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Diploma Thesis

Dimensions of e-Government in Iran

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Thesis title

Dimensions of e-Government in Iran

Objectives of thesis

The thesis investigates e-Government in Iran. The main purpose is to analyse the process and obstacles of implementing and improving e-Government from the perspective of citizens and businesses in Iran.
The partial goals are:

- To make a current literature review and comparative study on e-Government in Iran.

- To explain how e-Government in Iran is built, and implemented in order to develop efficiency in the government performance, services, and
interaction towards citizens and businesses.

- To recognize barriers of implementing, and improving e-Government for citizens and businesses in Iran.

Methodology

The thesis is based on the author's own research and study of secondary resources such as professional and scientific publications and articles, official statistics, and also with the review of books, conference papers, journals and websites specifically related to e-Government. In the practical part qualitative and quantitative methods will be used. Based on findings in the theoretical part and results of author's own research final conclusions will be formulated.

The proposed extent of the thesis

60 – 80 pages

Keywords

e-Government, Iran e-Government, e-Government barriers, e-government implementation, e-Services, e-Democracy, e-Administration, e-Features.

Recommended information sources

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Declaration

I declare that I have worked on my diploma thesis titled "Dimensions of e-Government in Iran" by myself and I have used only the sources mentioned at the end of the thesis.

In Prague on date_____

ACKNOWLEDGEMENT

Rozměry e-Governmentu v Íránu

Dimensions of e-Government in Iran

Souhrn

V 21. století změnily služby e-Governmentu život lidí v mnoha různých rovinách. E-Government umožnil lidem přijít s jejich denními potřebami v oblasti vzdělání, financí, zdraví atd. V průběhu času začali být lidé více a více závislí na e-Governmentu a jeho službách, jako hlavní nástroj pro ulehčení jejich každodenního života. Z toho důvodu se stal e-Government významně důležitým předmětem studia v různých částech světa. Nicméně, v některých zemích světa, včetně Íránu, jsou překážky, které brání lidem k přístupu ke službám e-Governmentu.

Klíčová slova

E-governement, Íránský e-Governemnt, překážky e-Governmentu, implementace e-Governmentu, e-Services, e-Business, e-Administration, ICT v Íránu, internetová infrastruktura

Summary

In 21 century the e-Government and its services have changed people's life in many different levels. E-Government made it possible for the people to come up with their daily needs in the fields of education, finance, health, etc. As the time goes on people have started to get more and more dependent on e-Government services as a main tool for easing their daily life. Therefor the e-Government has become significantly important subject of study in different parts of the world. However in some countries including Iran there are some obstacles that prevent people from accessing e-Government services properly.

Keywords

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1 Introduction

The topics like e-Government are a chance for developing countries like Iran to improve and facilitate their government's actions and also try to decrease their gaps with developed countries. In recent years, the government of Iran is moving toward e-Government through online world. E-Government is becoming one of the hottest topics among the government officials and that make it crucial to inform the public about this issue since e-Government is a growing subject. Iranians use Internet in their daily lives for different purposes including: online shopping, paying bills, doing research, paying taxes and etc.

The wide networks that connect public, private, and voluntary organizations to each other can't service using the traditional setups of single administrations for single services and specific and limited functions. Cooperation between government organs, internal and external entities can answer to complicated problems of societies and provide the best solutions. In fact leaders and governments have begun to understand the need of being modern and increase and secure their place in the global competition since the traditional model doesn't work anymore. The promise of e-Government is to improve the overall functionalities and businesses of any government; however there are several serious obstacles in achieving this goal. Achieving an efficient and true e-Government is not so easy and sometimes impossible in some cases because of complexity of implementing and maintaining e-Government to promote and rise services.

Developing countries such as Iran with multiple barriers are the best example for this case. These barriers cause many problems in implementing and improving the existing e-Government and stop Iran to reach a well-established e-Government service and features. As a developing country, Iran supports its government agencies and organizations to connect the citizens with the government in order to help citizens and businesses to improve their needs.

2 Objective and methodology

This thesis investigates e-Government in Iran. The main purpose is to analyze the process and obstacles of e-Government services in Iran.

Partial goals are:

- To make a current literature review and comparative study on e-Government in Iran.
- To explain how e-Government in Iran is built, and implemented in order to develop efficiency in the government performances, services, and actions with government agencies and citizens.
- To recognize barriers of implementing, and improving e-Government in Iran.

To achieve thesis objectives, the main method was based on the Linear Multiple Regression Model using SPSS from IBM as a statistical tool. There were 113 respondents who participated in the survey. Then the survey data were analyzed using the Descriptive Statistic Method and the Linear Multiple Regression Model method to verify whether the proposal hypothesis is true or false. In business statistics, there is a significant relationship between two or more variables. The dependent variable was chosen as the time that citizens use e-Government services in 12 months while obstacles were put as independent variables.

In order to reach reliable data, literature review will be used through scientific articles, conference papers, journals, few books, and other sources available on the Internet through search engines such as Google Scholar. The analytical study will utilize methods of analysis, questionnaire survey and statistical analysis of data. Based on the theoretical knowledge and results of the study conclusion will be formulated. In order to achieve more accurate information banks, schools, and hospitals were studied to find out the real conditions and situations of using e-Government services by citizens and organizations in those places.

2.1 Research question

The citizen's usage of e-Government services of each person is under-influenced by different obstacles influencing citizen's usage of e-government services which are divided into the weak IT infrastructure, lack of knowledge and skill among the citizens, lack of knowledge and skill among the public administration staff, lack of strong security policies and laws, lack of access to capable electronic devices (tablets, smartphones, laptops, etc.)

From the main question, we can conceptualize into four statements:

S1: The weak IT infrastructure has a significant impact on the citizen's usage of e-Government services in Iran.

S2: The lack of knowledge and skill among the citizens has a significant impact on the citizen's usage of e-Government services in Iran.

S3: lack of knowledge and skill among the public administration staff has a significant impact on the citizen's usage of e-Government services in Iran.

S4: The lack of strong security policies and laws has a significant impact on the citizen's satisfaction of e-Government services in Iran.

S5: The lack of access to capable electronic devices has a significant impact on the citizen's usage of e-Government services in Iran.

3 Literature review

3.1 Definition of e-Government

E-Government consists of several online interactions such as:

- Government to government communication (G2G), including agencies intercommunication, and interactions between various government organizations. The government electronic administration or G-to-G, has the goal guiding the government and following it in the process of policy making through implementing of information and communication technology.

- Government to citizen (G2C), including relationship between organizations of administration and a citizen. This relationship explains the information is required by a citizen in life.

- Government to business (G2B), consists of government relationship and communication with private business sectors.

E-Government connects people to people, people to business, and people to government. The different digital government applications are referred to as e-Government interactions. The applications of various e-government interactions include e-Administration, e-Business and e-Services. These applications describe the levels of interactions that define relationships between the government and the respective stakeholders.

The main purpose of e-Government are:

- Offering effective delivery of public goods and services to citizens.
- Creating good governance mainly promoting a clear and responsible government.
- Increasing the productivity and efficiency to improve situation and minimize the expenditures.
- Promoting economic sectors.

3.1.1 E-Administration

E-Administration focuses on politicians and employees and the way businesses and agencies can be combined and get together in order to facilitate and to present activities more efficient and easy to approach. E-Administration explains how the citizens' needs is increasing on service and it deals regarding to modernization of external and internal ICT aids in order to build better integration average different systems. Basically, it acts about changing methods and systems and to build access to information, democracy and services on easiest ways, therefore not only through computer. It focuses on the intern connection within and between various governmental organizations.

