KNOWING THE CITIZEN APPROACH TO ELECTRONIC GOVERNMENT IN TIJUANA, BAJA CALIFORNIA

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Abstract: This article reviews the literature, the main surveys and the international antecedents and the

adaptation to national policies to better analyze the primary information on the self-assessment that citizens have about their perception of electronic government. in the city of Tijuana, Baja California, Mexico. Having as main element the use of Information and Communication Technologies (ICTs) whose main objective is to improve the quality of public services of a particular government and the challenges of local governments. In this case, we sought to answer certain questions such as the following: What is the most common procedure? How long does it take to complete a procedure? What population prefers to complete the procedures online and how many prefer to go personally to the offices? Do you know the procedures offered by the local government online? These are some questions that were addressed to users who went to government offices and that through the research project "Analysis and Opportunities in Baja California: Reaches and Opportunities", With the application of a survey in the

months of August to November 2017 in all the municipalities of the entity, an answer was given to them, this time it is intended to analyze the data obtained from the municipality of Tijuana.

Keywords: Electronic government, Information and Communication Technologies, Technological literacy.

1.   Introduction

The technological transformation has been adapting to different aspects of everyday life, even if it could not be affirmed if technological pressure also changed everyday aspects, what can be affirmed is that the main structure is the government structure, sence these are ones must generate institutionals innovations that be visibles to the users of the technologies of the information. For Mexico the advance has not been very satisfactory, in the report of 2018 from United Nations of the leading countries in electronic government, who despite having support

from the United Nations fund to launch the program " digital prosper" and having a good impact in the promotion of maternal and child health, efforts have not been reflected in other areas.

Therefore it can be assumed that continue like a subject pending in terms of search challenges and the e-government consolidation, more for the politic discontinuity than the unwillingness, this mainly due to the short time of the municipal administrations.

The differents contributions has been made respecto to the e-government theme, have allowed start from a generalization having as mainly pillar the use of technologies, therefore is necessary analyze different definitions: the electronic government is the aplication of Information and Communication Technologies (ICT) of public sector operation, with the objetive of increase the efficiency, the transparency and citizen participation [1].

The electronic government it can define also with a shape that the governments can use the Information and Communication Technologies, that are based on internet aplications, to provide to the citizen and companies an access more convenient to the information and gubernamental services, to make better the quality of the services and bring opportunities to partipate in institutions and democratic processes [2]. The World Bank define the e-government as "the use of Information and Communication Technologies to improvethe efficiency, the effectiveness, the transparency and government accountability" [3].

The definitions mencioned by differents organizations and authors, coincide in the aplication of e-government through the ICT, the government will result in greater efficiency and quality of services before citizens.

2. Knowing the electronic government

2.1 Types of electronic government

Alshehri & Drew [4] mention that electronic government can be classified into four categories:

1) *Government to citizen (G2C)*: corresponds to the initiatives of electronic government that are intended to provide administrative services and the informations to the citizen through the use of ICT, that is, it can perform any service where it have access and at any time, saving time and money.

2) *Government to companie (G2B)*: are the initiatives of electronic government to provide administrative services and information to the companies through the internet.

3) *Government to employee (G2E)*: is an opportunity for the profesionalization and attention of public officials, can be considered as an important element so that an electronic government integration is posible.

4)   *Government to government (G2G)*: refers to online communication to share databases between gubernamental organizations, departments and agencies.

2.2   Stages of development

In the electronic government an evolutionary process is presented that allows classifying it, according to their level of maturity and ther degree of development, in wich there are five stages [3]:

1)   *Emergent*: is the commitment of develop an electronic government, but only provide basic information through of internet.

2)   *Expanded*: the quantity of websites is more is wider and it provide interaction through of more sophisticated means as the search in its websites or the interaction through e-mail.

3)   *Interactive*:   exist   more   presence   of gubernamental organizations in the web, and services

are offered with interaction more sophisticated such as filling and sending electronic forms.

