Investigating Effective Factors on Citizens’ Satisfaction from E-government Services in Iran

Hassan Ghaffarzadeh Maraghi

Master of Science in Business and Economics
Business Administration

Luleå University of Technology
Department of Business, Administration, Technology and Social Sciences
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Abstract

With the emergence of information and communication technologies in government, it is possible to locate services closer to the citizens through different channels which help them in managing their transactions. This motivates to study citizen satisfaction with electronic government services. This report presents a survey study about citizens' satisfaction from e-government service providers. A questionnaire is distributed and analyzed to achieve a better understanding about quality of services provided. It is concluded that most citizens are satisfied with the services that provided by e-government. However, this satisfaction is not so related to their personal attitudes and usability factors. At the end the soft issues which may affect on the providing services with e-government are considered.
Chapter 1: Introduction

1.1 Problem Statement

The advent of Information and Communication technology (ICT) has changed the daily routines of businesses as well as the lives of private citizens. In developing countries, this transformation process has just begun. For some citizens, the use of information technology tools is a natural part of their daily lives while others prefer more traditional channels. This has provided the government with unprecedented opportunities to improve their services and increase citizens’ satisfaction, while reducing their costs.

Eventually, the huge cost of developing and deploying ICT, demands careful planning and design. Governments need to look at their administrative processes and communication within and across agencies when applying new technology.

“E-government” refers to the use of IT such as Wide Area Networks, the Internet, and mobile technology by government agencies in order to improve the relationship between citizens, businesses, and government. These technologies can serve a variety of different ends. It is important to understand that e-government is more than a website, electronic mail (e-mail), or processing transactions via the Internet.

Major categories of the e-government services are between government and the citizens (G2C), government and business (G2B), government and other government agencies (G2G), and between government and its own employees (G2E). While many current efforts focus on G2C, the three remaining areas can provide tremendous payback for government. Therefore, it is important to consider that a definition of e-government is not complete unless it identifies and considers all of its customers. E-government strategies in developing countries should first target the improvement of their operations and processes and also the level of government’s ability to cooperate. This new unavoidable position for the world governments is now referred to as “good governance” (Zhang, J., (2004), Rose, M., (2004)). This research is deliberately concentrated on G2C services mostly because it is the most developed area in e-government services in Iran.
Whereas, in Iran as a developing country culturally do not use from the electronic ways for doing their activities, E-government is a new way of doing governmental work in Iran. Creating new systems and procedures is not enough; maintenance, ICT training and social acceptance are as equally important. A basic condition for user acceptance of e-government services is their dependability on user satisfaction. Therefore, it is essential to find out the factors which, affect on Iranian citizen satisfaction from E-government services. As a result the research problem can be defined as follow:

- What are the importance factors which, affect on Iranian citizen satisfaction from E-government services?

1.2 Background

In the current era of technological advancement that is taking place all over the world, a new kind of rationalization has been introduced in the public sector by the use of modern information and communication technologies (ICTs). Increasingly the use of ICT tools and applications is leading to transformational shifts in public policy, processes and functions. E-government is being deployed not only to provide citizen services but for public sector efficiency purposes, improving transparency and accountability in government functions and allowing for cost savings in government administration. ICTs are changing the way the government does business for the people. In this context, e-government is seen to be a lever for the transformation of government.

Most governments around the world started their e-government initiatives with a focus on providing information and services to the citizen while service delivery platforms remained separate and parallel across various government agencies. In this model, service delivery was built around individual agency functions, structures, information, systems and capabilities. With the private sector leading the way, advances in accessibility and a greater use of technology have allowed an expansion of innovative ICT solutions. Now citizens and businesses around the world are increasingly demanding that their governments follow suit. Citizen groups have come to
expect a 24/7 convenient user interface with Ease of Use, in a language the user understands and which is tailored to individual needs.

The focus on service delivery is becoming intertwined with an emphasis on achieving cost savings and enhancing efficiency. The role of ICT in public service delivery is accordingly being revisited to enable effective inter-organizational linkages and consolidation of government systems. While initially the political and managerial focus was on developing e-services within each public institution, with limited consideration being given to cross-organizational coherence, the focus today has clearly shifted towards coordinated services offering one-stop shops to citizens and businesses. (OECD, 2007)

Advances in technology have ushered in an era of new thinking about increasing integration in service delivery based on commonality of infrastructures, data and business processes. (OECD, 2005)

The need for the consolidation of government systems also stems from the fact that ICT tools have the ubiquitous power to make Time and distance irrelevant thereby increasing manifold the efficacy of public service delivery. The Internet and the World Wide Web eliminate boundaries and allow for integrated services to be available 24/7 while promoting faster and efficient connection between agencies, processes and systems.

Moreover, in the last few years ICTs have become increasingly affordable. As technologies have advanced, the cost of infrastructure and accessibility has drastically been reduced around the world. For example, broadband prices for DSL connections across 30 developed countries fell by 19 per cent while the speed of connection increased by 29 per cent in 2006 (BBC NEWS, 2007). Reduction in the costs has led to a jump in the adoption of new technologies in many developing countries as well, without the national governments having to incur heavy investment in land-based infrastructure. Innovations in information and communication technologies have also provided an opportunity for effective working modalities across government agencies.

Therefore, the advent of Information and Communication technology (ICT) has changed the daily routines of businesses as well as the lives of private citizens. In developing countries, this transformation process has just begun. For some citizens, the use of information technology tools
is a natural part of their daily lives while others prefer more traditional channels. This has provided the government with unprecedented opportunities to improve their services and increase citizens’ satisfaction, while reducing their costs.

1.3 E-government History

The impetus for thinking about online and more online dimensions to public sector operations came during the 1990s when the mainstream advent of the Internet began to translate into dramatic declines in the cost of both communicating and processing information. Consistent in large manner with the re-engineering movement of the preceding decade, public sector organizations sought new ways to control costs and improve organizational efficiencies. New and better approaches to managing information technology and the emergence of online channels of service-delivery promised significant financial savings. (Nelson, 1998)

Yet, at the same Time, the networking and more transformational potential of the Internet also promised something more, in terms of more fundamentally rethinking both how and why governments function. While e-government has resulted in efficiency gains in some instances, much of the research reports that cost savings have been sporadic, uneven and often overshadowed by both upfront and escalating investments often required in order to create and maintain new electronic capacities.

This escalation is tied to a widening of the strategic scope and purpose of e-government, extending much beyond the realm of financial savings. Three different images of e-government thus emerged during this Time frame, as put forth by Remmen: i) efficiency - cost reductions; ii) public service - better quality, easier access (i.e. 24/7) and new services; and iii) democracy - participation and interactive dialogue (Remmen, 2004). These images are helpful in underscoring the manner by which e-government can be viewed as either internal or external drivers of change, or more accurately as a set of both reshaping both decision-making and service delivery on the one hand, and participation and accountability on the other hand.

Reflecting this widened scope, one helpful definition of e-government initially formulated by the Mexican Government is the following: the continuous innovation in the delivery of services,
citizen participation and governance through the transformation of external and internal relationships by the use of information technology, especially the Internet (Roy, 2006). It is important to note that this definition encompasses innovation in service delivery processes and citizen participation processes.

Indeed, since its mainstream emergence in the 1990s the rapid emergence of the Internet in all sectors has altered the mindset and strategies of organizations in a more digitally and socially networked environment. With respect to e-commerce, growth and expansion in the private sector are linked to an online population that is projected to reach some 1.8 billion by 2010.

The notion of life events and integrative service streams based on client group segmentation have since evolved to reflect an online perspective of government operations based less on organizational charts and more on citizen usage and outcomes, with Singapore credited by some observers as the first nation to reorganize itself in such a manner (McIver, 2002). Integrated service offerings that hide, simplify or transcend the traditional machinery of government have thus become a centerpiece of the e-government project through one or more of the following four variations of what it means to integrate services:

• All relevant agencies offering the same service in a common manner, sharing data definitions and at best sharing data, but no technological integration between the services being offered;

• Services are collected together under a common theme or event. The services are not inherently integrated, or even with a common look-and-feel, but are grouped in ways that aid discovery and promote the comprehensive completion of necessary services;

• Services are delivered by a single provider as an agent of other government agencies. Singular services are offered by the agent and the integration is hidden from the ‘customer’;

• Services are technologically integrated into a pseudo-supply-chain application. This requires the most sophisticated integration work and is not often implemented. (Halligan, 2004)
Whereas the first two levels represent the realm of e-government as a service delivery strategy as it took shape in the late 1990s, many governments today (especially in developed countries with the Internet widely available) are grappling with the latter two challenges. New organizational and technological models for delivering services both online and via complementing, more traditional channels are taking hold.

1.4 Research objective

This study aims to investigate the theoretical framework of e-government and to find out what are the critical factors that affect user satisfactions with a new type of e-government solution, a system of intermediaries delivering public services.
Chapter 2: Literature Review

In this chapter, various definitions of e-government have been reviewed and it is followed by an analysis of e-government Success factors as indicated in the literature. Next, the role of e-government services providers (intermediaries) is examined. A brief review of customer satisfaction literature is indicated. ICT policies and programs of Iran are introduced and the place of e-government closes the chapter.

2.1 E-government definition

The advent of technological revolution of the late 1990s, the result of which was the enabling of the delivery of services over the Internet, caused major and rapid transformation of governments functioning. Evidence shows that governments around the globe have come to the realization of the situation regardless of their political systems and consider it as a means to modernize their countries. New technologies offer the possibility for governments to become far more responsible to the will of the people, to work and make the democracy work better than ever before. They offer governments the opportunity to achieve a quantum leap towards tomorrow’s democracy (DeVel, 2002).