Skilled human resources is needed for moving towards an electronic administration. Some countries are poor in this regard and therefore there are needs for attention and actions by the authorities.

3.1.2 E-Business

E-Business in the information and technology (ICT) application supports business entities, citizens or any other legal entity with which the government has a business interest. E-Business (electronic business) is the behavior of business processes on the Internet. These processes include buying and selling products, supplies and services, servicing and satisfying customers, processing fees, managing production control, collaborating with business partners, sharing information, running automated employee services, recruiting, and more.

3.1.3 E-Services

E-Services focuses on citizens, the business community and aims to make interaction with citizens, businesses, government employees, government agencies and other governments more comfortable, friendly, transparent, effective and in not expensive way. In the other words the citizens have possibility to require for a specific government service and then receive that government service through the Internet or some computerized mechanism and can reach the services and the information through these electronic channels. Obviously, the effectiveness of public organizations and their interaction with the private sector and civil society depends fundamentally on "people". An efficient e-Service management system is thus required, as it can lead to improved motivation, effectiveness and hence, better services to the private businesses and the public in particular. (1) (2)

3.2 E-Government benefits for Citizens, Businesses and Public sectors

Growth of new technologies and decreasing the price of communications and computing has changed people's daily life and the way of using technology. Services have been updated and replaced with older services.

E-Business has helped and changed the e-Government in the way businesses can work inside and outside a country. These operations are made in order to make the country a suitable place for doing online business and making profit. Although, most of countries especially developing countries compete with each other in terms of their country performances and policies in order to be one of the best in the world in terms of global business processes and citizens satisfaction, if functions and procedures of e-Government work properly, the internal businesses of government can gain profit. Profitable and beneficial business transactions within country or abroad can grow the country's economic power compared to other countries in the world.

If e-Government is properly planned, designed, and implemented, it can flawlessly profit the citizens, businesses, suppliers, and public sectors in terms of the service availability, accessibility, quality, and delivery. Therefore e-Government services are able to increase and amend the operations of the businesses, suppliers, and public sectors, while citizens can benefit from these services in order to request their government demands to these services and achieve a fast, proper, and solid government service. (3)

3.2.1 E-Government usage by firms and citizens

Based on the measurement and statistics the amount of using e-Government services by citizens and businesses are different. A wide range of basic services is available in almost all EU28+ countries.

The 2015 edition of the "EU e-Government Benchmark Report" shows online business services are generally more advanced and more widely adopted across Europe. In addition, the gap that exists between the top-level benchmarks of the citizen and business life events has increased since last years. The average of this gap is 11 points, and is considerable that this average is (15 points) in the cross-border mobility benchmark.

The fact that business life events are more advanced suggests that governments are generally prioritizing the digital provision of services dedicated to companies and entrepreneurs, and thus seem to be focusing their efforts in response to a stronger demand from this target. This may also be because of the continuous attention at political level to the quality and effectiveness of the Points of Single Contact – even though these can also still improve.

Citizen-oriented digital services may be less widely available because they have intrinsic factors of complexity: these services target the whole population, which is extremely diversified, and has to deal with groups at risk of being excluded from an increasingly digital society. (4)
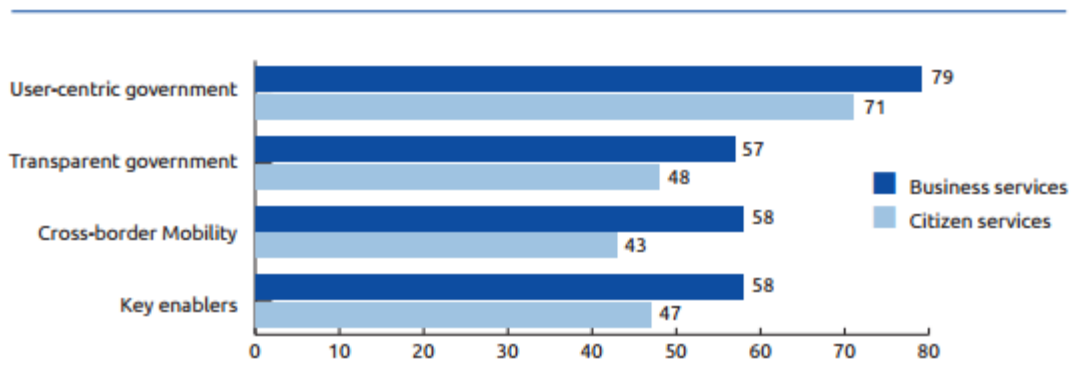
Figure 1: Comparison between Business and Citizen Life Events, top-level benchmark, EU28+

Source: (4)

3.3 About Iran

3.3.1 Government of Iran

The Islamic Republic of Iran is located in Middle East in the north of the Persian Gulf and south of the Caspian Sea. Iran is 1,648,043 (sq km) and its population is approximately 74,196,000. Iran has the second-largest economy in the Middle East and is a large western Asian country in the Middle East.

Iran is neighbor with Armenia, Azerbaijan and Turkmenistan from north, Pakistan and Afghanistan from east, and Iraq and Turkey from west. In addition, it borders the Persian Gulf, across which lie Kuwait, Iraq, Saudi Arabia, Bahrain, Oman, Qatar and the United Arab Emirates. The official state religion of country is Shiá and its official language is Persian. The history of Iran traces back to six thousand years ago and in the course of history Iran has been known for its special geopolitical situation in Middle East. Iran is a country with different languages, traditions, beliefs, and ethical groups. Various languages are used in Iran; however, the national language is Persian.

The demand for a democratic system was created 100 years ago in Iran's history. People of Iran always demanded democracy and human right and in pursuit of that they made revolution in 1979 which did not really changed their situation.

Government of Iran is formed, based on the Islamic laws, that's why it is called Islamic republic, and the Iranian constitution is based on religion. The president of Iran is elected every four years with election. This is while the first powerful figure in Iran is supreme leader who has a lifelong role in political system of Iran and is not electable by people.

The Majles, or National Assembly, consists of 290 members elected every four years. The members are selected by direct and secret ballot from among the candidates approved by the Council of Guardians. In 1988, the Council for Expediency was built in order to resolves governmental and legislative issues and regulations on which the Majles and the Council of Guardians should follow. According to Council laws that expounded constitution, if the laws and rules are disagreeable with the Islamic ideology and law, it is back to the Majles to be reconsidered. In 2005, it was announced that the Expediency Council would have responsibility for general supervision of the system, though that has not resulted in any noticeable change in this institution's day-to-day authority or operations. However, in parliament of Iran, all laws and regulations pertaining to "civil, penal, financial, economic, administrative, cultural, military, political and other spheres must be based on Islamic criteria". (5) (3) (2)

3.3.2 Economy of Iran

Before revolution Iran's economic growth was rapid but after the revolution it slowed down. Although the economic gap between people decreased in comparison to the time before the revolution in which most of the wealth was in the hand of only a few. The economic activities and situation got worse after the happening of war between Iran and Iraq and the oil prices decreased. After the war with Iraq ended, the situation began to improve: Iran's GDP grew for two years running, partly from an oil windfall in 1990, and there was a substantial increase in imports. However, Iran had suffered a brain drain throughout the previous decade and wartime policies had resulted in a demographic explosion.