4)   *Transactional*: is when the State offered complete secure transactions safe as the obtaining of visas and passport, born and death certificates, payment of fines and taxes, among others.

In this work it analyze the citizen Approach about the electronic government in Tijuana city, taking into consideration the stages of development, this municipality could posicionate in the stage four "transactional", because the local government portals give information, in the web tab give it the option to redirectionated to the websites of others local institutions, allow filling forms to acces to the information, besides performing some online formalities, in the section 4.1 Some examples of procedures that can be done through the portal of the municipality of Tijuana will be shown.

3. Historic context of e-government in Mexico

3.1 Background

The electronic government it has its beginnings thanks to the internet creation, in which it had its first record of social interactions through a series of memorandum written by Licklider in 1962, he described his concept of "galatic network". Some important events were the following: in 1961 the first paper on packet switching theory was published; in 1965, the TX-2 computer in Massachusetts was connected to the Q-32 in California, using a low-speed switched telephone line, creating the first wider network; in 1966 the ARPANET (Advanced Research Projects Agency Network) plan was created and published in 1967; in 1969 the first host was connected (computer that functions as the starting and ending point of data transfers), later on, there were four hosts connected to ARPANET and the internet began its trajectory; and in the years from 1971 to 1972, network users were able to start developing

applications, it was in 1972 when the first application that was email was introduced [5].

The internet opened to generate new technologies, in this case Information and Communication Technologies (ICT) that are developed from scientific advances in the field of computer science and telecommunications.

The informations technologies has its background previous to the decade of 40´s, some Examples are: invention of telephone by Bell in 1876 and, the radio by Marconi in 1898. Years after World War II there were stages of innovation in three technological fields that are interrelated, all based on electronics: microelectricity, computers and telecommunications [6].

Ávila [7], define the ICT as "the set of tools, supports and channels developed and supported by the

technologies that allow the acquisition, production, storage, treatment, communication, registration and presentation of information, in the form of voice, images and data, contained in signals of acoustic, optical nature or electromagnetic in order to improve people's quality of life"

The first backgrounds of electronic government in Mexico were in the seventies, by Petróleos Mexicanos (PEMEX), Comisión Federal de Electricidad (CFE) y Nacional Financiera (NAFIN), which consisted mainly of the use of electronic computing services that was provided by the Universidad Nacional Autónoma de México (UNAM), subsequently the use of computers were extended to federal administrations. [8].

In federal administrations the changes and the introduction of programs related to the modernization of the administration began to be notorious, during the

six-year period of 1995-2000, the National Development Plan gave rise to the Program of Modernization of Public Administration, this program were coordinated by the Secretary of the Comptroller and Administrative Development, and the Program of Informatic Development, coordinated by the Instituto Nacional de Estadística, Geografía e Informática (INEGI). With this program, national computer projects of an interinstitutional nature began, the School Information Network stands out, the Red Satelital de Televisión Educativa (EDUSAT) and the electronic government procurement system Compranet. While the next period of Vicente Fox (President of Mexico) in the years 2000-2006 there were more significant advances in e-government, from the construction of infrastructure and the availability of services and procedures online, two years later the Presidential Agenda of Good Government had a digital government approach, a short time later the Council of Existing already existed e-Mexico. [8]

In the year 2002, was published the Federal Law on Transparency and Access to Government Public Information, in its Article 1° stipulates its purpose of "providing what is necessary to guarantee the access of all persons to information held by the Powers of the Union, autonomous constitutional bodies or with legal autonomy, and any other federal entity" [9].

In 2003, the Electronic Government and Information Technology Policy Unit was created (UGEPTI), whose purpose will be to promote and consolidate the use and exploitation of ICTs through proper coordination of the actions proposed by the Ministry of Public Administration. In summary, this six-year period sought to link the use of ICT in public management to improve the efficiency and performance of government services and procedures. [10].