“E-government” refers to the use of IT by government agencies such as Wide Area Networks, the Internet, and mobile computing in order to improve the relationship between citizens, businesses, and other bodies of the government. These technologies can serve a variety of different ends which is mentioned later as the critical Success factors. It is important to understand that e-government is more than a website, electronic mail (e-mail), or processing transactions via the Internet. (Dutton, 1996) argues that e-government modernizes business processes by enabling more accurate, responses to citizen requests, and linking transaction accounts in different agencies. While many of today’s e-government vendors narrowly focus their product and service offerings in these areas, organizations that overlook the broad implications of e-government will not realize its true benefits and will be ill prepared to serve the emerging digital
citizenry. Different countries have perceived the meaning and content of e-government differently, which is related to their specific political systems.

According to these basic definitions, academics defined various definitions for e-government. Whitson and Davise defined e-government as implementing cost-effective models for federal employees, citizens, industries, and other stakeholders to conduct business transactions online (Whitson and Davis, 2001). Tapscott (1996) defined e-government as an inter-networked government, and Nadler and Tushman (1997) emphasized that technology is only one of the structural materials. Sprecher (2000) considers e-government as a technology to help simplify and automate transactions between governments and constituents, businesses, or other governments. Luling (2001) defines e-government as online government services, that is, any interaction one might have with any government body or agency, using the Internet or the World Wide Web. Another definition come from Lenk and Traunmuller, they said that E-government can be seen as a guiding vision that includes all proposals for modernization and reorganization (Lenk and Traunmuller, 2000). For Burn and Robins e-government explain as governments’ efforts to provide citizens with the information and services they need, using a range of information and communication technology (Burn and Robins, 2003).

Taking a more comprehensive view, Aicholzer and Schmutzer (2000) saw e-government covering changes of governance in a twofold manner: (1) transformation of the business of governance, that is, improving service quality delivery, reducing costs, and renewing administrative processes; (2) transformation of governance itself, that is, reexamining the functioning of democratic practices and processes.

In terms of different perspectives of e-government, a comprehensive categorization is suggested by Lenk and Traunmuller (2000). According to them, e-government initiatives can be divided into the following perspectives:

- E-business perspective
- Citizen perspective
- Knowledge perspective
- Process perspective
- Telecooperation perspective
The e-business perspective basically takes the definition of e-government to becoming ecommerce within the government framework (Stratford, 2000). Deployment of information and communication technologies to improve and enhance the performance of the government (Schubert & Hausler, 2001), and to increase citizens’ access to information (Csetenyi, 2000), forms the core ideas of this view of e-government. The citizen perspective refers to the end user (customer) concerns and expectations.

The perspective encompasses the delivery mode and the concerns in accessing electronic services (Lenk and Traunmuller, 2000). Addressing the digital divide concept lies under this view.

According to Baum and Di Maio (2000), e-government is marked by four phases, namely: (Baum and Di Maio, 2000)

**Phase 1 Presence:** The primary goal here is to post information such as agency mission, addresses, opening hours and possibly some official documents of relevance to the public.

**Phase 2 Interaction:** This phase is characterized by Web sites that provide basic search capabilities, host forms to download and linkages with other relevant sites as well as e-mail addresses of offices and officials. This stage enables the public to access critical information online and receive forms that may have previously required a visit to a government office.

**Phase 3 Transaction:** This phase is characterized by allowing constituents to conduct and complete entire tasks online. The focus of this stage is to build self-service applications for the public to access online, but also to use the Web as a complement to other delivery channels. Typical services that are migrated to this stage of development include tax filing and payment, driver’s license renewal, and payment of fines, permits and licenses. Additionally, many governments put requests for proposals and bidding regulations online as a precursor to e-procurement.

**Phase 4 Transformation:** This phase is the long-term goal of almost all-national and local e-government initiatives. It is characterized by re-defining the delivery of government services by providing a single point of contact to constituents that makes government organization totally transparent to citizens. This phase relies on robust customer relationship management tools and
new methods of alternative service delivery capabilities that reshape relationships between citizens, businesses and governments.

Therefore, there are several key factors that influence how decision makers, policy makers and public sector managers elect to approach, develop and implement e-government programs (UN member state, 2001):

- state of a country’s telecommunications infrastructure
- human resource capability
- political will and commitment of the national leadership
- shifting policy and administrative priorities play important roles

While some recent definitions see e-government as the various ways, government uses information and communication technologies to remain relevant in the knowledge society (ITAC, 2002). There is not unique definition of e-government and it is because of the ways e-government is being driven and the priority outcomes being sought, and they reflect the cultural, political and economic circumstances of the various countries. Therefore, e-government is recognized as a key strategy for Success in 21st century and used as a major tool for reinventing the government. But, all of them have common interests in citizenship, but with different names in different countries (e-services, e-government, and e-knowledge) (Socitm and IDeA, 2002).

Experimental Return on Investment (ROI) is a function of three critical variables to measure the effectiveness of e-government (Momentoum Research Group, 2000):

- **Application and service relevance**: this point questioned to see whatever the promise of e-government meets the needs of citizens and improves their life.

- **Citizens and business satisfaction**: through using this point, the ability of e-government to the internet can be measured.

- **Preservation of public trust**: privacy is a major component in all issues, so peoples who use e-government should be confident to prevent their privacy.
2.2 E-government Advantages

E-government, if implemented properly, can improve current government services, increase accountability, result in more accurate and efficient delivery of services, reduce administrative costs and time spent on repetitive tasks for government employees, facilitate greater transparency in the administration of government, and allow greater access to services due to the around the clock availability of the internet. E-government also allows government, such as email, online meeting and forums for voicing opinion, online transactions, and online voting. By creating viable Internet presence, a government can generate interest in political process among young citizens who frequently use internet (Macintosh et al., 2003).

Benefits assured by use and application of E-government in developing countries are the same as those in developed countries. The differences between these two groups could result from the fact that many potential benefits of E-government are not reaped by developing countries as consequence of their limited use of E-government. Some of the important advantages of E-government are as follow: (Ndou, 2004)

2.2.1 Cost Reduction and Efficiency Gains

Researchers (Amit and Zott, 2001; Malhotra, 2001) agreed that ICT has considerable potential to contribute to efficiency gains and cost reductions for private organizations. Furthermore, these benefits constitute a major aspect of E-government initiatives. Putting services on-line substantially decreases the processing costs of many activities compared with the manual way of handling operations. The appropriate application of ICT may possibly reduce the number of inefficiencies in processes by allowing file and data sharing across government departments, thereby contributing to the elimination of mistakes from manual procedures, reducing the required time for transactions. Efficiency is also attained by streamlining internal processes, by enabling faster and more informed decision making, and by speeding up transaction processing.
2.2.2 Quality of Service Delivery to Businesses and Customers

In the traditional model of public service delivery, the procedures are long, time consuming and lack transparency. A business that wishes to obtain a license or a permit has to fill out a number of application forms, has to visit a number of different offices and spend a considerable amount of time. If a citizen wishes to be issued with a certificate or any other official document, he or she will have to travel to the central government office, go to different offices and spend a lot of time for a simple service. The consequences are high costs and citizen and business dissatisfaction. An E-government initiative, on the other hand, which puts government services online, thereby reducing the bureaucracy, offers round the clock accessibility, fast and convenient transactions, and obviously enhances the quality of services, in terms of time, content and accessibility.

2.2.3 Transparency, Anticorruption and Accountability

E-government helps to increase the transparency of decision-making processes. In many cases E-government offers opportunities for citizens to directly participate in decision-making, by allowing them to provide their own ideas and suggestions in forums and online communities. If web sites are designed carefully and openly, they can be valuable resources for transparency as citizens, businesses and other stakeholders should be able to see political and governmental information, rules and policies. Previously it was often necessary to go directly to governmental offices to obtain information, but now this information should be available on the web. The availability of a diversity of publications regarding the activities of the public administration, as well as economic and legislative aspects, increases the transparency too.

2.2.4 Increase the Capacity of Government

The use of ICT for the reorganization of internal administration transactions, communications, interrelationships and for easy information flow, and transfer offers considerable opportunity to increase government capacity. Intranets allow different departments to share databases of common customers and to pool skills and capacities of their members for problem solving. These
facilities in turn will pledge faster information flow and transfer, quicker and cheaper provision of goods and services, faster and better decision making processes, and unplugged paper bottlenecks. Knowledge based or expert systems help to create a more responsive and guideline based process. This approach assures benefits for businesses, which become both consumers of government services and providers of goods and services to the government.

2.2.5 Network and Community Creation

ICT creates both pressures and opportunities for network creation and community building. E-government initiative requires a complex web of interrelationships among government, customers, businesses, employees and other governmental agencies. Moreover, the very nature and function of E-government require a network approach to put together skills, technologies, information and knowledge that span the boundaries of different governmental agencies. It is generally impossible to find all of them in one single governmental agency. The need for learning and training, for example, requires a partnership between government departments and universities or research institutions. The provision of integrated services at one contact point requires the cooperation and collaboration of different departments and agencies, horizontal and vertical integration, and therefore the creation of a large and diversified network of relationships. The Successful use and diffusion of ICTs in the public sector involves a collective, multidisciplinary and dynamic learning process (Mansell and Wehn, 1998). Moreover, the realization of electronic transactions triggers network creation among private companies, financial institutions, telecommunication and ISPs. On the other hand, an E-government initiative enables community creation, giving citizens and businesses the possibility to participate in forums, and in decision making processes, contributing actively to different political and governmental discussions.

2.2.6 Improve the Quality of Decision Making

Community creation, forums, continuous interaction and communication between government and its citizens contribute further to the decision making process. By means of active
participation in political and government discussions, citizens can contribute their own ideas, and share their knowledge and information. This will in turn lead to building trust in government and improving the relationships between the government and the governed. The OECD argues that the strengthening relationship between government and citizens could improve the quality of services by allowing government to tap wider sources of information, perspectives and solutions to meet the challenges of policy making under conditions of increased complexity (OECD, 2001). Considering citizens as governmental customers, listening and understanding to their needs and requirements, is essential for a better decision making process. The appropriate use of shared data and information by all governmental agencies and departments offers the possibility to make quick decisions thus to serve the community better. However improvements in the speed and quality of decision making depend greatly on the willingness of governments to be empowered with new information, the capability of staff to process the large amount of information, the prevailing cultural values as well as the motivation of governments to shift from a hierarchical public administration model to a flexible, less centralized model.