3.3.3 Political Situations of Iran

After revolution Iran has faced many difficulties such as the eight years of war with Iraq which affected on political and economic situation of Iran. Most of the people believe the eight years of war has slowed down the speed of Iran's progress. They also believe that without this war Iran would be a much more progressed country.

The constitution was formed based on the Islamic ideology after revolution. There are different ideas about this issue regarding the progress of the country and people of Iran. Also it is difficult for many countries to deal with the Islamic constitution of Iran and this causes Iran to loose many advantages and opportunities for enhancing its political situation. Many citizens in Iran are not satisfied with laws of the regime and were not able to get used to the restrictions. The regime of Iran has spent more time on building restrictions in order to control the users rather than building technological fundamental structures. All these problems occurred after the revolution when the Iranian regime started to make decisions built on Islamic ideologies.

From the political point of view the parties which are leading the country are divided into two parts. The first party are the conservative which have root in the fundamental of revolution and the second party are the reformers which have constantly been trying to bring changes and globalize the country. Currently the government reformers party lead by President Hassan Rouhani is in power and it has created new hops for reforms in the country. (6) (3) (2)

3.3.4 ICT in and its progress in Iran

ICT programs can cut the corruption from the country by the means of promoting good governance, strengthening reform-oriented initiatives, decreasing potential for corrupt behaviors, increasing the connection of government employees and citizens, allowing for citizen tracking of activities, and by monitoring and controlling behaviors of government employees.

Thus, Iranian government decided to adjust a detailed and comprehensive ICT Application and Development Plan in July 2002. The name of this plan is TAKFA and considered a significant and effective step in the field of IT industry in Iran. The plan was prepared after hours of professional efforts. This plan was a critical beginning for Iran ICT development. It might be interesting and worth to note that such comprehensive ICT plan was prepared in Singapore in 1992, US and Vietnam in 1993, Japan in 1994, Canada in 1996, Ireland in 1997, and Malaysia and Iran in 2002. (3)

3.3.4.1 TAKFA plan in Iran

TAKFA is a complete plan for ICT (Information and Communication Technology) which aims at building an integrated system and process and includes concrete and complete purposes. TAKFA plan has been established in the main frameworks of legislating fundamentals for human resource development, cultural and social, governmental services, developing economical and commercial services, building national infrastructure, information network, law, security, industry and employment. Theoretical framework of TAKFA plan is according to international institutions working in the field of information and communication application and its main concept is using information and communication technology in various sectors of Iranian community.

The major activities of TAKFA include:

- Investigating ICT progress in other countries.
- Paying attention to the national strengths and weaknesses in order to make sure that the national agenda is realistic.
- Environmental scanning at the international level in order to choose the right model for Iran's ICT development process.
- Design and establishment of an executive organization to handle the complex task of steering and managing the projects.
- Developing a very clear and modern budget allocation engine to ensure that TAKFA is not hampered by traditional and bureaucratic budgetary procedures.

TAKFA Laws, Policies and Regulations include:

- Making the law of copyright
- Protection regarding foreign investments
- Easier and suitable methods for awarding contracts
- Making regulation that stated that all national projects should be given to association of Iranian and foreign companies

TAKFA Objectives include:

- Building infrastructure for ICT growth in Iran.
- Applying universal and detailed system of information and communications.
- Enhancing experts and skilled employees.
- Extending ICT skilled people (Human Resource Development) and organizations.
- Developing and enhancing ICT programs and projects.

TAKFA Plans include:

- Plan to build and perform e-Government.
- Plan for supporting ICT programs and applications in education and developing the IT and ICT skills in human resource in Iran.
- Plan for developing ICT education in higher level of education
- Plan for developing and expanding ICT programs in hospitals, health centers and medical educations.
- Plan for using ICT in higher level of economy, banks, trade and commerce.
- Plan for expanding use of Persian language in computer applications.
- Plan to build more ICT organizations in order to increase citizens to get connected to ICT and its development.
- Obtaining government domain.
- Obtaining domain for industry.
- Plan for developing the trade services.

TAKFA Initiatives include:

- Building more IT and ICT universities or schools and research institutions.
- Developing the growth network or institution such as Ministry of education
- Extending ICT education in schools
- Implementing and extending ICT system in clinics and hospitals.
- Implementing digital libraries.
- Implementing online portals and websites in order to access the services and information. (3) (7)

3.4 E-Government in Iran

Although the e-Government in Iran does not yet have a dependent authority but it is active in some fields. There are about 1000 governmental websites despite all the lacks which exist in official digital informing in the web. The e-Government offices which have been made in different parts of the country are offering different types of services to the citizens and this is a step forward in giving electronic services to the Iranian citizens.

Devoting tens of millions of dollars through the TAKFA project to the private sections with the purpose of increasing the quality of the economical and scientific foundation of the private section in IT, has an indirect effect in developing e-Government in Iran, but the e-Government in Iran is suffering of being back warded in comparison to the other western countries. In this section the progress of e-Government in Iran and its plans have been discussed.

3.4.1 View, Targets, and Strategies

The view of e-Government demonstrates how it will look like in the future. As of this time, this vision of e-Government of Iran is: "Becoming the first country in the Middle East by fully applying ICT in government processes to improve information and services delivery to citizens and businesses". Iran and other countries situation and e-Government targets and plans have been studied in order to place the targets.

Therefore, the targets for e-Government implementation in Iran are as follows:

- Building a clear view
- Making sure all people in cities and villages have access to Internet and e-Government service
- Providing convenient access for all to government information and services
- Improving public services and providing integrated ones
- Downsizing the government and increasing its flexibility
- Promoting social welfare, awareness and knowledge in the society
- Declining bureaucracy throughout government processes
- Encouraging people's participation in government
- Increasing government efficiency and effectiveness

For achieving these purposes e-Government has a lot of challenges. Therefore, smart strategies should be set and positioned. To define strategies, we have considered not only the goals but also the restricting and enhancing parameters. These strategies are as follows:

- Concentrating centralized management of e-Government

- Reengineering government processes

- Promoting IT training among people

- Enhancing financial resources

- Encouraging private sector to support e-Government related projects and creating a competitive environment

- Defining, approving and issuing the important standards

- Defining, approving and executing the required regulations and procedures

- Benchmarking from successful e-Government projects

- Preventing digital divide

- Developing and increasing the Government Network

- Promoting the culture of using ICT among people

- Delivering and integrating government services and information electronically

- Developing necessary mechanisms for government-people interaction

3.5 E-Government and its progress in Iran

One of the most important issues of information communities is e-Government. E-Government means providing an environment in which all the governments be able to offer their services to their citizens 24 hours a day. E-Government in Iran is a path to transform and reclaim the economic, social and political relationship between citizens and government. In order to have a prosperous e-Government evolution and progress, the managers in the government agencies should be able to confront with e-Government challenges in an effective way.

Since 2000 Iran has had a lot of progress in e-Government plans, strategies, and activities. With the struggle of government authorithies and professional human resources, e-Government has succeeded to be more careful and detailed on the services they are offering to people and activities to perform. Most of government organizations and Iranian ministers have created their websites in order to present their services online as part of e-Government development and also most of their websites are in English as well. After experiencing many political, historical and economical changes during last decades, people and government proved their knowledge, capability and skills for progress.

