need to follow new methods and techniques of modernization and fortify the post networks .in order to integrate all required measures and mobilize all tools to foster customer service, to vary proposed offers and services, thus, to reduce eh inequality and social disparities in the different areas in the country.

Hence, the postal services are interested in democratizing access to a modern framework, which will be gathered by an increasing use of ICT, which remains one of our top priorities. This access may be physical, electronic or based on the use of mobile telecommunications networks. This will allow citizens to benefit from postal services anywhere in the country by using all available means, including the public-private partnership in order to: Make postal and financial services closer to customers by making the opening of neighborhood postal checkpoints a priority both in large urban areas and remote areas Deploy a postal presence in major stations and airports. Support and revitalize rural areas, regions and zones which suffer from difficulties or that are isolated in order to maintain their populations by acquiring and deploying mobile offices. Transform the postman's function into a true commercial agent to offer various postal and financial services at home. Set up in secure malls and public places, multiservice ATMs operating around the clock seven days.

Maintain the State's commitment to provide the populations with a universal postal service, by offering countrywide the basic cost-effective postal and financial services.

Rehabilitate the public service and strengthen the community service concept that would reinforce social cohesion through an action likely to preserve permanently continuity of service, equal opportunity of access and transparency. Sustain actions of general interest targeting vulnerable segments of the population.

Offer an easy access to services by using information and communications technology by deploying an ambitious program of post office computerization (IBP), installing ATMs and EPTs, including the development of applications for remote services or via mobile networks.

To reach these goals, it is important to update laws and regulations. Particularly, in refocusing postal and financial services considering the evolution of the universal service and public service to integrate

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network's interoperability. Also, it opens to young entrepreneurs the distribution segment as part of youth employment ...etc.

Furthermore, modernization also consists in adopting a range of modern ICT-based postal services, incorporating agencies, means and tools of production as well as the proposed services. It will be achieved through automation, mass computerization, digitization and especially the development of online services, remote access and mobile applications use.

Regarding postal agencies, the brand "Algeria Poste" 'Algerian post-office' must evolve in line with the development of society and respect of the architecture and environment of each neighborhood.

To this end, computerizing back and front office within post offices is one of the major projects of postal industry modernization. This structuring project, which relies on the modernization of post office management, will not only influence the citizen and receiving agent's attitudes, but it also aims to:

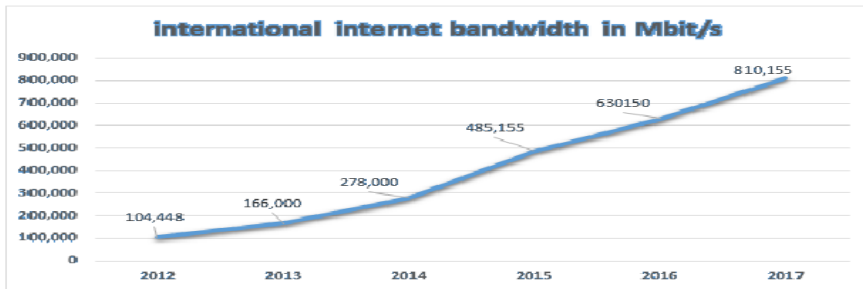
- Improve the quality of services provided to citizens.
- Reduce the queue.
- Secure transactions.

Computerize audit operations and the daily/monthly accountancy. Concerning the means and tools of production, it is meant to minimize at best the manual work by generalizing process automation and using more efficient modern means. To meet an ever-growing demanding client, "Algeria Poste" will give preference to the electronic interface and remote access and promote the use of electronic means of payment via the website. The computerization aims at achieving an information system with national scope, which is reliable, inclusive of all, post activities at all levels. This will support the decentralization of service delivery and services while ensuring regular and rigorous control.

As for the mail / parcels aspects, it should be emphasized that transport and distribution represent the traditional business of the post. It is, therefore, important to implement all modern means to significantly improve the mail delivery on time, but also to use in a clever manner the available resources in order to diversify offer services, improve quality and optimize costs.