2.2.7 Promote Use of ICT in Other Sectors of the Society

Continuous interaction and communication between government and its stakeholders contributes to the creation of awareness about the potential contribution of ICT to local community activities. In this way, E-government plays a vital role, not only in facilitating market-led initiatives but also in initiating the process of capability building and in coordinating the actions of a large number of interested stakeholders (Mansell and Wehn, 1998). In order for E-government staff to interact, transact and communicate electronically with businesses, citizens and other stakeholders, it is necessary to mandate the use of ICT tools and applications. For a government-to-business electronic transaction to occur, the business itself needs to make use of electronic equipment. On the other hand, financial institutions have to create secure and reliable methods for electronic transactions. The development of new technological and management capacities required for E-government functionality encourage the development in turn of new training courses and modules in schools and universities trying to supply the required skills and capabilities to the market.
2.3 Critical Success factors

Governments worldwide are faced with the challenge of transformation and the need to modernize administrative practices and management systems (Tapscott, 1996). ICT is believed to be a powerful enabling tool to address some of the key barriers and challenges for entering the global economy and for future growth potential (Valentina, 2004). There are some capabilities that are needed for the Successful implementation of e-government and also to overcome the barriers ahead, which are known as the critical Success factors. From the previous research accomplished in Iran (Zarei B. and H. Sharifi, 2004) the major factors are as follow:

Technology: Focuses on assessment of the current infrastructure, identification of improvements needed to support e-government initiatives, implementation of those improvements, and integration of existing autonomous systems and between new and legacy systems, with a focus on providing a total solution.

Culture: It will require a certain cultural change for government to consciously organize itself from the citizen’s point of view, rigorously questioning where value exists in the current format (Information society commission, 2003).

Human resources: Improving ICT human resources in developing countries to keep up with those in the developed countries can narrow the disparities that create digital divides between and within countries. For these reasons both public and private sectors should investigate to develop human capital (Minoru, M. and S. Suksiriserekul, 2003). These investigations should be done in fundamental knowledge of and skills in computer application; skills to search analyze and utilize information (Thuvasethakul, CH. And K. Pooparadai, 2003).

Organization: Heeks mentioned that managerial reforms are supported by information and communication technology (ICT), including improved effectiveness and efficiency of personnel management, parts procurement, accounting, health care, and claiming unemployment benefits (Heeks, 2001). Silcock described such managerial improvements linked to ICT as part of a global convergence to a standard reform model (Silcock, 2001).
**Private sector participation:** Experience in other countries indicates that the private sector is a major driving force and intermediary between government and citizens in the implementation of the e-government. While private sector does not appear to have sufficient information on the magnitude of the e-governance program to allow the sector to fully engage and put in place structures and systems to support e-governance program (U.S. agency for international development, 2006).

**Private investment:** E-government foresight should interactively foresee investment modes for building e-government (Sofia, 2002). Jacek Murawski Points that “public sector investment is a driver of private sector IT investment because it requires businesses to file returns electronically”.

**Planning:** The Government Action Plan provides a strong framework and impetus for the implementation of e-government. It brings together the various strands and requirements of e-government in a manner that is accessible and reflects the key priorities moving forward.

**Financial resources:** While planning and budgeting in a changing climate is difficult, the government should normally seek to invest in sustainable programmes that can produce savings. Capital investment in technology such as e-government leads to enhanced service delivery and reduced running costs. Whilst significant cost saving may be achieved though the electronic delivery of services and the redesign of core processes, substantial capital investment is often needed (KPMG, 2002). According to the Bolton council a key principle of the Capital Investment Strategy is to coordinate the approach to investment both within the Council and with external partners (Curran S. and A. Gardner, 2006).

**Time factor:** Time is an important factor in e-government and if it estimates deficient, projects have been abandoned even after vast sums of money have been spent on their development. Even where such projects have been completed Successfully, they are still very expensive undertakings.
2.4 E-government strategy

Major groups of the e-government services are between government and the citizens (G2C), government and business (G2B), government and other government agencies (G2G), and between government and its own employees (G2E). While many current efforts focus on G2C, the three remaining areas can provide tremendous payback for government. Therefore, it is important to consider that a definition of e-government is not complete unless it identifies and considers all of its customers.

E-government has attracted the attention of politicians, scientists, and statesmen of the world in the recent years and hence has been extensively approached by governments in many countries, many of whom have devoted considerable efforts and resources for its implementation (Hwang et al., 1999; Slaton and Becker, 2000; Wimmer, 2002). According to this UN proposed a model for the e-government implementation including the following stages:

- Emerging: An official government online presence is established.
- Enhanced: Government sites increase; information becomes more dynamic.
- Interactive: Users can download forms, e-mail officials and interact through the web.
- Transactional: Users can actually pay for services and other transactions online.
- Seamless: Full integration of e-services across administrative boundaries.

UN (UN, World Public Sector Report, 2006) report suggests, development and the existence of e-government applications do not necessarily reflect the quality of life in a country; however, it is a fact that e-government is now recognized by almost all countries as a key strategy to attain a competitive advantage and a core means for reforming the governments.

E-government strategies in developing countries should first target the improvement of their operations and processes and also the level of government’s ability to cooperate. This new unavoidable position for the world governments is now referred to as “good governance” (Zhang, 2004; Rose, 2004). In Iran, as a developing country, the recent target of the e-government is to satisfy citizens from services which part of that are provide by e-government service providers. Therefore, it is important to find the scale of satisfaction of citizens from these services and find the problems and solve them.
2.5 E-government services providers

Due to low level computer skills and access to secure internet connection in developing countries, alternative mechanisms must be deployed to ensure widely acceptance of e-government. One alternative is to employ intermediaries who will assist people to access services, in Bakardjieva’s evocative term ‘warm intermediaries’ (Bakardjieva, 2001). Such centers may consist of an unattended kiosk in the government agency or a service kiosk located close to the client (AOEMA, 2006).

‘Intermediaries are organizations from the private or voluntary sectors offering services targeted at groups of customers. They do not offer services on behalf of the public sector and shall not represent themselves as so doing. The intermediary is acting as an agent of the end customer.’ (OeE, December 2003)

Intermediaries can expect effective and efficient access to public sector informational and human resource to enable successful mediation in the supply of public services (OeE, 2003). It is argued that the intermediaries are beneficial due to:

Firstly, it is assumed that ‘involving intermediaries in the delivery of public services will allow government to expand the overall number of delivery channels over time and enable us to offer public services in attractive, innovative and customer centric ways’ (OeE, 2003, pp.20). Secondly, it is believed that intermediary organizations will play a key role in driving up take up levels for electronic services. Thirdly, in terms of the benefits to government, it is believed that creating a marketplace of competing intermediaries in any particular service area will drive down the costs of government (OeE, 2003, pp.19). These three benefits also help in managing the key risks associated with the e-government agenda, namely the building of expensive online services.

Intermediary activities are also beneficial for users of public services, both citizens and businesses, because users will enjoy the advantages of more choice and convenience in how they access services and also because intermediary organizations are likely to have more effective and efficient front end delivery systems than government. Since intermediaries are always trying to
add more value to the relationship with citizens and they are also operating within a framework of market competition, it is more likely to enjoy ongoing attractive service innovations.

2.6 Iranian E-government model

Iran’s approach to e-government has been along the same lines as most developing countries, with improving and streamlining the government’s operations being the main focus. While the social and political aspects have not been the major concerns behind Iran’s plans for e-government, these plans have had considerable impact on the society and have also been impacted by the state’s political situation and structure.

In the case of Iran, religion shape and justifies the ways to protect the society against unethical effects of the Internet. This resistance, however, does not seem to stop the moves inside the developing countries towards e-government, although they might slow them down for some Time. Therefore, providing a clear definition for e-government in Iran to encompass its specific cultural, social, and political characteristics, and also its actual and potential position with regard to access to science and technology, will be an important measure in ensuring its Success.

In 2001, Iran’s e-government was ranked as the 44th among 196 countries in the ranking study conducted by the (World Market Research Centre, 2001), which was above most developing nations. However, in the study undertaken by the UN in 2003, Iran has been assessed for e-government readiness and given the score of 0.33, placing Iran 107th among 173 countries. During June and July 2006 Brown University has completed its sixth annual analysis (from 2001 to 2006) of online government services, which was done between 1,782 government Web sites in 198 countries and given the score of and placing Iran 102th among these 198 countries. This downfall is partly the result of the limitations the plan has faced as a result of the sociopolitical reactions to the changes brought about by the movement. This downfall continues and in 2008, Iran’s score for readiness is 0.4067 and placing Iran 108th among 192 countries. From a conceptual point of view, e-government in Iran is perceived as a new performance level including reducing the operations cycle Time; responding to impatient and demanding citizens in
receiving quality, cheap, and immediate services; and also satisfying the government staff, who themselves suffer from the shortcomings of the systems.

For implementation of e-government in Iran, it should be pointed that a few percentages of people have access to the computer and have enough knowledge to use the internet. Therefore, government considers to present e-government services in the some service providers centers where the employees do what the citizens should done according to the internet via internet therefore, these centers act as the intermediaries.

2.7 Iranian E-government services

In direction of achievement of e-government, the “police + 10” started its activities under surveillance of the “NAJA research and developing” company while this company is affiliated to “NAJA cooperative foundation”. The “NAJA research and developing” company has other services in addition to “police + 10” which are:

- GPS (global positioning system): this system is installed on the buses and help to determine the location and speed of the bus and also in streets and exhibitions.
- Security tools: such as sensors, shockers and camera
- Support the systems of borders for exiting/entering from/to country through online services

The “police + 10” project began with three services which was to change or duplicate copy of driving license, to change or issue passport, and to issue car clearance at the end of 2003, when it had some problems. Full services began in the 2004. In the 2006 another service is added to these services which are for Intelligent Fuel Card. The most important reasons for developing these services were for decreasing the length and number of city’s travels, increase the speed of access to these services and also developing an information and communications technology to monitor and improve the quality of decision making in fuel consumption.