In recent years, in order to extend IT field, Iranian government gave to public organizations and state companies increased budgets. In 2001 the first budget, which was about US$160 million, was allocated for the purpose of developing ICT industry. Annually this budget has increased and it was considered to spend three-fifths of this budget for SW and HW equipment and also commercial general information network, and the rest was spent on employment generation through IT. (3) (8) (9)

3.5.1 Examples of implemented e-Government services in Iran

In recent years government of Iran and the authorities are trying in achieving ICT programs and technologies in order to form a good relationship between the government and citizen in best possible way. For the purpose of reform in e-Government the authorities must mainly focus on issues related to the citizens. With regard to the number of young population of Iran it is obvious that most of the young population are going to get help from electronic services in educational purposes. Therefore the government has to provide e-Services to the young people and students. From the other side since most of the health and care services is dominated by the government, therefore, it is understandable that government devotes a considerable amount of effort to provide the patients with the required electronic administration services. In addition to health, almost all the financial institutions and banks in Iran act under the control of government. Therefore it is the government who takes care of electronic services for the activities of all financial institutions and banks.

E-Government Service Examples in Iran are as follows:

3.5.1.1 Education services

In recent years the government authorities have expanded the activities in the field of education. Almost all universities are applying e-Government in Iran. Students are able to use online registration and enrollment, online payment of tuition fees and online exams. Almost all the universities have the capacity of exchanging ideas and suggestion for the students. All these suggestions and ideas are reviewed by government organization. Students can comment in the website about the performance of the professors and other issues.

3.5.1.2 Finance services

In Iran, the banks have increased the activities in the field of online banking for the citizens who have bank accounts and can benefit from services of online banking. Finance services include different forms of payment such as wire transfer, cart payment, express payment. Other than that the finance services can also include creating account summary of deposit and withdraws, mortgage services and consultation in the field of tax advisory. The reason for people's interest in online finance services is the fact it saves a lot of time and is different from the classic way in which the clients had to refer to the banks personally in order to receive any kind of financial services.

3.5.1.3 Health care services

Use of e-Government services in hospitals, health centers, and clinics have become more common. Patients can visit doctors, get admitted, and buy medicine from these medical institutions. By the means of online services people can arrange medical consultations with doctors. The payments process have become more efficient and faster when its online, doctors' appointments are made faster and flexible through websites, and patient's discharges are now easier than before when every charges related to the patient is computerized. Also, health insurances are easier to be obtained and used when it's required. (3) (2)

3.6   Obstacles of e-Government process in Iran

In the past few years e-Government implementation and improvement in Iran has received the interest and attention of government authorities, policy makers, and businesses. There have been many e-Government actions in recent years. E-Government in its current level is promising some significant opportunities to amend the businesses implementations, citizen service quality, and government tasks. However, this perspective is under some serious obstacles. To get rid of all these problems and obstacles we will need a special kind of leader who is willing to get involved and begin some changes by some factors such as budget, and skilled human resource.

3.6.1   Obstacles

The obstacles of implementing and improving e-Government in Iran are divided into nine different categories. These nine categories include:

- Information Technology infrastructure
- Lack of IT and ICT skills and knowledge
- Social and cultural
- Legal
- Security and safety
- ICT operations in government agencies
- Society and Economy
- Labor force
- Market of SW and HW

Also, each category includes some obstacles. For the first category which is IT infrastructure the related obstacles include weak Internet connectivity, hard accessibility to Internet, limited accessibility to government websites, problems in banking system and e-payment, weakness in Telecommunication infrastructure and connecting schools and universities to the national Internet and network.

The second category is about IT and ICT education among people in Iran. Its obstacles include lack of IT education and computer among citizens and government employees, lack of knowledge in English language among citizens and government staff, lack of legal schools and academies regarding to IT, and ICT training, poor understanding of citizen and government employees in using e-Government and lack of Persian language websites and applications.

The third category is about social and cultural situation in Iran. Its obstacles include lack of confidence among employees in the government and citizens in dealing with e-Government services and transactions, resisting of government employees against the new changes, lack of government employees and managers ability in dealing with the high speed of IT and new technology changes and the government employees have resistance toward paperless jobs and more tend to paper based jobs.

The fourth category is about legal situation in Iran. Its obstacles include lack of strict rules to support e-Government implementation, lack of powerful security policies, lack of knowledge in copyright laws and its application, lack of money for buying suitable hardware and software for implementing e-Government and developing it, no strong strategy and budget allocation in order to establish fast and reliable Internet network in the international organizations, weakness of government in finance for training the government employees and lack of large investment for building ICT centers and applications in addition to banks systems in order to establish efficient e-Payment.

The fifth category is about security and safety situation in Iran. Its obstacles include lack of sufficient codification of the critical information and using digital signature and lack of citizen, and government employee's network security experience.

The sixth category is about ICT operations in government agencies situation in Iran. Its obstacles include lack of concrete ICT plan in some agencies and lack of appropriate and enough web-based applications

The seventh category is about society and economy conditions in Iran. Its obstacles include high cost of education of ICT and IT fields, high cost of hardware and software, lack of training in rural areas and lower level of national income compared to developed countries.

The eighth category is about labor force situation in Iran. Its obstacles include low salaries for the IT and ICT expertise and emigration of expert and educated people to foreign countries.

The ninth category is about Market of SW and HW situation in Iran. Its obstacles include lower quality of in-house hardware due to the lack of technology and international technology and hardware components exchange, Lack of essential expertise among in-house hardware producers, no purchasing power of government in order to buy expensive systems and software and lack of importing and exporting hardware and software

3.6.2 Strategies for minimizing the obstacles

Iran faces many obstacles to develop a successful e-Government by means of implementation and improvement. But, Iran can follow strategies which decrease these obstacles. These strategies are given based on the obstacles we categorized. These strategies are as follows:

The strategies which should be considered for first category include developing IT activities and tasks in IT department of the organizations, more accessibility and availability for citizen and businesses in using e-Government services and company websites, more reliable and faster Internet connection, hiring more specialist IS analyst, IT, and network employees, increase the purchasing power to offer faster Internet connection and network access, developing the availability of broadband access,

Increasing the accessibility to electronic mail and more and easier website availability to business promotion.

The strategies which should be considered for second category include increasing the citizen, government and government organization employees awareness toward IT and ICT, allocating budget for building IT and ICT education centers, hiring different type of IT and ICT employees with their special skills, increasing the familiarity of staff to e-Government concepts, increasing the online sources and information for self-study and self-training, increasing young and skilled employees, more use of IT and ICT applications and increasing the Farsi language websites for the purpose of training.

The strategies which should be considered for third category include building confidence of citizens and motivating them by education, declaration of IT and ICT plans, and e-Government development in Iran, Increasing the use of mass communication channels to increase the awareness of the citizen about the benefits of IT, ICT, and e-Government, holding seminars and workshops about the advantages and benefits of IT, ICT and e-Government, familiarity of citizen, businesses, and government organization with the IT, ICT and e-Government benefits, making citizen and employees believe in what IT and ICT can do to enhance their everyday tasks and upgrading the employees about the IT and ICT development and a new technology.

The strategies which should be considered for fourth category include building secure and strong regulations and policies, guaranteeing the privacy of the businesses, citizens, and government data and creating strong laws in order to protect human rights.

The strategies which should be considered for fifth category include increasing the level of user satisfaction toward the user data security, codification of information and using digital signature, enhancing the citizen, businesses, and government organization awareness regarding to obtaining network security.