Here are some indicators and numbers related to the modern ICT and e-services in Algeria post corporation:

A-Internet index: In the context of modernizing infrastructure and improving services, efforts the connection to fiber optics continue. At the end of 2017, all municipalities have been connected to fiber optics. To meet the needs of the Algerian surfers and offer a quality service, the international bandwidth has steadily increased, and reached 810 155Mbits/s at the end of 2017.



Source: the official website of the Ministry of Post and Communications dated on 22.01.2020 00:45 time

B-Internet Subscriber Index:

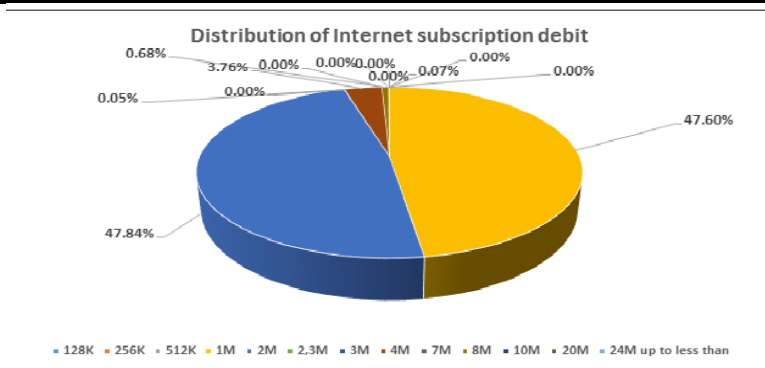
With regard to the internet network in Algeria, the number of subscribers for mobile internet reached 37.83 million at the end of 2017, including 34 million subscribers for mobile internet, the mobile internet, and the figure is on the rise with the introduction of fixed wireless broadband technology (4 G fixed LTE).

C-Internet Subscriber Index by Flow:

The statistics indicate that there is no internet subscriber in the lower categories of 1 MB/s, due to the sectoral policy to provide a high rate to meet the aspirations of the Algerian citizen. In 2017, internet subscriptions with a bit rate of 1Mbit/s represent more than 50% of the total number of subscribers.

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Source: The Official Website of the Ministry of Posts and Communications dated on 22.01.2020 00:45 time.

D-Website and online services indicator:

Indicators	2015	2016
Number of web sites.dz	7148	9162
Number of institutional websites (ministries and related organisms)	587	587
Number of available application forms	265	/
Number of available online procedures	29	30

Source: The Official Website of the Ministry of Posts and Communications dated on 22.01.20 00:45 time.

In order to develop e-administration, institutional websites were made available on-line, to enable citizens to access the various useful information, interact with the administration, and to perform some online procedures.

E-Index of numbers of telecommunications operators and service providers:

Indicators	2014	2015	2016
Number of multi- services stalls KMS	24786	24065	-
Number of internet café	-	5548	-
Number of call center	164	69	86
Audiotex	07	08	08
Internet Access Provider	20	23	28
Voice IP Clients	03	03	03
GMPPCS	30	03	02
VAST	03	03	03
Fixed telephony	01	01	01
GSM mobile phone	03	03	03
G mobile 3	03	03	03

Source: The official Website of the Ministry of Posts and Transport dated on 22.01.2020 00:45 time.

It is noted that the number of multi-services stalls decreased in the year 2015, and this is what exists, as their numbers decreased with the development and generalization of mobile services.

Unlike a study conducted by the Ministry of Post and Information and Communication Technologies through its state directorates, about 5,548 internet cafés were active across the national territory.

During the first six months of 2015, three new internet service providers (ISP) is still witnessing a remarkable growth in Algeria with the inclusion of three new (ISPs) on the market during 2015 and five others in 2016. (Official website of the Ministry of Post and Transport dated on 22.01.2020, 00:45 time).

Depending on the information, statistics and numbers provided by the willful ministry, it is clear that the direction adopted by the Algeria Post Corporation is to move towards circulating transactions that require the personal presence of the customer in order to benefit from a services or request it, which is evident from the bad through acquisitions modern ICT devices.

I believe in the structure and operational plans of the Foundation, it advanced in a balanced step toward achieving this goal, which is evident in the development that takes place from year to year to get the application and embodiment of modern ICT, especially electronic transactions which develops remarkably from time to time, and its impact on customer satisfaction through our study.