In 2006-2012 during the period of Felipe Calderón, in his National Development Plan, he mentioned the inclusion of technology to open enormous opportunities for staff improvement through access to information, and in its axis 2 called Competitive Economy and Employment Generation, technology for economic growth was included for the purpose of sustainable development [11]. In the next administration of Enrique Peña Nieto in the period of 2012-2018, on November 2013 its published the National Digital Strategy, from which progress, achievements and challenges were measured, with the purpose of increasing the digitalization of Mexico to maximize its economic, social and political impact for the benefit of people's quality of life [12].

To the end of his period as a president National Digital Strategy brought some results in Mexico, as the following: in the matter of Open Data, more than 37 thousand databases of 267 government institutions

have been published; the National Single Window has more than 5500 digital services and had 34 federal government mobile applications; In 2018, the service of Birth Certificate online, and in it the procedure of the Professional Certificate [13].

Mexico's performance in the result of international indexes, such as the E-Government Development Index (EDGI) since its application in 2001 until its last survey in 2018.

FIGURE 1. PERFOMANCE OF MEXICO IN EDGI 2001-2008.

Mexico's result in the E-Government Development Index (EDGI)
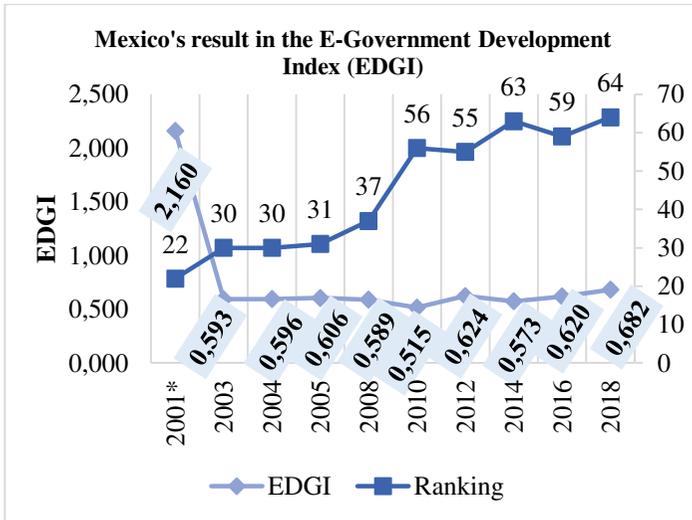
*Nota: in 2001, the quantification was base don a numerical scale from 1 to 5, representing the score of 5 as the largest presence of electronic government.

Source: own elaboration based on UN EDGI, 2001-2018.

The result of EDGI show that in 2018 the presence of the electronic government in Mexico increased, however its position in the low ranking from 59 to 64, thus that it does not mean that Mexico has not improved on the theme of electronic government, but that other countries have achieved greater progress on the theme and achieve a better result in their index. For example, the countries that

are in the first places are: Denmark (0.9150), Australia (0.9053) and Republic of Korea (0.9010).

3.2 Impact of ICT

Nowadays the Information and Communication Technologies are present in all areas, such as in the education, Jobs and the hospitals. An example of them is the schools, recently the students at school have knowledge about the use of these tools, so new generations are presented who become experts in the field and can be called digital natives. [14].

Díaz et al [15], they mention the accelerated development that has occurred in telecommunications and information technology and the proliferation of the Internet, which has influenced all human activities. With this the digitalization spread throughout the world and now it is important to reduce the separation between those who have and those who don't have access to technologies, with a digital divide in society.

Emerging from this a phenomenon of "the social distance that separates those who have access to information and communication technologies (ICT) from those who don't" [16].

Tello [17], considers since the beginning of ICT they were perceived as a social impact that would have an impact on those who have access and those who don't have it, creating differences in development opportunities in the population within all areas. It can see the difference in access in the following graph:

FIGURE 2 ICT EQUIPMENT IN THE HOMES OF MEXICO, 2017.
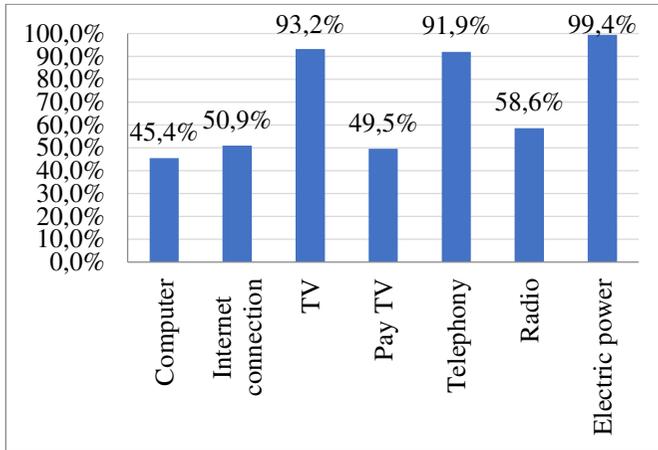
Source: own elaboration based on ENDUTIH [18].

Almost 100% of population of Mexico has electric power, 93.2% has TV, 91.9% has telephony, and as regards the internet connection only half of the population has access to it, in addition to that only 45.4% have a computer in their homes. The latest figures mentioned show the digital divide that exists in the entire Mexican population towards access to information and communication technologies.

3.3 Technological literacy

From the digital era, the social, economic and cultural environment of citizens around the world has

been changing with computer technology. The emergence of these technologies such as access to multimedia, networks, commerce, mobile telephony and the services offered by the Internet are causing citizens to have new training needs for knowledge [19].

The UN [20], recognizes that digital skills can help digital inclusion, therefore, these skills must be taught in schools and public officials must also continue to improve their electronic skills. Even the National Human Rights Commission (CNDH), on International Literacy Day 8 in September 2018, published a statement calling for inclusive digital literacy for more than 4.7 million people who are illiterate. The CNDH points out that "inequality and inequity are directly linked to illiteracy, since this situation occurs mostly among people living in poverty, especially indigenous women, this literacy

process implies the inclusion of men and women to ICT [21].

It is recommended that for an educational model to be comprehensive and work to technologically literate, the development of the following dimensions is required [22]:

1. Instrumental dimension: it is related to the technical domain of practical knowledge of the hardware and software used by each medium.

2. Cognitive dimension: it is the acquisition of specific knowledge and skills that allow searching, selecting, analyzing, understanding and recreating the enormous amount of information that is accessed through new technologies.

3. Attitudinal dimension: the development of a set of values and attitudes towards technology so that it does not fall even in a technophobic position (which rejects them only because they are considered evil).

4. Political dimension: it is the awareness that information and communication technologies are not aseptic or neutral from a social point of view, but that they significantly influence a cultural and political environment of society.

An example in Mexico of literacy program carried out in the year 2014 was the Inclusion and Digital Literacy Program (PIAD), whose purpose was to strengthen the education system by delivering personal devices by promoting the reduction of the digital divide and the use of ICT in the teaching and learning processes [23].

4   Electronic government in the municipality of Tijuana, Baja California
4.1 Electronics services

On the website of the City of Tijuana, in its online procedures section, where 35 procedures are shown with its requirements, however there are still

failures on its website or the information is not complete.

Online procedures [24]:

1. Revalidation of operation license
2. Building permit
3. Revalidation of firefighters
4. Proof No property
5. Certification of descriptive data of the property
6. Completion of work
7. Expansion or remodeling license
8. Citizen assistance
9. Operating license
10. Quick business opening system
11. Land use
12. Firefighters
13. Notice of immediate opening of companies
14. Proof of non-debt (revalidation of plates)
15. Payment of traffic fines
16. Payment of parking meter fines

17. Payment of property tax

18. Printing multiple receipts

19. Fastlane-agile crossing

20. Letter of residence and proof of address

21. Electronic invoice

22. Job bank

23. Payment inquirí to suppliers

24. Citizen complaint

25. High E-purchases of suppliers

26. Acceptance and release of social service

27. Credential application (municipal libraries)

28. Official number

29. Environmental Protection Directorate

30. Adopt a pet

31. Provisional permit (DAU)

For 2018, for the most part, each online procedure the web page redirects to another tab where it only shows the requirements that are needed to carry out the procedure or if it gives the option to pay online, but they are not concluded and it have to go

personally to the offices to finish the process, only with the exception of some such as citizen attention, citizen complaint, electronic invoice, payment of fines if concluded by this means. But in general it is observed that its continue working on its website because when it wants to access a section, an error appears or they simply don't direct to another tab.