The strategies which should be considered for sixth category include using different kinds of software and ICT applications in the agencies, applying different databases in the agencies, existence of Local Area Networking (LAN) in the majority of government agencies, existence of Wide Area Networking (WAN) in some agencies, the linkage between government agencies and Internet, providing information services throughout Internet and mass communication channels.

The strategies which should be considered for seventh category include tendency among young people to use Internet and new technologies, equal income and wealth among people in the country, making the national income higher, making the national communication better for exchanging technology and knowledge, bringing the amount of poor people to a lower number, and increasing the Internet accessibility and availability by every person and making more national transactions and businesses relationships.

The strategies which should be considered for eighth category include increasing centers and institutions for training, increasing salary of IT and ICT fields, more courses of IT in universities, acceptance and attract more IT students, satisfying the IT and ICT professionals in the country in order to make them not leave the country, increasing IT and ICT experts in the businesses, and government organizations.

The strategies which should be considered for ninth category include more training and encouraging student to learn software, more producers of software in Iran, increasing the budget of the country and foreign currency in order to import software from foreign countries, reducing the price of computer hardware and software and more hardware technicians training and more branches of brands.

The obstacles which was discussed prevent the government authorities to be able to develop, implement, and improve more of e-Government services. Accordingly, for overcoming the obstacles, these strategies have been discussed in order to be implemented and act as the supporting tools in the implementation and improvement of e-Government. (3) (10) (11)

3.6.3 E-Government solutions for overcoming the obstacles

For the purpose of overcoming the obstacles and limitations, government and government organizations who have all the power and control of the central management system should create an environment that all functions, coordination, activities, and processes combine and work together at the same time. Therefore, government authorities with the help of government organizations should be able to create solutions and guidelines to the e-Government obstacles in Iran. These solutions include: The authorities should have enough IT infrastructures. Also there will be need of experienced professionals and experts to be able to choose the proper needed IT infrastructure. The infrastructures have to be reliable and possible to update. Applying the communication network and facilities, fast and reliable internet connectivity, and providing efficient PCs to government and government organizations is crucial.

Most importantly, at the top of e-Government activities stand the well-educated and expert managers and workers of government organizations who are working for development of e-Government in Iran. That is why focusing on educating and training of managers and workers is extremely important. Keeping the collaboration with commercial organizations for IT and ICT education is necessary to be arranged. Government authorities need to consider to prepare and offer training courses about e-Government in meaning and use of services. Therefore, schools, colleges, universities, and private training centers are the most suitable centers for educating and training people.

Few solutions can be offered for legal obstacles. Responsible government body needs to adjust regulations regarding the copyright laws, security policies, and law, helping e-Government actions and its development in future. On the other hand, strict laws and policies and security should be created in order to support the bank payment and credit cards of the citizens. In addition, using digital signature for enhancing and improving security for users who use e-Services can be recommended.

It must be mentioned that when it comes to social and cultural issues, governments should focus on building confidence for the citizen, businesses, and the government organizations on using the internet and e-Government services in order to encourage them to more interact and benefit from the e-Government services. In addition, deletion of conservatism behavior and encouraging and supporting managers and employees to welcome and apply the new opinions and inventions in order to build a developed and proper working place.

The other solution is arranging seminars and workshops about e-Government and its benefits for government employees, businesses, and citizen and enhancing their confidence and knowledge on how the e-Government services can be useful for them in daily life.

To make ICT, and e-Government work, government authorities should create good connection and communications between government agencies for the purpose of enhancing the level of agencies interactions and information exchange, and employees' connection. More ICT master plan and applications should be created and utilized. Proper ICT technologies should be applied. Therefore, choosing the proper ICT applications that can be updated in future should be taken into consideration.

In addition, for developing and enhancing Iran's economy there should be a plan to create much more national communication and relations. Interaction between Iran and other countries help the country to gain many advantages in information and technology that would possibly affect the economy and as we know, economy plays an important role in developing e-Government in Iran.

The number of emigrants who are skilled and young educated individuals is increasing every day. One of the reasons that these people are leaving the country is the pressure that they have to bare due to the low salary in comparison to other parts of the world. Good and unique projects can make money. Therefore, by assigning as many as unique projects to those experienced and skilled people, Iran can increase their salaries and make these people satisfied.

In order to achieve advantage and benefit more from international market, the Iranian government should be more active in making international contracts and agreements with other countries which are proven to be skilled in production of HW and SW. Iranian governments also should minimize or remove the strict and unfair laws and policies for the purpose of being able to use opportunities of importing and exporting SW and HW. (3) (11)

3.6.4 Building a Real e-Government in Iran

Lack of IT and ICT education and skill among citizens and employees is a crucial issue which prevents Iran from development in e-Government. Lack of education centers and un-proper education causes people's lack of knowledge and ability to deliver the proper e-Government services to citizens. Organization managers should be expert, skilled, experienced, and well educated to be able to establish strategies. Therefore, being educated and trained in the field of IT, ICT is very important and critical for the development and improvement of e-Government. Therefore government authorities and government organizations should pay a lot of attention to this issue.

In order to succeed in e-Government projects and implement those project, strong leadership skills is needed. Incomplete knowledge and understanding of the leaders and decision makers about the importance of the projects causes the e-Government applications fail. In order to be qualified to direct the e-Government projects and achievements, leaders should have an extensive realization about the e-Government principles, strategies, project management, market chances, role of innovation, change management, and budget management. Therefore, the other factor that government authorities of Iran should focus and give attention in order to implement and develop qualified, effective and satisfactory e-Government services and projects is leadership.

Information systems are the important tools for e-Government implementations and improvements. Without a suitable information system the projects of e-Government can fail. E-Government projects and services need efficient information systems and business systems which can make the e-Government tasks easier, increase quality of service, minimize service delivery, and increase users' satisfaction. Therefore, Iranian government authorities need to give more attention and improve their information and business systems in order to amend their e-Government services and tasks.

For implementing e-Government projects, complete understanding on what is exactly going to be achieved in this implementation is very important. Also the implementation of these projects and services have to be in a way that it does not lead the project or services to have incomplete process and operations. In order to amend the e-Government implementation information systems, IT infrastructures, and technologies should be well selected, designed, and implemented. All these changes come when Iran authorities grow their effort, skills, and attention on making as effective implementation of e-Government as possible. These changes will also help to decrease the costs of the government when effective implementation is performed and there is no need to spend money on re-implementing.

The most important sight of e-Government is trust. Trust causes peace between citizens and government and help them to use government websites and services. For future participation of citizens, government authorities in Iran should increase the level of citizen trust on using e-Government services online to be able to improve the quality of services that they provide for the citizens.

3.6.5 Next plans for improving e-Government in Iran

Currently IT and ICT education and training are taught in the high schools and universities. In the next few years these education and training will be carried out in the broader range. Elementary schools and kindergartens have started paying attention to basic education and training children in the field of IT and ICT. Government organizations, citizens, and businesses will be able to have more technical and advanced

Education. For citizens with higher age, IT, ICT, and e-Government free courses will be mandatory. More IT, ICT, and e-Government training centers will be built for citizens in order to train them and increase their awareness in these fields. Therefore, it is supposed that people of Iran will be trained and familiar in the fields of IT, ICT and e-Government in next few years and be able to benefit from the services that e-Government of Iran prepares and provides them with.