4-Research Methodology: Our reliance in this research was on the descriptive analytical approach in an attempt to describe the relationship between the variables, and its analysis, where we are initially relied on a significant group of previous studies and research in the same context. This was manifested in the theoretical side, also the desk survey that we conducted on the study variables in order to better understand the nature of modern ICT, the dimensions of customer satisfaction with institutions, as well as the extent to which the institution under study corresponds to all these variables. We also, focused on this aspect on the Algerian Ministry of Post and Communications, its statistics, and the official data provided in this studied topic (Malhotra, 2005). We also adopted SPSS(Statistical package for social) program in our analysis of the study data and our

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testing of research hypotheses, where we initially drafted a questionnaire. We start it with an introductory message explaining the subject of the study and its goal, then we divided these questions into six main axes, each one indicates a variable of hypotheses to be tested, where the questions of each axis address a variable of the study hypotheses, the first axis consists of six questions that express (technological readiness) (Wolfenbarger and Gilly 2003), while the second axis is made of five questions that express a variable of customer use of ICT (Schlosser, White, and Lloyd, 2006), and the third pivot included five questions dealing with a variable customer satisfaction (Parasuraman, Zeithaml, and as for the fourth axis, it consists of five questions centered on security and privacy in e-services and ICT, (Wolfenbarger and Gilly 2003), the fifth one addressed seven questions indicating the impact of website design on customers. (Bart et al. 2005; Montoya-Weiss, Voss, and Grewal 2003), and the sixth and last axis consists of four questions about the quality of e-services (Montoya-Weiss, Voss, and Grewal 2003), all of these peaceful questions that adopt the scale "Likert" pentagon, that starts with the value (0) and expresses the opinion "totally disagree.", it ends at the value (5) that express the opinion "absolutely agree" with the value (3) expressing the neutral opinion in order to quantify the relationship of independent and dependent variables in our study, as we presented these questions on a group of expert professors to verify its validity and support and their ability to test the study hypotheses, as well as the questionnaire ability to achieve the same results in the event of a repeat study. We distributed this questionnaire to a group of postal and transportation corporation clients, who answered with conviction because they know the importance of the topic, its sensitivity and effects to the clients of the corporation. Once we completed retrieving the questionnaire forms, we emptied their content in the SPSS statistical program, where we statistically processed them for the purpose of extracting numerical ratios to test the research hypotheses and to extract the final results of the research.

5-Results of the research:

5-1-Presenting the study sample: The study sample consists of 357 individuals from clients of the Algerian National Post and Transport

Corporation. the percentage of males in it was estimated at (60,4%), while the percentage of females (39,6%), which is reasonable rates given the nature of the society in which the number of working men and dealers with the institution exceeds Post and transportation in Algeria, as the educational level ratios for the sample individuals ranged as follows: Primary education (20,1%), Secondary education (33.8%), Higher education (45.1%), which are not very far apart, and present all segments of educational community in the study sample. The age ranges of the sample were also distributed logically according to the nature of our study where the large proportion of the youth category was from 19 to 40 years, which is generally the dominant proportion in Algerian society and particularly in the proportion of the working group, while the proportion of the other working group from 41 to 60 years constituted (34.7%) of individuals, which is also a logical percentage, because this age group is still in work and vital, in addition, it is highly frictional and engaging with service institutions. As for a category of 61 years or more, its percentage was the lowest and was estimated at (20.4%), which is the least active age group that dealt with private institutions using modern ICTs.

5-2-Consistency and validity of the study:

We used "alpha crombach" to verify the validity and reliability of the study coefficient for each axis of and the study as a whole, results were as we show in the following table:

Axes	Number of axe & items	Coefficient of confidence
Technological readiness	6	0,776
Use of technologies	5	0,936
Customer satisfaction	5	0,893
Security and privacy	5	0,933
Web design	7	0,847
Quality of e-service	4	0,824
Overall questionnaire	32	0,93

Source: Prepared by the student, based on SPSS test results

It is clear from the results of the table that all the study questions are characterized by stability because all confidence factors of the axes or the total questionnaire exceeded (60), which is the lowest value for the stability of the measurement. Therefore, the study is

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Characterized by stability and we will get approximate results if we repeat the same study.