Also on the website are the following federal (Mexico) and state procedures (Baja California) [25]: 1) the Birth Certificate, 2) the Single Population Registration Key (CURP), 3) National Electoral Institute, 4) Affiliation to Popular Insurance, 5) Passport Information, 6) Driver's License, 7) License Plate Revalidation, 8) Vehicle Verification Program, 9) Proof of Criminal Record.

TABLE 1. ADVANCE OF ONLINE PROCEDURES

Advance	Number of procedures
It only provides requirements and information	4, 7*, 9**
Generate a date to the procedure	3, 5, 6, 8
It concludes online	1, 2

7* It gives the option to pay online but it also has to go to the offices.

9** There is the option to pay at the ATMS of State government but it also has to go to the offices.

Source: own elaboration based on website [25].

As can be seen in Table 1, the online procedures are not yet as present as in other countries, since only two procedures can be concluded through their website.

4.2 Knowledge of citizen (Results)

Through the E-Government *Analysis Project in Baja California: Scope and Opportunities*, primary

information was collected to know the opinion of citizens in the municipality of Tijuana. With the information collected, knowledge was obtained regarding the willingness of citizen-users regarding the use and understanding of technologies to carry out a procedure.

The different results that were obtained for the municipality of analysis that is Tijuana will be shown below:

FIGURE 3. PROCEDURE MORE REALIZED IN TIJUANA
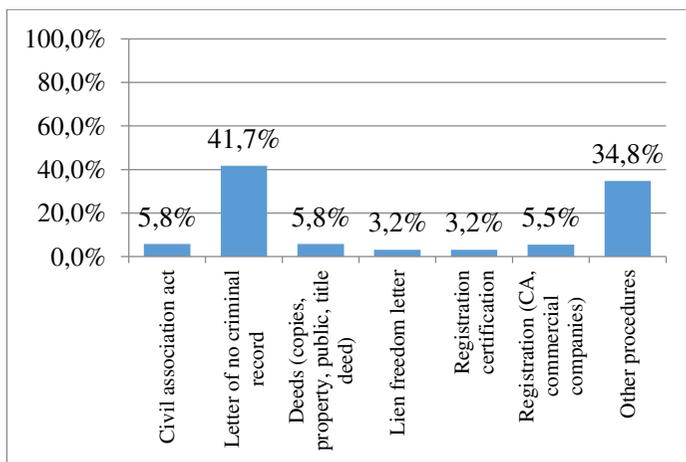
The procedure that was most carried out in the municipality of Tijuana was the Criminal Record Letter, which as mentioned above is not a procedure that is in its portal; However, if the requirements that are needed to do it appear and the payment of this can be carried out at an ATM in the state.
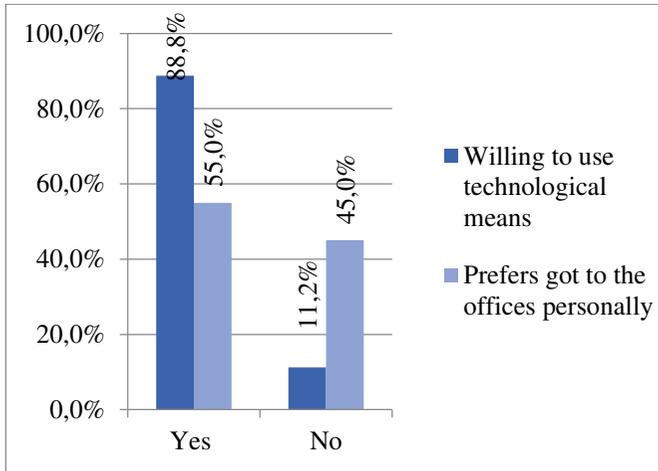
FIGURE 4. TIME IT TOOK TO COMPLETE THE PROCEDURE
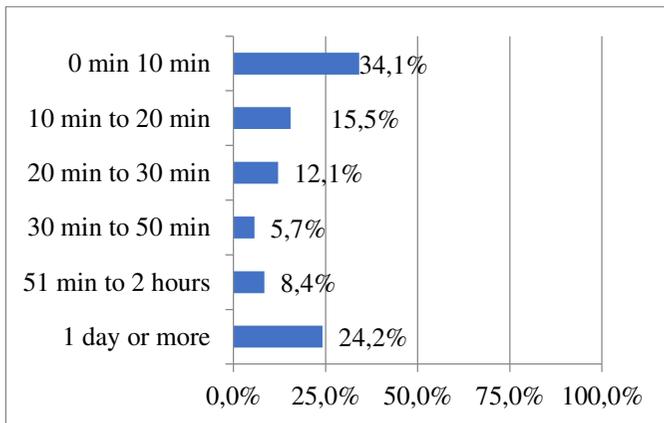
Related to the time it took them to conclude some procedure, as shown in graph 4, 34.1% took from 0 minutes to 10 minutes, expressing satisfaction for the short time used, even those who took 10 to 20 minutes that was a 15.5% of the citizens surveyed expressed the same feeling. Being 24.2% that took more than a day to complete their procedure, they said that this time could be reduced with the introduction and adaptation of technologies in the procedures.