Next national development plan in Iran is ICT. E-Government services availability, accessibility, and quality are planned to grow by means of more IT and ICT achievements. More ICT centers will be built in rural areas to help and meet the citizen government needs. New technologies are engaged with e-Government projects and services and the ICT applications. In order to simplify government performances and have faster delivery of services for citizens more software will be developed and used in addition to variety of new and updated hardware. And also there will be faster and reliable government, citizen networks and businesses. They are supposed to be secured, upgraded, and more databases to properly save businesses, government and citizen information. From the other hand internet connections are getting more rapid and more low cost, therefore in near future, internet connection can be accessed anywhere in any place free of charge.

Thus, m-Government could possibly be the next generation of e-Government in Iran. Currently, e-Government services are being made through mobile phones by the government authorities who are encouraged to do that. Few services are planned although m-Government is not yet implemented. It's a long way for Iran to achieve m-Government. In order to create changes, government organizations, government authorities and businesses are willing to perform based on their innovative ideas. (12) (3) (13)

4 Practical Part

The practical part is to determine how obstacles of using e-Government influence the citizen's usage of e-Government services.

In order to measure the satisfaction levels with e-Government services in Iran, a questionnaire survey will be used. Those questions are in English and will be asked from random citizens who live in urban and rural areas of Iran. There were a total of 113 respondents who participated in the survey. From the survey, gathered data will be processed with SPSS statistic software of IBM.

4.1 Hypothesis

By using SPSS software of IBM, the function of statistical relationship will be created with the correlation equation:

$$Y = a*X1 + b*X2 + c*X3 + d*X4 + e*X5 + const.$$

Where Y is citizen's usage of e-Services, X1, X2, X3, X4 and X5 are independent factors as following of weak IT infrastructure (X1), lack of knowledge and skill among the citizens (X2), lack of knowledge and skill among the public administration staff (X3), lack of strong security policies and laws (X4), lack of access to capable electronic devices (X5). A, b, c, d, e and const. are the correlation coefficients, which indicate the statistical relationship between independent and dependent variables

For the hypothesis testing, p-value stands for the probability level of each correlation coefficient in the equation. If the p-value is higher than 0.05(5%), the null hypothesis will be accepted as the statement "there is no statistically significant relationship between two variables"; however, if it is less than 0.05(5%); the null hypothesis will be rejected as the statement "there is a statistically significant relationship between two variables".

Five main statements from the research questions:

S1: The weak IT infrastructure has a significant impact on the citizen's usage of e-Government services in Iran.

S2: The lack of knowledge and skill among the citizens has a significant impact on the citizen's usage of e-Government services in Iran.

S3: lack of knowledge and skill among the public administration staff has a significant impact on the citizen's usage of e-Government services in Iran.

S4: The lack of strong security policies and laws has a significant impact on the citizen's satisfaction of e-Government services in Iran.

S5: The lack of access to capable electronic devices has a significant impact on the citizen's usage of e-Government services in Iran.

4.2 Data Analysis

The data from the survey were analyzed using SPSS with descriptive statistics method and Linear Multiple Regression Model.

4.2.1 Results of the survey

Gender

Gender

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Male	74	65.5	65.5	65.5
	Female	39	34.5	34.5	100.0
	Total	113	100.0	100.0	

Source: Own calculation with SPSS

There were in total 113 people who successfully filled questionnaire. Out of 113 respondents, there were 74 males, which is accounted for 65.5%. The rest 34.5% of total respondents were 39 females.

Skill in using Internet

Skill in using Internet

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Basic (e-mail, browsing)	64	56.6	56.6	56.6
	Intermediate (shopping, electronic transactions)	32	28.3	28.3	85.0
	Advanced	17	15.0	15.0	100.0
	Total	113	100.0	100.0	

Source: Own calculation with SPSS

56.6% of respondents have basic usage of Internet, 28.3% Intermediate and 15% advanced usage.

Types of e-Services

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Finance	28	24.8	24.8	24.8
	Education	39	34.5	34.5	59.3
	Health	14	12.4	12.4	71.7
	Housing	3	2.7	2.7	74.3
	Job search	4	3.5	3.5	77.9
	Identification or passport	6	5.3	5.3	83.2
	Registration of vehicle	5	4.4	4.4	87.6
	Declaration to police	4	3.5	3.5	91.2
	Social benefits or subsidies	7	6.2	6.2	97.3
	None	3	2.7	2.7	100.0
	Total	113	100.0	100.0	

Source: Own calculation with SPSS

From above table we conclude that Finance, Education and Health were the most effective items in use of e-Services.

Amount of effectiveness in finance

Finance

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Complete	4	14.3	14.3	14.3
	Partly	10	35.7	35.7	50.0
	Poorly	6	21.4	21.4	71.4
	Not at all	5	17.9	17.9	89.3
	Do not know	3	10.7	10.7	100.0
	Total	28	100.0	100.0	

Source: Own calculation with SPSS

The Finance table shows 14.3% of people solved their issue using finance services completely, 35.7% partly, 21.4% poorly, 17.9% not at all and 10.7% do not know.

Amount of effectiveness in Education

Education

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Complete	9	23.1	23.1	23.1
	Partly	13	33.3	33.3	56.4
	Poorly	10	25.6	25.6	82.1
	Not at all	4	10.3	10.3	92.3
	Do not know	3	7.7	7.7	100.0
	Total	39	100.0	100.0	

Source: Own calculation with SPSS

The Education table shows 23.1% of people solved their issue using education services completely, 33.3% partly, 25.6% poorly, 10.3% not at all and 7.7% do not know.

Amount of effectiveness in Health

Health

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Complete	2	14.3	14.3	14.3
	Partly	6	42.9	42.9	57.1
	Poorly	3	21.4	21.4	78.6
	Not at all	3	21.4	21.4	100.0
	Total	14	100.0	100.0	

Source: Own calculation with SPSS

The Health table shows 14.3% of people solved their issue using health services completely, 42.9% partly, 21.4% poorly and 21.4% not at all.

4.2.2 Collected data

Obstacles of using e-Government services in Iran

Weak IT infrastructure

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	High	70	61.9	61.9	61.9
	Medium	30	26.5	26.5	88.5
	Low	13	11.5	11.9	100.0
	Total	113	100.0	100.0	

Source: Own input and calculation with SPSS

Using SPSS with descriptive statistics, general characteristics of the obstacles of using e-Services in Iran part has been generated in the above table. There were 70 people, equals to 61.9%, think that the weak IT infrastructure (slow or unstable Internet connection) is high when they use e-Government services. There were 30 people gave a medium response, equals to 26.5% and the rest of 13 people, which is equivalent to 11.5%, think that it is low.

Statistics

Descriptive statistics for "Weak IT infrastructure"

N	Valid	113
	Missing	0
Mean		1.49
Median		1.00
Std. Deviation		.695
Range		2.00
Minimum		1.00
Maximum		3.00

Source: Own calculation with SPSS

From the collected questionnaire of 113 respondents, the indicator of mean is 1.49, and the median is 1.00. The indicator of mean lies between *high* answer and *medium* answer, which explains most people think that the weak Internet infrastructure is high when they use e-Government services.

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Lack of knowledge and skill among the citizens

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	High	63	55.8	55.8	55.8
	Medium	32	28.1	28.1	84.8
	Low	18	15.2	15.2	100.0
	Total	113	100.0	100.0	

Source: Own calculation with SPSS

With the same method of descriptive statistics, there were 63 people, equals to 55.8%, think that lack of knowledge and skill among the citizens is high when they use e-Government services. There were 32 people gave a medium response, equals to 28.1% and the rest of 18 people, which is equivalent to 15.2%, think that it is low.