Statistics Summary	Student test "t"		Fisher "F"		Linear model coefficients		Coefficient of determination R ²	Correlation coefficient R	Statistical result / affiliate variable
	Calculated value	Calculated value	Moral test	Calculated value	slope	constant			
Accept Alternative hypotheses	0,000	7,623	0,000	461,008	0,802	1,139	0,644	0,802	Technological readiness
Accept Alternative hypotheses	0,000	6,780	0,000	534,354	0,823	0,991	0,677	0,823	Use of technology
Accept Alternative hypotheses	0,000	2,751	0,000	343,935	0,917	0,304	0,841	0,917	Security and privacy
Accept Alternative hypotheses	0,000	7,439	0,000	509,205	0,816	1,094	0,666	0,816	Web design

Source: Prepared by the student, based on SPSS test results.

5-3-Test the hypotheses:

To test our study hypotheses, we use the simple linear regression test, where we test the relationship of the independent variable "customer satisfaction" with the dependent variables, where we summarized the test results in the following table.

The results of the simple linear regression analysis are shown the relationship of "customer satisfaction" with the use of ICT with the various details of these uses of technology through the coefficients and determinations between them, as well as the coefficients of the model represented by the equation, where we find that the correlation coefficient R is confined between the two values (77.7% and 80.2%). this means that the correlation is strong and positive with all dependent variables in the assumptions, as the value of the determination coefficient ranged between (60.4% and 84.1%). these ratios are explained by the interpretation of the variables dependent

on customer satisfaction with these ratios, which are high percentages. The results also showed slope values of the linear model equations are fixed between customer and the dependent variable in each case, where we find all values positive. It indicates that the positive impact of ICT with its various variable on customer satisfaction is the percentage of inclination. The results of the analysis, so we find the value of "F" is parallel to the statistically significant value of each of these. This results enable us to test our hypotheses based on the "F" and "T" tests, knowing that the decision rule based on the 0,05 % of significance. In this case we accept the alternative hypothesis "H1" and we reject zero hypothesis "H0".

Thus, the results of the hypotheses become as follow:

A-Test the first hypotheses: we assumed that there is a positive relationship between technological readiness and the level of customer satisfaction with the advantages provided by ICT, referring to the table specifically the significance value (0,000), we accept the alternative hypotheses and reject the zero hypotheses, so the first hypothesis is achieved.

"There a positive relationship between technological readiness and the level of customer satisfaction with the benefits that ICT provides".

B- Testing the second hypothesis: it stipulated that there is a positive relationship between the use of modern ICT and the level of customer satisfaction with the advantages provided by ICT, and referring to the table, specifically the (0,000), we accept the alternative hypothesis and reject the zero one, then the hypothesis is achieved.

"There a positive relationship between technological readiness and the level of customer satisfaction with the benefits that ICT provides"

C- Testing the third hypothesis: it states that there is a positive relationship between the frequency of requesting e-services and the level of customer satisfaction with the advantages provided by ICT, and based on the result of the table, specifically the moral value(0,000), we accept the alternative hypothesis and reject the zero one, then the hypothesis is realized.

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"There a positive relationship between the frequency of requesting e-services and the level of customer satisfaction with the benefits that ICT provides".

D- Testing the fourth hypothesis: the hypothesis says that the web design has a positive relationship with customer satisfaction on the e-services, and based on the result of the table, specifically the moral value (0,000). We accept the alternative hypothesis and reject the zero one, so the forth hypothesis is realized.

"Website design has a positive relationship with customer satisfaction on online services".

E- Testing the fifth hypothesis: it stipulated that security and privacy in electronic services says that has a positive relationship with customer satisfaction and based on the result of the table, specifically the moral value(0,000).We accept the alternative hypothesis and reject the zero one, so the forth hypothesis is fulfilled.

"Security and privacy in e-services has a positive relationship with customer satisfaction".