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1 Police force of Iran
At the first, there were only fifteen centers to offer these services nationally but now these centers have been increased to 433 which 73 of them are in Tehran, which are welcomed by citizens. According to the first phase of this project, these services are as follow:

1. Changing driving license  
2. Duplicating of car license  
3. Issuing passport  
4. Changing passport  
5. Issuing car clearance  
6. Issuing a conscription booklet  
7. Applying for exemption from conscription  
8. Requesting proof of conscription completion  
9. Trade permit  
10. Issuing police clearance  
11. Renewing license plate  
12. Car ownership transfer  

Although, some of these services such as trade permit, issuing police clearance, renewing license plate, and car ownership transfer are not done at Police + 10 at the moment.

### 2.8 Customer satisfaction

According to the marketing literature reviews, customer satisfaction depends on the product and service’s perceived performance relative to the users’ expectation (Armstrong, 2004). Bitner and Hubbert suggest that “the consumer’s overall dis/satisfaction with the organization based on all encounters and experiences with that particular organization.” (Bitner and Hubbert, 1994).

“Satisfaction is the consumer’s fulfillment response. It is a judgment that a product or service feature, or the product of service itself, provided a pleasurable level of consumption-related fulfillment, including levels of under- or over-fulfillment…” (Oliver, 1997).
This is a remarkable definition. First, the focus is on a consumer rather than a “customer.” Traditionally speaking, the consumer uses a product or service, whereas a customer pays for the product/service but may not be the consumer (that is, the direct user). Granted, this is a fine distinction that gets lost in daily rhetoric, but it makes a difference in a researcher’s modeling of satisfaction. Satisfaction with a product/service is a construct that requires experience and use of a product or service (Oliver, 1997). Individuals who pay for a service but who do not use this service should not be expected to have the type of dissatisfaction or satisfaction that a service user (the consumer) will have. So we need to realize that the concept of customer satisfaction is about consumer satisfaction (that is, user satisfaction), rather than about buyer satisfaction (which may include non-users).

Second, satisfaction is a feeling. It is a short-term attitude that can readily change given a constellation of circumstances. It resides in the user’s mind and is different from observable behaviors such as product choice, complaining, and repurchase.

Third, satisfaction commonly has thresholds at both a lower level (insufficiency or under fulfillment) and an upper level (excess or over-fulfillment). This means that a consumer’s satisfaction may drop if she/he “gets too much of a good thing.” Many people focus upon the lower threshold and neglect the potential for an upper threshold.

Expectations have a central role in influencing satisfaction with services, and these in turn are determined by a very wide range of factors. In particular, it is argued that expectations of public services can be influenced by views of government and politicians. Expectations of public services are not only influenced by direct communications from the service, or even what the media says about service itself, but also the reputation of the government as a whole.

Customer satisfaction is one of the key elements in total quality management (TQM), an approach that emphasizes overall satisfaction through the continuous improvement of products and services. Construction companies are adopting TQM to improve their performance. The core of TQM is the customer-supplier interfaces, both externally and internally, and at each interface lie a number of processes. This core must be surrounded by commitment to quality, communication of the quality message, and recognition of the need to change the culture of the organization to create total quality. These are the foundations of TQM, and they are supported by
the key management functions of people, processes and systems in the organization (Department of Trade and Industry, 2006). In addition, there is much dissimilarity between manufacturing and construction, so TQM techniques must be adapted for the construction industry. Understanding the customer’s requirements is essential in ensuring customer satisfaction, and the demand for the construction product must be viewed in relation to the intended use of the facility.

Bailey and Sammy W. Pearson, (1983) used Wanous and Lawer, (1972) model for their research about ‘Development of a tool for measuring and analyzing computer user satisfaction’. They suggest that satisfaction is the sum of one’s positive and negative reaction to a set of factors. Implementation of this model centers on two different requirements. First, the set of factors comprising the domain of satisfaction must be identified. Second, a vehicle for scaling an individual’s reaction to those factors must be found.

CMT (Common Measurements Tool approach developed in Canada, which combines elements from a number of models) is the result of an extensive study by researchers at the Canadian Centre for Management Development and others, which examined a number of approaches to standardizing measurement of customer satisfaction with public services. The model they have developed provides a useful example of how elements of different approaches can be combined to improve our understanding of satisfaction and highlights priorities for improvement.

In recent years, some authors have used structured methods such as questionnaire (Cohen, 2006) to study citizen satisfaction with contacting government on the internet, or (Holzer M., 2006) used a questionnaire to study citizen satisfaction survey following the Seoul metropolitan government model. After understanding all variables which can affect the citizen satisfaction and make e-government inefficient, the results might help to explore the base of these inefficiencies and help to improve the e-government in a more efficient way.

Citizen surveys engage constituents within a given jurisdiction and focus more on general governance issues (e.g., program spending and priorities, strategic directions, and resource allocation) which do not necessarily require previous contact with a specific service (Dinsdale and Marson, 2006). On the other hand, citizen survey is viewed as an instrument to increase citizen participation. The purpose of the citizen satisfaction survey was to gauge public opinion
to ascertain what citizens liked best and liked least to determine the level of citizen satisfaction with service delivery.

2.9 Source of Satisfaction (According to Cohen Survey)

According to the survey which was done on the satisfaction with USA contact experience of citizens using the internet to contact government by Cohen, four major categories of factors are identified: type of people who contact government, reasons for the contact, level of government contacted, and the outcome and processes of the contact experience. He mentioned the characteristics of the person contacting government may affect satisfaction with their contact experience. Some people may be more comfortable with contacting government and/or dealing with people in authoritative positions, and thus, they may find their government contact experience more satisfying than people less comfortable in such situations. Reasons for contact were other important categories he mentioned. He believed people contact government for many reasons, ranging from trying to influence public policy, addressing personal concerns and problems, carrying out a government related transaction, locating information about government services and benefits, among other reasons. The variety of reasons that motivate citizens to contact government reflects the degree to which modern government affects society and the economy and touches on the lives of its citizens, either directly or indirectly. The process of the government contact experience and its outcome may also affect people’s evaluation of that experience. Sometimes the process runs smoothly and the citizen is treated well, perhaps better than expected. It would be expected that under those conditions, citizens should be quite satisfied with their contact experience. (Cohen, 2006)

At the end of that survey Cohen concluded there are many sources of dissatisfaction with the government contact experience. The results of his survey showed that technology itself is not the answer to citizen dissatisfaction when contacting government. Pre-existing expectations, problems encountered with the contact, and Success with the encounter all strongly affect satisfaction levels. The internet, as a contact mode, is not immune to these issues and in some cases may exacerbate dissatisfaction. One of the greatest sources of dissatisfaction in using the internet concerned not receiving a reply to an email. Another source of dissatisfaction concerned
the inability to get a problem resolved. What these two sources of dissatisfaction may have in common is the need for a government response to the citizen. At the end he pointed that unless the internet can be designed such that citizens can accomplish their contact goal without the assistance of a government employee, the internet may have little impact on satisfaction levels for contacts that require a government response and/or that require a government employee’s action with regard to the citizen contact. In other words, whether a citizen uses email or the telephone in the search of an answer to a question or the resolution to a problem may not matter if the citizen expects and/or needs a government employee’s personal attention to that contact. Addressing citizen satisfaction with contacts that require a government employee response is more a matter of the human resources of government than technological solutions. (Cohen, 2006)

2.10 Satisfaction Model

According to customer satisfaction definition the one of the traditional customer satisfaction shows in Figure 2-1. This model underlies much of the research in customer satisfaction over the past decade.

![Diagram of Traditional Customer Satisfaction Model](image)

**Figure 1**: Traditional Customer Satisfaction Model (Woodruff and Gardial, 1996)

According to this model, these factors can conclude: (Hom, 2000)

1. Perceived performance often differs from objective or technical performance, especially when a product/service is complex, intangible, and when the consumer is unfamiliar with the product/service.
2. Comparison standards can come from numerous sources that can vary widely by individual, by situation, and by product/service type.

3. Perceived disconfirmation is the evaluation of perceived performance according to one or more comparison standards. Disconfirmation can have a positive effect (generally implying a satisfying result), a negative effect (generally implying a dissatisfying result), or a zero effect.

4. Satisfaction feeling is a state of mind, an attitude. The phrase “mixed feelings” applies here, as a consumer may have different levels of satisfaction for different parts of a product/service experience.

5. Outcomes of satisfaction feelings may involve intent to repurchase, word-of-mouth (the consumer’s communication with her/his network of her/his approval/disapproval for a product/service), and complaints. These outcomes also are moderated by other variables. For example, extreme dissatisfaction will not necessarily generate complaint behavior, especially if the consumer believes complaining will be futile.

Woodruff and Gardial latest produced new model which shows in Figure 2. This model highlighted the concept of value as a driving force in product choice and satisfaction’s relationship to it as a brief psychological reaction to a component of a value chain (Woodruff and Gardial, 1996).

![Figure 2: Model of Linkage of Customer Value Chain to Customer Satisfaction (Woodruff & Gardial, 1996)](image-url)
After Woodruff and Gardial, Oliver provided another version of this model, which shows in Figure 3. An important point about customer value models is the use of gross benefit-cost judgments by consumers. (Oliver, 1999)

Some models differentiate between technical service quality and perceived service. One of these models shows in Figure 4. This model is explicit about the cyclical, feedback loop that affects satisfaction. A consumer’s prior experience joins “other data inputs” to shape current satisfaction with a service. (Bateson, 1991).
One of the dominant, theoretical models that have begun to emerge from the e-marketing literature to assess the quality is SERVQUAL model. According to Parasuraman (1988), in order to improve service quality, it must be reliably assessed and measured. According to the SERVQUAL model (Parasuraman et al., 1988) service quality can be measured by identifying the gaps between customers’ expectation of the service to be rendered and their perceptions of the actual performance of the service. The SERVQUAL model contains five dimensions of service quality namely, tangibles, reliability, responsiveness, assurance and empathy (Parasuraman et al., 1988). SERVQUAL as the most often used approach for measuring service quality has been to compare customers' expectations before a service encounter and their perceptions of the actual service delivered. The model of service quality gaps is clarified in Figure 5 (Parasuraman et al., 1988).