Statistics

Descriptive statistics for "Lack of knowledge and skill among the citizens"

N	Valid	113
	Missing	0
Mean		1.60
Median		1.00
Std. Deviation		.750
Range		2.00
Minimum		1.00
Maximum		3.00

Source: Own calculation with SPSS

From the collected questionnaire of 113 respondents, the indicator of mean is 1.60, and the median is 1.00. The indicator of mean lies between *high* answer and *medium* answer, which explains most people think that the lack of knowledge and skill among the citizens is high when they use e-Government services.

Lack of knowledge and skill among the public administration staff

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	High	58	51.3	51.3	51.3
	Medium	43	38.1	38.1	89.4
	Low	12	10.6	10.6	100.0
	Total	113	100.0	100.0	

Source: Own calculation with SPSS

In this table, there were 58 people, equals to 51.3%, think that the lack of knowledge and skill among the public administration staff is high when they use e-Government services. There were 43 people gave a medium response, equals to 38.1% and the rest of 12 people, which is equivalent to 10.6%, think that it is low.

Statistics

Descriptive statistics for "Lack of knowledge and skill among the public administration staff"

N	Valid	113
	Missing	0
Mean		1.59
Median		1.00
Std. Deviation		.676
Range		2.00
Minimum		1.00
Maximum		3.00

Source: Own calculation with SPSS

From the collected questionnaire of 113 respondents, the indicator of mean is 1.59, and the median is 1.00. The indicator of mean lies between *high* answer and *medium* answer, which explains most people think that the lack of knowledge and skill among the public administration staff is high when they use e-Government services.

Lack of strong security

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	High	23	20.4	20.4	20.4
	Medium	37	32.7	32.7	53.1
	Low	53	46.9	46.9	100.0
	Total	113	100.0	100.0	

Source: Own calculation with SPSS

In this table, there were 23 people, equals to 20.4%, think that the lack of strong security is high when they use e-Government services. There were 37 people gave a medium response, equals to 32.7% and the rest of 53 people, which is equivalent to 46.9%, think that it is low.

Statistics

Descriptive statistics for "Lack of strong security"

N	Valid	113
	Missing	0
Mean		2.26
Median		2.00
Std. Deviation		.779
Range		2.00
Minimum		1.00
Maximum		3.00

Source: Own calculation with SPSS

The indicator of mean is 2.26, and the median is 2.00. The indicator of mean lies between *medium* answer and *low* answer, which explains most people think that the lack of strong security is low when they use e-Government services.

Lack of access to capable electronic devices

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	High	15	13.3	13.3	13.3
	Medium	41	36.3	36.3	49.6
	Low	57	50.4	50.4	100.0
	Total	113	100.0	100.0	

Source: Own calculation with SPSS

In this table, there were 15 people, equals to 13.3%, think that the lack of access to capable electronic devices is high when they use e-Government services. There were 41 people gave a medium response, equals to 36.3% and the rest of 57 people, which is equivalent to 50.4%, think that it is low.

Statistics

Descriptive statistics for "Lack of access to capable electronic devices"

N	Valid	113
	Missing	0
Mean		2.37
Median		3.00
Std. Deviation		.709
Range		2.00
Minimum		1.00
Maximum		3.00

Source: Own calculation with SPSS

From the collected questionnaire of 113 respondents, the indicator of mean is 2.37, and the median is 3.00. The indicator of mean lies between *medium* answer and *low* answer, which explains most people think that the lack of access to capable electronic devices is low when they use e-Government services

4.2.3 Generated model

Using the SPSS program of IBM, data collected from the questionnaire survey has been successfully imported and processed.

Coefficients^a

Model	Unstandardized Coefficients		Standardized Coefficients	T	Sig.	Collinearity Statistics	
	B	Std. Error	Beta			Tolerance	VIF
1 (Constant)	.662	.242		2.737	.007		
Weak IT infrastructure	.382	.070	.394	5.465	.000	.885	1.130
Lack of knowledge and skill among the citizens	.268	.081	.282	3.290	.001	.626	1.598
Lack of knowledge and skill among the public administration staff	.252	.082	.264	3.069	.003	.619	1.615
Lack of strong security	.024	.060	.027	.397	.692	.972	1.029
Lack of access to capable electronic devices	-.002	.066	-.002	-.028	.978	.959	1.043

a. Dependent Variable: Use of e-services in 12 months

Source: Own calculation with SPSS

The table above is the Coefficient table with the dependent variable is the time of using e-Government services in 12 months of respondents and independent variables are weak IT infrastructure, lack of knowledge and skill among the citizens, lack of knowledge and skill among the public administration staff, lack of strong security and lack of access to capable electronic devices. From these data, the model is generated as the function below:

$$Y = 0.382*X1 + 0.268*X2 + 0.252*X3 + 0.024*X4 - 0.002*X5 + 0.662$$

Y … the dependent variable of citizen's usage.

X1 … the indicator of weak IT infrastructure.

X2 … the indicator of lack of knowledge and skill among the citizens.

X3 … the indicator of lack of knowledge and skill among the public administration staff.

X4 … the indicator of lack of strong security.

X5 … the indicator of lack of access to capable electronic devices.

5 Verification of statements

The verification of the statement is based on the comparison of each coefficient p-value with a significant level of 5%. In each statement of coefficient, null hypothesis is considered as equivalent to 0 (coefficients a, b, c, d, e = 0).

If p-value < 0.05, H0 is rejected. In contrast, if p-value > 0.05, H0 is accepted. (14)

S1: The weak IT infrastructure impact on the usage of e-Government services in Iran (X1<–> Y).

H0: a = 0; p-value = p-value <0.0001 => H0 is rejected.

After comparison of the p-value and significant level, the null hypothesis is rejected. It means the coefficient of indicator of the *weak IT infrastructure* has a statistically significant influence on the citizen's usage of e-Government services in Iran.

S2: The lack of knowledge and skill among the citizens *has a significant impact on the usage of e-Government services in Iran (X2 <-> Y).*

H0: a = 0; p-value = 0.001 < 0.05 => H0 is rejected.

The p-value in this case was equal to 0.001 and smaller than 0.05, so it was confirmed that there was a statistically significant relationship between the citizen's usage of e-Government services in Iran and the lack of knowledge and skill among the citizens.

S3: The Lack of knowledge and skill among the public administration staff has a significant impact on the usage of e-Government services in Iran (X3 <-> Y).

H0: a = 0; p-value = 0.003 < 0.05 => H0 is rejected.

The p-value in this case was equal to 0.003 and smaller than 0.05, so it was confirmed that there was a statistically significant relationship between the citizen's usage of e-Government services in Iran and the lack of knowledge and skill among the public administration staff.

S4: The lack of strong security has a significant impact on the usage of e-Government services in Iran (X4 <-> Y).

H0: a = 0; p-value = 0.692 > 0.05 => H0 is accepted.

The p-value of this case was 0.692, which was bigger than 0.05. It is concluded that there was no statistically significant relationship between the lack of strong security and the citizen's usage of e-Government services in the last 12 months.

S5: The lack of access to capable electronic devices has a significant impact on the usage of e-Government services in Iran (X5 <-> Y).