6-Discussing the study results: The main objective of this study was to verify empirically the relationship between the use of public institution of ICT with the satisfaction of customer of these institutions, where we focused on several aspects of technology which can be given to institutions' customer as well as details and the dimensions of this technology. we have proposed a companion relationship with the use of technology and a set of aspects, which many researchers have tackled the aspect of security and privacy, as well as the quality of the website electronic and service provided. The results indicate that both the use of technology and the rest of the influencing aspects is closely related to customer satisfaction. this research shows the importance of all aspects of technology starting with the extent of the willingness of customers to accept modern and innovative technologies periodically. We also focused on the aspects that accompany the work with technology, where customers pay attention to security and privacy that accompanies their own information, which gives them a feeling of trust and encourages them to deal with the institution and request its services. the quality of services comes only with renewal and modern

technologies to ensure the survival in competition with other institutions. This is what highlights innovation and mobility in terms of ICT to keep up the innovative and renewed aspect and not the rigid and idle side, what makes necessary providing customer with everything new at the appropriate times. The site design also provide a great competitive advantages like the rest of technology's aspects studied. We find that the results of the study correspond to a number of a similar studies in different countries such as (Jashari and Rustemi, 2001) a study was conducted in Kosovo, (J Tan, 2016) a study was carried out in Thailand, (Toor et al , 2017) ,(Ulgan, 2017), (Saviano et al, 2017) in Thailand (C Amendola and al, 2018) it studied the use of ICT in the fashion sector in Italy and other studies. The results clearly show that service providers based on modern ICT, especially e-services, have great opportunities to gain the satisfaction of their customers, maintain their loyalty and perpetuate a superior experience through technology.

7-Recommendations:

According to the results that we reached through this research, we can present a set of recommendations that will positively affect the interest of Algerian public institutions in ICT, and how to develop a technology-dependent strategy to reach customer satisfaction.

-There is an urgent need for more focus to understand the approach to customer satisfaction and ICT in the Algerian public corporation. After that, the potential investments of public institutions in technology-based tools should be evaluated on the basis of a clear vision about the role of technology, its importance to customers, their satisfaction, and their trust and loyalty.

- Algerian public institutions should work to involve clients in planning their technological environment, which gives them an opportunity to gain knowledge, capabilities and competencies that benefit them in using ICT, which also sows confidence of customers towards the institution and its services, from the point of participation in planning and responsibility.

-Those in charge of the public corporation should monitor its websites regularly, takes all necessary corrective measures and keep developing with regards to updating information and empowering new and modern customers, in addition to analyzing customer feedback provided in the form of comments ,notes, rating or

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complaints. As the website is a pivotal source of information and primary link customers and the organization.

-Public institutions should rely on informatics as an information and communication technology tool and use it to reach the best levels of privacy and security to protect personal information and ensure that they are not exposed to information or financial fraud, which represents a major competitive advantage that contributes to gaining the trust and loyalty of customers, and obtaining new loyal customers.

-Public institutions must take advantages of modern ICT to enrich past knowledge about public sector management and governance, and update it from time to time because ICT's are in permanent and accelerating development that must be kept.

-The public institution must include the website and E-services mechanism for customer assessments and opinion on the services provided, in a way that contributes to the attention of end and-customers and potential ones. to facilitate the evaluation process and increase the obtaining new loyal customers.

8-Conclusion:In conclusion, this study explored the link between ICT and customer satisfaction, and we have worked through this research to clarify this relationship in the age of information and communication and open a competition between all types of institutions, especially services, as we discovered that technology plays a greater role than we expected in Public institutions that work to gain customer satisfaction and catch up with other institutions, even private ones, in terms of efficiency, performance and staying in the competition race. Information and communication technology is the foundation of the critical infrastructure within the organization; it promotes the exchange of knowledge and the completion of the correct communication between the institution and the customer, and accelerate the flow of information internally and externally, as we discovered that e-services reduce many stages that disturb customers. The E-services in public institutions work to break all the barriers between the institution and the customer so the later can communicate his views and needs without cost. Therefore the results of the research showed the support of customers to deal with the institution electronically and benefit from its services remotely,

provided that security and privacy are guaranteed which present the basis of electronic services and the most important condition for the success of the institution is its electronic work with customers. Our research also opens the way for further research in the same context, and focusing on electronic marketing in public institutions in Algeria, also ways to develop mechanisms to catch up with developed countries and other large institution in this field to keep in race o competition with private institutions that do not hesitate to make all the resources and technological efforts in order to take control of market and keep customer satisfied and attract new clients.

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