![Figure 5: Model of service quality gaps (Parasuraman et al., 1988)]
Another important Model, which researchers used in their research for measurement the satisfaction of users is, “IS Success” model by Delone and McLean. The original model is shown in Figure 6.

![Delone and Mclean IS Success model](image)

**Figure 6:** Delone and Mclean IS Success model (Delone and McLean, 1992)

### 2.11 Conceptual Framework

Similar surveys are accomplished such as “City of Ottawa Citizen Satisfaction Survey” (Ekos, 2004) and “Citizen Satisfaction with contacting government on the internet” (Cohen, 2006). According to Cohen (2006) study, some factors considered that affect citizen satisfaction level, which comes from Pew 2003 survey. Cohen (2006) and Pew (2003) four major categories of factors are identified: type of people, reasons for use, level of government, and the outcome and processes of using experience. Therefore, we used Cohen (2006) and Pew (2003) factors in their survey; however, based on centralized government in Iran, “level of government” was eliminate.

The process of using e-government services experience and its outcome may also affect people’s evaluation of that experience. Sometimes the process runs smoothly and the citizen is treated well, perhaps better than expected. We would expect that under those conditions, citizens should be quite satisfied with their experience. The nature of the problem that citizens face in e-government services experience may similarly affect how smoothly the e-government services run. Citizens are likely to expect that easy problems should result in a smooth encounter with government, while harder problems may make for a rockier experience. Finally, the outcome of
the e-government services should affect citizen evaluations. Those who felt that they succeeded, that they got what they needed, be it an answer to a question, information, and/or the resolution of a problem, should be more likely to feel satisfied with e-government services than those who not. (Cohen, 2006)

The Pew Survey asked respondents several questions that relate to the process associated with e-government services. As to process, Pew asked respondents how much time the e-government services took: more, less or about the amount that they expected. The nature of the e-government services that citizens used also seems to affect satisfaction. Those who described e-government services as very urgent and ease of use were much more satisfied with e-government services than those who did not describe e-government services as urgent and ease of use. The successful resolution of a problem, the outcome, strongly affects satisfaction. Those who said that their issues were successful resolved were satisfied, who claim that their issues did not lead to a successful resolution was satisfied. (Cohen, 2006)

Therefore, according to Cohen (2006) and Pew (2003) study, the process and outcome factors are: Urgency, Complicated, Time expected, and Success, which will use in the conceptual model and hypothesis. (Cohen, 2006)

Information System (IS) refers to a physical process that supports an organizational system by providing information to achieve organizational goals (Turban, et. Al., 2008). While Information System Assessment (ISA) refers to the measures of information systems, the purpose of this study is to understand the assessment measure of citizens’ satisfaction from the e-government service providers. The potential construct is investigated in an attempt to explore the relationships among IS structure.

DeLone and McLean (1992) argue that when measuring IS Success, researchers should “systematically combine” measures from their six IS Success categories. They also stress the need for additional research to test the model and for the selection of measures of each IS Success dimension. They present their results in terms of an IS Success Model as follows:

“System quality” and “information quality” singularly and jointly affect both “use” and “user satisfaction”. Additionally, the amount of “use” can affect the
degree of “user satisfaction” positively or negatively- as well as the reverse being true. “Use” and “user satisfaction” are direct antecedents of “individual impact”; and lastly, this impact on individual performance should eventually have some “organization impact”.” (pp. 83)

By adopting DeLone and McLean (1992) framework and focus on the most important issues, which are addressed in Cohen (2006) and Pew (2003) study, conceptual framework of this study is presented in Figure 6.

![Figure 7: IS Success model in my case](image)

It will be seen that some part of DeLone and McLean IS Success model is eliminated by the customizing model for this case because of different factors. The most important factor is because the system is new and leads to elimination of some features in the basic model. Therefore, the IS assessment (ISA) domain in this study will test the entire comprehensive model.
Chapter 3: Methodology

So far the literature of e-government and customer satisfaction has been reviewed and Iranian e-government model has been introduced. Conceptual Framework for this research mentioned. In this chapter, different part of research methodology will introduce, and then hypotheses are indicated.

3.1 Research Purpose

According to (Saunders et al., 2007), enquiries can be classified in terms of their purpose as well as by the research strategy which is used. The classification which is most often used is the three-fold one of exploratory, descriptive and explanatory:

- **Exploratory**: is familiar with the basic facts, setting and concerns, create a general mental picture of conditions, formulate and focus questions for further research. Generates new ideas, conjectures, or hypothesis, determine the feasibility of conducting research and develop techniques for measuring and locating future data.

- **Descriptive**: provide a detailed, highly accurate picture, locate new data that contradict past data, create a set of categories or classify types, clarify a sequence of steps or stages, document a causal process or mechanism and report on a background or context of a situation.

- **Explanatory**: test a theory’s predictions or principle, elaborate and enrich a theory’s explanation, extent a theory to a new issues or topics, support or refute an explanation or prediction, link issues or topics with a general principle and determine which of several explanations are best.

This research is mainly descriptive because in descriptive research design goes a bit further than theories and tries to describe different characteristics of a phenomenon. The descriptive research will require a theory to guide the collection of data (Yin, 2003); also Satisfaction factors of E-government services are described in Iran’s unique and new environment.
3.2 Research Approach

There are two main research types: qualitative and quantitative (Creswell, 2003). Quantitative is used commonly when the purpose is to test the hypothesis and generalize the results (Yin, 2003). Thus quantitative methods are concerned with numeric methods and statistics, and associated with large amount of sample, high concern for representative and highly structured method for data collection (cooper 2003). Where there is a limited understanding of a phenomenon, a qualitative research approach is preferred, as it can be more exploratory and allows the researcher to be very descriptive (cooper 2003). Also qualitative research concerns data with words and description (Yin, 2003). Qualitative research often implies small samples, little concern for representative, and unstructured methods for data gathering.

Since in this research, try to use from the existing models and test it in the context of Iran by using from statistical techniques, quantitative research will consider.

3.3 Research Strategy

The research strategy is a general plan of how researcher will go about answering the research questions which has set. It will contain clear objectives, derived from research questions, specify the sources from which researcher intent to collect data and consider the constraints that researcher will inevitably has (Yahyapour, 2008).

According to Yin, there are number of approaches for a researcher to conduct empirical data collection. Depending on the character of research question, the researcher can choose between an Experiment, a Survey, an Archival Analysis, History and a case study (Yin, 2003). These are shown in table below:
Table 1: Relevant Situations for Different Research Strategies

<table>
<thead>
<tr>
<th>Research Strategy</th>
<th>Form of Research Question</th>
<th>Requires Control over Behavioral Events</th>
<th>Focuses on Contemporary Events</th>
</tr>
</thead>
<tbody>
<tr>
<td>Experiment</td>
<td>How, why</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Survey</td>
<td>Who, what, where, how many, how much</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>Archival Analysis</td>
<td>Who, what, where, how many, how much</td>
<td>No</td>
<td>Yes/no</td>
</tr>
<tr>
<td>History</td>
<td>How, why</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Case Study</td>
<td>How, why</td>
<td>No</td>
<td>Yes</td>
</tr>
</tbody>
</table>

Survey is a technique in which information is collected from a sample of people through a questionnaire. According to Yin (2003), a Survey is research strategy which consists of “who”, “what”, “where”, “how many” and “how much” forms of research questions (Yin, 2003). As this study aim to find out the measure of satisfaction of E-government by Iranian customers, the strategy which suit for this study will be survey. This choice is partly determined by one of our research approaches, quantitative nature.

3.4 Sample Selection

The sampling techniques can be divided into two types (Saunders et al, 2007):

- Probability or representative sampling
- Non-probability or judgmental sampling
According to (Saunders et al. 2007) with probability samples the chance, or probability, of each case being selected from the population is known and is usually equal for all cases. For non-probability samples, the probability of each case being selected from the total population is not known and it is impossible to answer research questions or to address an objective that requires statistical interference about the characteristics of the population. Therefore, probability sampling is more suitable for this research. There are different kinds of Probability samples, which are Simple Random, Systematic, Stratified Random, Cluster, and Multi-Stage. (Saunders et al., 2007)

- Simple Random Sampling: Probability sampling procedure that ensures that each case in the population has an equal chance of being included in sample.

- Systematic Sampling: Probability sampling procedure in which the initial sampling point is selected at random, and then the cases are selected at regular intervals.

- Stratified Sampling: Probability sampling procedure in which the population is divided into two or relevant strata and a random sample (systematic or simple) is drawn from each of strata.

- Cluster Sampling: Probability sampling procedure in which the population is divided into discrete groups or clusters prior to sampling. A random sample (systematic or simple) of these clusters is then drawn.

- Multi-Stage Sampling: Probability sampling procedure that is a development of cluster sampling. It involves taking a series of cluster samples, each of which uses random sampling (systematic or simple).

Whereas in this research the sample will selected from the Iranian citizens who use from the E-government services Random sampling is the best one.
3.5 Sample Size

Population of this research is Iranian citizens, which is so huge and study all of them will be impossible. For this study a random sample of e-government services users was selected. This sample was selected from Tehran and from one of the service providers’ center. The sample size is determined by Equation (1):

\[ N = \frac{0.25(Z_{\alpha/2})^2}{\beta^2} \quad (1) \]

N is sample size, \( \beta \) is margin of error; Z is reliability factor and \( \alpha \) is confidence interval.