H0: a = 0; p-value = 0. .978 > 0.05 => H0 is accepted

The p-value of this case was 0.978, which was bigger than 0.05. It is concluded that there was no statistically significant relationship between the lack of access to capable electronic devices and the citizen's usage of e-Government services in the last 12 months.

6 Summary and recommendation

With the result from the above table and the verification of the research statements, it was concluded that weak IT infrastructure and lack of IT and ICT education among citizens and employees had impact on the use of e-Government services in Iran. On the other hand, there was no statistically significant influence between the usage of e-Government services and the lack of strong security and lack of access to electronic devices in Iran. Also we concluded that citizen mostly use education services, finance services and health services in comparison to other e-Government services. On the other hand they were able to solve their issues via Internet partly.

For summarizing all the chapters of the thesis we conclude that Iran need a lot effort and making a lot of programs for accomplishing different projects. In order to speed this process the government must devote a reasonable budget to the IT and ICT sectors and getting help from the skilled working forces and motivating them. Also one of the most important actions that Iran must take is enhancing political relationships between the countries because any small changes in the political reforms will have a direct effect in the economic situation of the country, because the economy defines the degree of people's expectancy.

7 Results and discussion

From the summary of generated survey data, weak IT infrastructure with p-value <0.0001, lack of knowledge and skill among the citizens with p-value $0.001 < 0.05$ and lack of knowledge and skill among the public administration staff with p-value $0.003 < 0.05$ had influence on the citizen's usage of e-Government services in Iran.

The results of this survey were still very limited since there were just 113 people who filled the questionnaire and most of them were from urban area, because access to the Internet is not the same in all parts of Iran. For example people in small and distant cities do not have any access to the Internet since there is no Internet coverage there.

However, there was no statistical relationship between citizen's usage of e-Government services in Iran and lack of strong security and lack of access to capable electronic devices. The statistical results explain there is a relationship between weak IT infrastructure (slow or unstable Internet connection), lack of knowledge and skill among the citizens and lack of knowledge and skill among the public administration staff and citizen's usage of e-Government services in Iran. Therefore the activities that government or local authority of Iran should focus more are improving Internet infrastructure and providing ICT education for citizens and employees.

7.1 Future trends

It is anticipated that with the current political and economic situation in Iran and the willingness of the Iranian citizens to have access and knowledge of using e-Government services and also with free and high speed Internet without any censorships and restrictions like the developed countries, The e-Government in Iran will step by step move toward the path of stability covering all parts of the country.

From the other hand, due to the advances that Iran has had in the field of foreign policy which was mainly caused by the nuclear deal between Iran and world powers in the past recent years, there has been a good opportunity for foreign investment. Also, telecoms market is very important in Iran due to the economic conditions and has being successful about privatizing its telecom industry.

Unfortunately there has been not much eagerness for foreign investment in Iran's ICT market due to the sanctions imposed in Iran. But with the current conditions it is anticipated that Iran will experience changes about this issue. By this unique opportunity Iran must make a lot of effort by applying the experience of advanced countries for the purpose of enhancing the current condition through development of e-Government in different dimensions. (15)

8 Conclusion

The major goal of the diploma thesis was to investigate dimensions of e-Government in Iran. The main purpose of the thesis is to analyze the process and obstacles of using e-Government services in Iran. There was a questionnaire survey which took place in rural and urban area in Iran with 113 respondents. The data of the survey then was used to analyze the impact of obstacles on the citizen's usage of e-Government services in Iran.

From the summary of generated survey data there is statistical relationship between weak IT infrastructure, lack of knowledge and skill among the citizens and lack of knowledge and skill among the public administration staff and use of e-Government services among citizens in Iran. Also most of the citizens use e-Government services regarding to solve their educational, financial and health issues.

Iran as a developing country needs many fundamental effort in building IT infrastructure and providing ICT education to citizens and employees. The majority of the Iranians are fed up with the obstacles and censorship which put them apart from the rest of the world. Therefore there is a strong urge especially from the young and educated generation to the government to achieve their rights.

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10 Appendix

1. You are:

Male

Female

2. Your age is: ……….

3. Where do you live?

Urban area

Rural area

4. Your achieved education is:

Secondary

Vocational/Professional

Bachelor degree

Master degree

Doctor degree

5. How would you rate your skills using Internet?

Basic (e-mail, browsing)

Intermediate (shopping online, electronic transactions)

Advanced (blogging, maintaining website)

6. Have you ever used Internet to solve one of the following issues with a public institution?

Finance (e.g. paying fee or tax)

Education (e.g. application for school)

Health (e.g. ordering a visit at doctor)

Housing (e.g. reporting residency address, asking for building permission)

Job search

Identification documents or passport

Registration of vehicle

Declaration to police

Tax reporting

Social benefits or subsidies

None

7. If you used the Internet to solve a <u>financial</u> issue, what did you exactly do?

Searching for information

Looking for form

Downloading and filling in form

Complete electronic submission of form

8. To what extent you were able to solve your financial issue via Internet?

Completely

Partly

Do not know

Poorly (e.g. had to repeat it or solve in a different way)

Not at all (e.g. had to do it in person or via phone)

9. If you used the Internet to solve a <u>health</u> issue, what did you exactly do?

Searching for information

Looking for form

Downloading and filling in form

Complete electronic submission of form

10. To what extent you were able to solve your health issue via Internet?

Completely

Partly

Do not know

Poorly (e.g. had to repeat it or solve in a different way)

Not at all (e.g. had to do it in person or via phone)

11. If you used the Internet to solve an <u>educational</u> issue, what did you exactly do?

Searching for information

Looking for form

Downloading and filling in form

Complete electronic submission of form

12. To what extent you were able to solve your educational issue via Internet?

Completely (e.g. could download, fill-in the form and submit electronically)

Partly (e.g. could download and fill-in the form but cannot submit electronically)

Poorly (e.g. experienced some technical trouble or had to solve in a different way)

Not at all (e.g. had to do it in person or via phone)

Do not know

13. Please rate, how important would be for you to have these issues available online from your local authority (1-the most important, 4-the least important)

Finance (e.g. paying fee or tax)

Education (e.g. application for school)

Health (e.g. ordering a visit at doctor)

Housing (e.g. reporting residency address, asking for building permission)

Job search

Identification documents or passport

Registration of vehicle

Declaration to police

Social benefits or subsidies

Electronic polls

Electronic communication with local representatives (e.g. forums, social network profile, direct e-mail, etc.)

14. For the last week, how many times have you used Internet towards public authorities?

Not at all

1-5 times

5-10 times

10 times or more

15. How do you see the overall quality of electronic services for dealing your issues with Iranian public authorities?

Excellent

Very good

Sufficient

Not sufficient

Do not know

16. Please rate, how important the obstacles can effect on using e-Services in Iran. (1-the most important, 4-the least important)

Weak IT infrastructure (slow or unstable Internet connection, ...)

Lack of knowledge and skill among the citizens

Lack of knowledge and skill among the public administration staff

Lack of foreign language websites and applications

Lack of strong security policies and laws

Lack of access to capable electronic devices (tablets, smartphones, laptops, etc.)

17. Which kinds of activities should be done by government or local authority to improve satisfaction of citizens in terms of using e-Government services?

Establishing more electronic services

Learn and use best practices from other commercial e-services

Provide more ICT education and skills

Improving Internet infrastructure

Improving security policies and laws

Increase the Internet accessibility by every individual, e.g. in public places

Other (please describe)