FIGURE 5. POPULATIONN WILLING TO USE TECHNOLOGICAL MEANS VS POPULATION THAT PREFERS TO GO THE OFFICES PERSONALLY

The chart shows a bar graph with categories "Yes" and "No" on the x-axis and percentages from 0.0% to 100.0% on the y-axis.

- Willing to use technological means (dark blue): Yes = 88,8%, No = 11,2%
- Prefers got to the offices personally (light blue): Yes = 55,0%, No = 45,0%

Source: own elaboration with data from Analysis Project in Baja California: Scope and Opportunities.

The 88.8% of the population of Tijuana is willing to use electronic media, this could give a good start to electronic participation and improve the relationship between the government and the citizen. However, there were another 55.0% of people who answered YES, to prefer to go personally to the offices to carry out their procedures, this phenomenon can be due to different factors: ignorance of the use of technology, lack of confidence in the servers of the web, or simply the preference of each person.
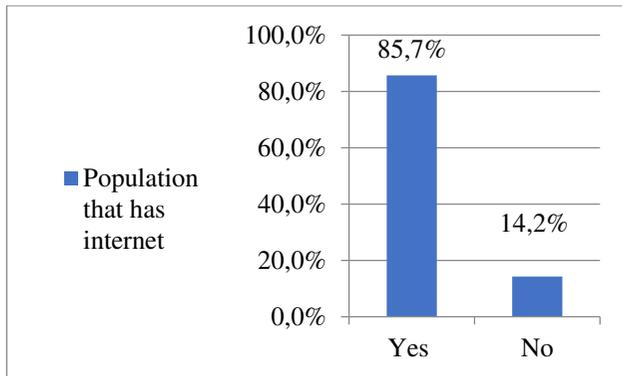
GRAPH 6. KNOWLEDGE OF ONLINE PROCEDURES
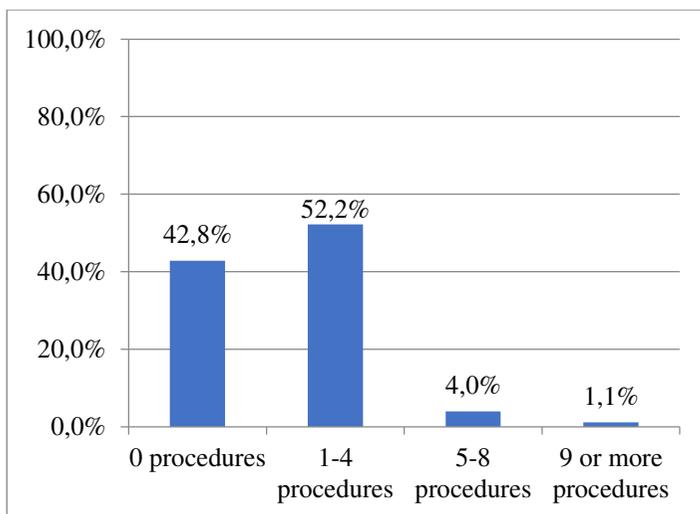
Source: own elaboration with data from Analysis Project in Baja California: Scope and Opportunities.