A pre-sample with 50 questionnaires is completed. From the results, an approximation of \( \beta \) is found, 0.139, with the 95 percent confidence interval (\( \alpha = 95\% \)). But for more accuracy it is preferred to decrease the margin of error to 0.05, therefore, the sample size was increased to about 385.

\[ N = \frac{0.25(Z_{\alpha/2})^2}{\beta^2} \Rightarrow N = \frac{0.25(1.96)^2}{0.05^2} \Rightarrow N \approx 385 \]

3.6 Data collection

The data collection can be classified as primary versus secondary data. Primary data is gathered and assembled specifically for the research project at hand (Zikmund, 2000). Secondary data has already been collected for purposes other than the problem at hand. Secondary data is often found inside the company, in the library, on the internet, or it can be bought from organizations providing information on different subjects. Secondary data can be collected more quickly and more cheaply than primary data and has shown to be useful when performing exploratory studies since it saves the researcher from reinventing the wheel. However, what is worth remembering is that secondary data has been collected for another purpose and thereby might not meet the needs of the researcher or the data might be out of date. (Zikmund, 2000). Therefore, secondary data is not so much useful for this study, and primary data is most suitable.
Primary data collection can be done through various methods, such as: In-depth Interview, Focus Group, Nominal Grouping, Observation, Document Review, Questionnaire, and Structure Interview.

To verify the hypothesis it is intended to gather large number of data from the selected groups using a questionnaire method. This method was selected since a large number of quantifiable data was needed in order to find the affective factors in citizen satisfaction from e-government services. Also in data gathering it was preferred to avoid any presumption both before and through the data collection. In other words the data gathering technique in this research is trying to collect data in a way that does not impose any idea to the respondent’s minds, as it is preferred that individuals respond without any wrong interpretations.

### 3.7 Questionnaire

Similar surveys are accomplished such as “City of Ottawa Citizen Satisfaction Survey” (Ekos, 2004) and “Citizen Satisfaction with contacting government on the internet” (Cohen, 2006).

Based on these studies, it is preferred to use questionnaire for the research since it is one of the most common tools of social research using a set of similar questions administered to a large number of people in very fact and efficient way. Questionnaire may be made up of closed or open questions. Each of them has advantages and disadvantages.

This questionnaire is adapted from “Jeffrey.E Cohen” survey about “Citizen Satisfaction with contacting government on the internet” which it also used by the analysis of the July 2003 Pew e-government Survey and customized it according to the survey. Given the limited diversity of races in Iran and centralized government, the research does not consider race and level of government parameters as relevant factors. So, this questionnaire consists of 8 multiple choice questions about general information of respondents and 13 Likert scale questions. The multiple choice questions are about sex, age, education, income, disability, computer access, occupation, and reason to use. The Likert questions are about Urgency of system, Ease of Use, Time expected, and Success and their sub-questions. The questionnaire is presented in Appendix 1.
As I explained, used from “Jeffrey.E Cohen” questionnaire in his “Citizen Satisfaction with contacting government on the internet” survey. Therefore, I sent a email to Jeffrey.E Cohen to give a permission to used from his questionnaire. I attached the permission letter and its answer in the Appendix 2.

**Personal information:**

The citizens are asked about some personal issues (such as sex, age, education, income, disability, computer access and occupation) to analyze which group of citizens are more satisfied with these services.

**Usability:**

The citizens are asked about whether they have experienced any problems using the service by the complication (Is it easy to use the service?) question. If a user experiences problems with any of these aspects, he/she may be less likely to use these e-services in the future.

**Benefits:**

The benefits experienced by the citizens are also measured in this research. Some questions such as Urgency of system (this question show that how citizens feel about the Urgency of this system in different point such as save money, better control over process, faster reply, received better services) and Time expected (cause save Time) show the benefits. If citizens recognize that these services are more urgent and efficient, they may be more likely to use them in future.

**Overall evaluation:**

The citizens are asked to rate the services of Success. The most important factors in this evaluation are the user’s overall satisfaction with the service and whether the users’ expectations are met or not.
In addition to these elements, there are other elements that have great influence on the citizens’ satisfaction from the service providers but these elements are intangible such as current conditions of citizens.

3.8 Research hypothesis

In this sub-section according to the conceptual frameworks and factors which comes in it, the research hypothesis will define.

Traditionally in Iran women work at home and their husbands or fathers do their outdoor activities. So, it will be expected the number of men who come and use e-government services are different from women. Gender inequalities, resulted in different social roles for men and women (Giddens, 2001). Research has shown that women’s position in the labor market is crucially affected by their predominant role in the maintenance of family in particular in the upbringing of child (Morgan, 1990). Therefore, in this study the first hypothesis is about gender disparity in e-government service use.

H1: men proportion who use e-government services in the service providers are different from women

Among the demographic variables, age and education have shown to influence the IT use in some contexts. As expected, higher educational achievement and lower age both seem to influence IT use positively, but their correlation is weak (Dillion, 2001). This is because younger or educated people are more familiar with this technology and know the advantages of this way of presenting services. It can conclude that citizens with higher education and lower age use more services. Besides, more educated and younger citizens benefit from using these services those others. Therefore, a hypothesis is shape accordingly.

H2: There is a positive correlation between higher educated and younger citizens with the Urgency of the system
Daniel Hamermesh note that people with more money have more options, but are left with little Time (Hamermesh, 2005). From this it is concluded that people with more incomes have more satisfaction from the e-government services because of their limited Time. This is a base for another hypothesis about e-government services:

\[ H_3: \text{citizens with more income found e-government more Successful} \]

According to innovation diffusion theory (Rogers, 2003), five characteristics of technology determine its acceptance which are relative advantage, compatibility, complexity, trialability, and observability. In addition, Technology Acceptance Model (TAM) (Davise et al, 1989) predicts user acceptance of any technology is determined by two factors which are perceived usefulness and perceived Ease of Use which are presented as in the original TAM. Another important factor is response Time which is a measure of the Time taken to fix disruptions of service at the customer end. All indicators suggest that Timely response and uninterrupted service are critical in today’s competitive environment (Information Technology and Management, 2003). Therefore:

\[ H_4: \text{There is a relationship between the Success of system and the Ease of Use, Time, and Urgency of the system.} \]

For understanding the correct view of the citizens’ satisfaction from each services which is presented by service providers, it is necessary to understand what is the citizens’ idea about the Success of each services. It is important to understand what services are more Successful. Therefore, we start this analysis by:

\[ H_5: \text{Passport Success} = \text{Driving License Success} = \text{Issue car clearance Success} = \text{Intelligent fuel card Success} \]
As mentioned before, Time is an important factor in the consumer satisfaction, therefore, it is important to understand that Time spent for all services is significantly equal for different services:

\[ H_6: \text{Service Time for Intelligent fuel card} = \text{Service Time for Issue car clearance} \]
\[ = \text{Service Time for Passport} = \text{Service Time for Driving License} \]

At the end, for testing the IS Success model (As it is shown in Figure 7) \( H_7, H_8 \) and \( H_9 \) should be tested which are as follow:

\[ H_7: \text{There is a relationship between Time expected from the citizens’ point of view and the Urgency of the system} \]

\[ H_8: \text{There is a relationship between Ease of Use of the system from the citizens’ point of view and the Urgency of the system} \]

\[ H_9: \text{There is a relationship between Success of the system from the citizens’ point of view and the Urgency of the system} \]

3.9 Analysis

Analysis in this research will be done by the use of some statistical software such as SPSS, and use from some statistical method such as descriptive methods and deduction methods.
Chapter 4: Analysis

As mentioned before citizens’ satisfaction of e-government services is of crucial importance for government. The research design of this study was described in the previous chapter. In this chapter based on the collected data from the survey, descriptive analysis is performed and hypotheses are tested. An understanding of citizens’ satisfaction is obtained from this analysis that in turn can be used in further decisions regarding e-government services development.

4.1 Descriptive analysis

Descriptive analysis includes graphical and numerical procedures that summarize and process data and are used to transform data to information. Data collections were performed through the Iranian citizens from the beginning of February to beginning of March 2010. As explained before, at first a pre-sample with 50 questionnaires is completed, then for more accuracy the sample size increased to 385 questionnaires.

4.1.1 General Questions Results

Table 2 shows the descriptive analysis by SPSS. According to this table it can be concluded that 54.8% (211) of respondents were male and 45.2% (174) of respondents were female.

Moreover, according to table 2, we can clearly observe that the respondents between 30 and 39 were the biggest group of age with 43.1% (166). However, the respondents between 60 and 69 years old and more than 70 years old represent were the fewer group with 4.4% (17) and 2.6% (10). This is probably due to the fact that in those groups of age, others people do their activities not themselves.

Regarding the education aspect, from the total number of respondents, 82 (21.3%) did not have diploma. 79 (20.5%) had a diploma, 178 (46.2%) had a bachelor degree, 22 (5.7%) had a Master degree, and finally 24 (6.2%) had a Ph.D. degree. These data shows that the percentage of each
education group in e-government users are about the percentage of each groups in Iran society. Therefore, as it can be seen most of the respondents had Bachelor degree.

One of the most important factors in satisfaction and use of e-government services is the income of citizens who use these services. From this survey it is understood that most users of these services (78.9%) are people with the income of less than 500,000 to 1,000,000.

Disability factor referred to the people who have not ability to do their activities by themselves either physical disability, mental disability or disability according to their age. As it mentioned in table 2, 97.7 percent of people who use these services have not any disability, while 2.3 percent have one of type of disabilities.

Descriptive analysis of collecting data shows that 70.1 percents of respondents (270 of 385) had access to computer and 29.9 percent of them had not access to computer. This result is almost same as the percentage of people who access to computer in Iran. This was because these data are small sample of Iran population.

As it shown in table 2, most people who used e-government services have private work (223 from 385) with 57.9 percent and only 53 (13.8%) of them are jobless, therefore, residual (109 of 385) are member of staff.

It this survey, research was done on the four importance activities (Issue car clearance, Intelligent fuel card, Passport, and Driving license) which were done by E-government services in Police+10 centers. As it is obvious in table 2, the usages of these services are so closed and are about 25 percent in each activity.
<table>
<thead>
<tr>
<th>Table 2: Descriptive Analysis</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Gender</strong></td>
</tr>
<tr>
<td>Male</td>
</tr>
<tr>
<td>Female</td>
</tr>
<tr>
<td>Total</td>
</tr>
<tr>
<td><strong>Age</strong></td>
</tr>
<tr>
<td>18-29</td>
</tr>
<tr>
<td>30-39</td>
</tr>
<tr>
<td>40-49</td>
</tr>
<tr>
<td>50-59</td>
</tr>
<tr>
<td>60-69</td>
</tr>
<tr>
<td>+70</td>
</tr>
<tr>
<td>Total</td>
</tr>
<tr>
<td><strong>Education</strong></td>
</tr>
<tr>
<td>Under Diploma</td>
</tr>
<tr>
<td>Diploma</td>
</tr>
<tr>
<td>Bachelor</td>
</tr>
<tr>
<td>Master</td>
</tr>
<tr>
<td>Ph.D.</td>
</tr>
<tr>
<td>Total</td>
</tr>
<tr>
<td><strong>Income</strong></td>
</tr>
<tr>
<td>&lt;500,000</td>
</tr>
<tr>
<td>500,000-1,000,000</td>
</tr>
<tr>
<td>1,000,000-2,000,000</td>
</tr>
<tr>
<td>&gt;2,000,000</td>
</tr>
<tr>
<td>Total</td>
</tr>
<tr>
<td><strong>Disability</strong></td>
</tr>
<tr>
<td>Not Disable</td>
</tr>
<tr>
<td>Disable</td>
</tr>
<tr>
<td>Total</td>
</tr>
<tr>
<td><strong>Computer Access</strong></td>
</tr>
<tr>
<td>Access</td>
</tr>
<tr>
<td>Not Access</td>
</tr>
<tr>
<td>Total</td>
</tr>
<tr>
<td><strong>Occupation</strong></td>
</tr>
<tr>
<td>Jobless</td>
</tr>
<tr>
<td>Member of Staff</td>
</tr>
<tr>
<td>Private Work</td>
</tr>
<tr>
<td>Total</td>
</tr>
<tr>
<td><strong>Reason</strong></td>
</tr>
<tr>
<td>Issue car clearance</td>
</tr>
<tr>
<td>Intelligent fuel card</td>
</tr>
<tr>
<td>Passport</td>
</tr>
<tr>
<td>Driving license</td>
</tr>
<tr>
<td>Total</td>
</tr>
</tbody>
</table>
4.1.2 E-government Related Questions Results

As explained before, E-government related factors come from the conceptual framework. These factors measured by 5 Likert scale (1=Very Low to 5=Very High) by the questionnaire. These results show in table 3 and shows that the mean of all factors are above 3 which means respondents are measured these factors in the suitable conditions. From these factors Time is in the better condition according to the respondents’ view.

| Table 3: Descriptive Statistics |
|-------------------------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| N                | Minimum Statistic | Maximum Statistic | Sum Statistic | Mean Statistic | Skewness Statistic | Std. Error Statistic | Valid N |
| Urgency          | 385               | 2.33             | 5.00           | 1449.33        | 3.7645           | -.361           | .124           |
| Ease             | 385               | 1.50             | 5.00           | 1294.50        | 3.3623           | -.006           | .124           |
| Time             | 385               | 2.67             | 5.00           | 1602.67        | 4.1628           | -.172           | .124           |
| Success          | 385               | 2.00             | 5.00           | 1346.67        | 3.4978           | .046            | .124           |

4.2 Hypothesis testing

Hypothesis test decisions is a decision rule formulated, leading the investigator to either accept or reject the hypothesis on the basis of the sample evidence.

4.2.1 Gender differentiation

According to the first hypothesis, which focuses on the proportion of men, $p_m$, and women, $p_w$, users of the e-government services, we had the following hypothesis:

$H_1$: men proportion who use e-government services in the service providers are different from women
Table 4: Chi-square hypothesis for testing $H_1$

<table>
<thead>
<tr>
<th>Gender</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Chi-Square(a)</td>
<td>3.556</td>
<td></td>
</tr>
<tr>
<td>df</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Asymp. Sig.</td>
<td>.059</td>
<td></td>
</tr>
</tbody>
</table>

“Chi-Square” test is being used for testing this hypothesis. According to the Table 5.3, it is concluded that the hypothesis (men proportion are not different from women proportion) will be rejected because P-value is 0.059 which is more than 0.05 significant level (Hypotheses accept if P-value < 0.05). Therefore, it will be concluded that the number of men and women who used this services are same. From that result can be concluded that there are not difference between men and women.

Therefore, the reasons which we explained about the differentiation of men and women in the previous chapter (such as: traditionally in Iran women work at home and their husbands or fathers do their outdoor activities) were accepted in tradition day not today.

4.2.2 Age and Education influence

The next hypothesis which, was mentioned before was about the correlation between education and age of the citizens who use e-government services and Urgency of these e-government services. Therefore:

$H_2$: There is a positive correlation between the higher educated and younger citizens with the Urgency of the system

Correlation coefficient is used for testing this hypothesis which shows the correlation between some variables with a constant. In Equation (2), Y depends not only on the correlation between Y and $X_1$ but also by the correlation between $X_1$ and $X_2$, and the $X_2$ and Y.

$$\hat{y}_i = b_0 + b_1 x_{1i} + b_2 x_{2i} \quad (2)$$

The regression found according to data in table 5, therefore equation is:

$$\text{Urgency} = 3.275 + 0.023 \text{Age} + 0.171 \text{Education}$$
Table 5: Estimated coefficient for testing H2

<table>
<thead>
<tr>
<th>Model</th>
<th>Unstandardized Coefficients</th>
<th>Standardized Coefficients</th>
<th>t</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>B</td>
<td>Std. Error</td>
<td>Beta</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>(Constant)</td>
<td>3.275</td>
<td>.136</td>
<td>24.090</td>
</tr>
<tr>
<td>Age</td>
<td>.023</td>
<td>.030</td>
<td>.041</td>
<td>.759</td>
</tr>
<tr>
<td>Education</td>
<td>.171</td>
<td>.034</td>
<td>.269</td>
<td>4.999</td>
</tr>
</tbody>
</table>

Column 4: t
Column 5: Sig.

a. Dependent Variable: Urgency

According to the table 5, increase in age increase Urgency by 0.023 and increase in education increases Urgency by 0.171. It is concluded that older and higher educated citizens feel that system provider is more urgent. While the age has a lower influence on the feeling of citizens about the Urgency of the system in respect of education, the hypothesis will be rejected at the point that says younger citizens feel that system is more urgent.

4.2.3 Income influence

The next hypothesis which mentioned above is about the relationship between two factors (income and Success factor). Therefore:

H3: citizens with more income found E-government more Successful

Hypothesis should test the relationship between income of citizens and Success of the E-government services from the citizens’ point of view.

Table 6: Correlations coefficient for testing the relationship between income and E-government use

<table>
<thead>
<tr>
<th></th>
<th>Success</th>
<th>Income</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pearson Correlation</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Success</td>
<td>1.000</td>
<td>.243</td>
</tr>
<tr>
<td>Income</td>
<td>.243</td>
<td>1.000</td>
</tr>
<tr>
<td>Sig. (1-tailed)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Success</td>
<td>.000</td>
<td>.000</td>
</tr>
<tr>
<td>Income</td>
<td>.000</td>
<td>.000</td>
</tr>
<tr>
<td>N</td>
<td>385</td>
<td>385</td>
</tr>
<tr>
<td>Success</td>
<td>385</td>
<td>385</td>
</tr>
<tr>
<td>Income</td>
<td>385</td>
<td>385</td>
</tr>
</tbody>
</table>
The correlation coefficient gives us a measure of the strength of the linear relationship between two random variables, the measure is limited to the range from -1 to +1 (-1 ≤ r ≤ +1). -1 shows definitely negative correlation (as one of the factor increase other one will decrease and vice versa) while +1 shows definitely positive correlation (as one of the factor increase other one will increase too and vice versa). A zero value for “r”, therefore, does not necessarily mean “no relation”. Instead, it means “no linear relation” (Newbold, 2010). We would calculate the correlation coefficient by Equation (3):

\[ \frac{\sum xy}{\sqrt{\sum x^2 \cdot \sum y^2}} \]  

(3)

As it is obvious from the table 6, there is a linear relation between Success and income factor (r =0.243) which is Positive and very close to zero. Therefore, it is concluded a positive relationship exists between Success of the E-government services and incomes of the citizens which accept the null hypothesis.

### 4.2.4 Ease of Use, Time and Urgency influence

Next hypothesis which mentioned above is about the relationship between Success of system and the Ease of Use, Time, and Urgency of the system from the citizens’ point of view that use E-government services:

\[ H_4: \text{There is a relationship between the Success of system and the Ease of Use, Time, and Urgency of the system.} \]

For testing this hypothesis, multiple correlation technique is used which measures how Success is related to all the regressors (Ease of Use, Time, and Urgency of the system) at once.

**Table 7:** Multiple regressions for testing H4

<table>
<thead>
<tr>
<th>Model</th>
<th>R</th>
<th>R Square</th>
<th>Adjusted R Square</th>
<th>Std. Error of the Estimate</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>.533(a)</td>
<td>.284</td>
<td>.278</td>
<td>.52909</td>
</tr>
</tbody>
</table>

a. Predictors: (Constant), Urgency, Time, Ease of Use
b. Dependent Variable: Success
As it is obvious from Table 7, $R^2 = 0.284$, therefore 28.4% of variance in Success factor is explained by the three regressors (Urgency, Time, Ease of Use), leaving 71.6% (1-$R^2$) as residual variance. Therefore, the correlation regressors is low and hypothesis will be rejected. “In general, the higher the correlation of the regressors, the worse the problem of multicollinearity.” (Newbold, 2010).