The 42.8% represents those people who don't know of any procedure that can be done online, this result indicates that there is a high ignorance about the possible procedures that are already in the government portals, it must continue working to promote the interest in them. While 52.2% do know at least one to

four procedures that can be done through technological tools.
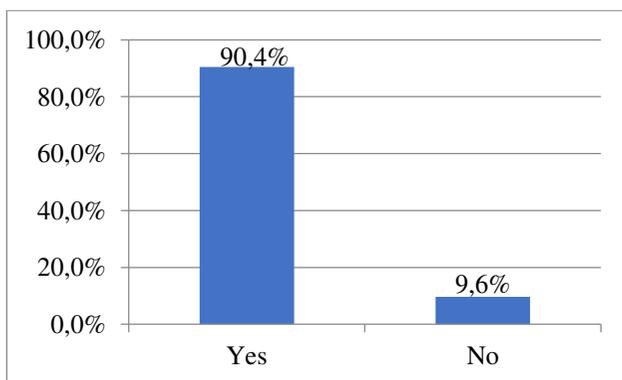
GRAPH 7. POPULATION THAT HAS INTERNET

Source: own elaboration with data from Analysis Project in Baja California: Scope and Opportunities.

Another fact that stands out is that 85.7% of the population of Tijuana has internet in their homes, this is another important factor to continue advancing the construction of an electronic government through

citizens, and 14.2% who don't have access to internet, mechanisms should be sought to include them in this age of technology and promote technological literacy through incremental policies, taking into account that ICTs should be used intelligently and management should be aware that not everyone has the same skills or the same access to technology.

GRAPH 8. POPULATION THAT IS FACILITATED TO USE TECHNOLOGICAL MEANS

Source: own elaboration with data from Analysis Project in Baja California: Scope and Opportunities.

Another positive response is that 90.4% of the population of Tijuana is facilitated to use technological means, having only 9.6%, to the population that responded negatively to this question. The latter were asked the following question: Would you be willing to take a short course on how to use technological means, so that you learn to use them and can perform some of the procedures from the connection point you want? In response to last question, 58.6% was positively obtained and while 41.3% answered no.

5. Conclusions

Although the advancement of information technologies, they are allowing to redefine social, political and business conditions, as regards the the field of public administration there is a lot of work pending.

On the one hand, political phenomena spread mostly and have more social impact, but on the other, they have failed to move in all cases to instruments or mechanisms that make good wishes tangible. For Mexico, according to the results of ENDUTIH in 2018, in its section of ICT equipment in homes, the main changes appear in the internet connection that went from 50.9% to 52.9%; pay television under 49.5% to 47.3%; and the low radius from 58.6% to 56.2%. Even if the changes don't look very high, other political and migratory factors that can generate entropies should also be taken into account when analyzing the data produced by INEGI, however in the case of Tijuana, with an 85% population with internet access, the demand for access to electronic public services are significant and is a challenge for future local administrations. In theoretical terms, incrementalist public policies could be a viable option to give continuity regardless of the political changes

experienced by the City of Tijuana, since recently almost the entire country has taken a 180-degree turn, and governments have positioned themselves with nuances left-wing policies, however, for public services, these political conditions must represent public improvements and non-stagnations, so that confidence in the good quality of public services will be increasingly strong if they are accompanied by elements of social ties, such and how information technologies are being converted with the support of cyberspace.

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