4.2.5 Reason to use influence

The fifth hypothesis which mentioned above is about comparing different services according to their Success:

$$H_5: \text{Passport Success} = \text{Driving License Success} = \text{Issue car clearance Success} = \text{Intelligent fuel card Success}$$

Analysis of variance (ANOVA) can be used for comparing more than two groups:

**Table 8:** ANOVA for testing $H_5$

<table>
<thead>
<tr>
<th></th>
<th>Sum of Squares</th>
<th>df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between Groups</td>
<td>1.772</td>
<td>3</td>
<td>.591</td>
<td>1.529</td>
<td>.206</td>
</tr>
<tr>
<td>Within Groups</td>
<td>147.143</td>
<td>381</td>
<td>.386</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>148.915</td>
<td>384</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

In table 8 df is degree of freedom which obtains by putting the correct value of “a” (number of factors which should be analyze, 4) in the $(a - 1)$ formula. Residual degree of freedom is total df (number of observation, 385) minus regression df. Therefore df is equal to 3 and residual df is equal to 381. In addition, this table shows that p-value is 20.6 percent. Accordingly, the null hypothesis will be rejected at 95 percent confidence intervals (Hypotheses accept if P-value < 0.05), and it is concluded that the 4 services (passport, driving license, issue car clearance, and intelligent fuel card) have equal Success.
4.2.6 Time influence

The sixth hypothesis is about comparing different services according to their Time:

\[ H_6: \text{Service Time for Intelligent fuel card} = \text{Service Time for Issue car clearance} = \text{Service Time for Passport} = \text{Service Time for Driving License} \]

As it is mentioned in section 4.2.5, for comparing more than two groups ANOVA and be used as bellow:

Table 9: ANOVA for testing \( H_6 \)

<table>
<thead>
<tr>
<th></th>
<th>Sum of Squares</th>
<th>df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between Groups</td>
<td>.721</td>
<td>3</td>
<td>.240</td>
<td>.635</td>
<td>.593</td>
</tr>
<tr>
<td>Within Groups</td>
<td>144.190</td>
<td>381</td>
<td>.378</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>144.911</td>
<td>384</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

According to table 9, \( df \) is 4 and residual \( df \) is 381. It is also obvious that \( P \)-value is 0.593. Therefore, the null hypothesis is rejected at 95 percent confidence intervals, and it is concluded that the four services (passport, driving license, issue car clearance, and intelligent fuel card) have equal Time.

4.2.7 Analyze of IS Success model

As it is shown in Figure 7, for testing the IS Success model \( H_7, H_8 \) and \( H_9 \) should be tested which are as follow:

\[ H_7: \text{There is a relationship between Time expected from the citizens’ point of view and the Urgency of the system} \]

\[ H_8: \text{There is a relationship between Ease of Use of the system from the citizens’ point of view and the Urgency of the system} \]
H$_0$: There is a relationship between Success of the system from the citizens’ point of view and the Urgency of the system.

For testing these hypotheses correlation technique can be employed which shows that how the relationship between these factors is. As it mentioned before, the correlation coefficient provides a measure of the strength of the linear relationship between two random variables. Therefore:

| Table 10: Correlations coefficient for recognizing the correctness of H$_0$ |
|---|---|---|
| Pearson Correlation | Urgency | Time |
| Urgency | 1.000 | .224 |
| Time | .224 | 1.000 |
| Sig. (1-tailed) | Urgency | Time |
| Urgency | . | .000 |
| Time | .000 | . |
| N | Urgency | Time |
| Urgency | 385 | 385 |
| Time | 385 | 385 |

The next hypothesis is presented in table 10. It is shown that the strength of the linear relation between Urgency and Time expected is equal 0.224 (r= 0.224). As a result, although there is a relationship between these two factors (Urgency and Time expected), this relationship is too weak. Therefore, the hypothesis is not completely accepted.

| Table 11: Correlations coefficient for recognizing the correctness of H$_7$ |
|---|---|---|
| Pearson Correlation | Urgency | Ease |
| Urgency | 1.000 | .393 |
| Ease | .393 | 1.000 |
| Sig. (1-tailed) | Urgency | Ease |
| Urgency | . | .000 |
| Ease | .000 | . |
| N | Urgency | Ease |
| Urgency | 385 | 385 |
| Ease | 385 | 385 |

Table 11 depicts a linear relation between Urgency and Ease of Use equal to 0.393. This shows a positive relationship between Urgency and Ease of Use of the E-government services. Therefore,
although there is a relationship between these two factors (Urgency and Ease of Use), this relationship is too weak. Therefore, the hypothesis is not completely accepted.

<table>
<thead>
<tr>
<th>Pearson Correlation</th>
<th>Urgency</th>
<th>Success</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1.000</td>
<td>.407</td>
</tr>
<tr>
<td></td>
<td>.407</td>
<td>1.000</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Sig. (1-tailed)</th>
<th>Urgency</th>
<th>Success</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>.</td>
<td>.000</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>N</th>
<th>Urgency</th>
<th>Success</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>385</td>
<td>385</td>
</tr>
</tbody>
</table>

Table 12: Correlations coefficient for recognizing the correctness of $H_9$

The result of testing the last hypothesis of the IS Success model is presented in table 12 which shows the relationship between Urgency and Success of the E-government services. From this Table it is understood that the linear relationship between these two factors is equal 0.407 ($r=0.407$). Therefore, although there is a relationship between these two factors (Urgency and Success), but it is weak.

Testing these three hypothesis ($H_7$, $H_8$, and $H_9$) indicates that E-government services will not completely accepted according to the IS Success model. Consequently, the Success of E-government services is not lain in the IS Success model.

4.3 Soft issues analysis

My study about e-government citizens’ satisfaction revealed the rate of satisfaction from the delivery of services in different groups of citizens. But, it is realized that NAJA as an organization which has implemented the e-government, did not consider the soft issues which are crucial for success of e-government. In this section, major soft issues that seem to be relevant to my case study are elaborated.

4.3.1 Improvisation

Improvisation (Ciborra, 1996) is situated performance where thinking and action seem to occur simultaneously and on the spur of moment. Ciborra criticizes the emphasis given to formal,
methodical, pre-planned action, and his influence to shift emphasis towards considering improvisation is based on a phenomenological perspective of human behavior. Rather than talking about planning, correct formal design, and successful meeting business objectives, he proposes thinking in terms of ‘caring’, ‘hospitality’ and ’cultivation’ of technology in order to construct infrastructures that assist people to communicate, make sense of what they do, and in the way they act effectively (Avgerou, 1998).

From my studies about e-government in Iran, I came to know that the NAJA plans only for the development of e-government systems in Iran. It develops the systems in a formal and rational way without the consideration of how people behave when they are faced with the new system. Therefore, attention to the following factors can help the e-government to increase hospitality, caring and cultivation:

- The employees should justify the changes that happen in the delivery of the government services, which has not happened yet.

- The friendly system helps employees of the organization to work better and comfortable, while this system is not friendly.

- Although the layout of each organization is one of the basic aspect of each organization and important in its success however, in e-government system has not given enough consideration to this aspect.

- Financial dimensions are significant for all systems and organizations. According to my observation, there is no sufficient cooperation regarding these financial dimensions between NAJA and e-government service delivery centers.

- Prior experiences people have in the environment proved so helpful for the organizations. Therefore, the periodic researches such as this study can give a helpful feedback to this organization.
4.3.2 Soft System Methodology (SSM)

Soft Systems Methodology is as a technique for the software life cycle which was developed by Peter Checkland (Checkland, 2001). This methodology is a way of dealing with problem situations in which there is a high social, political and human activity component. This distinguishes SSM from other methodologies which deal with hard problems which are more technologically oriented. It assumes that each individual will see the world differently, which will often lead to different understandings and evaluations of situations. Inevitably, the culture and politics of an organization will include diverse views. The traditional SSM is divided into the seven stages which are shown in figure 8.

![Figure 8: Traditional SSM](image)

According to my observation of the e-government in Iran, it was realized that NAJA did not consider the e-government (G2C) as an integrated system but analyzed each of the subsystems as an island system. Therefore, Soft System Methodology can be used for removing this weakness. In addition to integration, SSM is useful for finding the requirements of the system. As it is obvious, the e-government has different stakeholders which have different needs and expectation.
from this system. Therefore, rich picture that used in stage two, can help the analyzer of the system to understand the different views of different people, and also can help the integration between different subsystems and people together in the graphical way.

Therefore, giving consideration to both issues (integration and requirements) simultaneously can be done through SSM which will help in the analysis and design of e-government.

4.3.3 Political Influence

The traditional IT strategy determined the ways in which an organization moved to its excellent condition, but Knights, Noble and Willmott (1997) discussed IT strategy in organization as a political process. In their words:

IT strategy is involved in the constitution of what is meaningful, becomes part of the internal self-discipline of subjects, provides a sense of security and confidence, and demonstrates managerial competence internally and externally.

(Knights, Noble et al. 1997 p.29)

As a result, they reverse the common logic that there is a formulation of an IT strategy to find out what is required and planned for its execution. Therefore, to find a good strategy for e-government which can satisfy citizens, it is important to consider the power and policy of country.

By careful consideration to the political conditions, it will be clear that there are some ministries which can be responsible for the e-government services. These ministries are ministry of information, ministry of interior, ministry of information and communication technology, and president office.

Although the ministry of information prefers to monitor all the confidential and non-confidential information of the country, it cannot be responsible for the e-government services because this ministry is far from being the provider of services for citizens. Ministry of information and
communication technology is very technical, so it cannot do these services which are not very technical.

President office is a good choice for doing the e-government services because it maintains its dominance of all issues of the country. But because other issues have priority over the e-government, president office did not accept the responsibility of the e-government services.

As mentioned before, the e-government services in Iran have been done by NAJA which is the executive part of the ministry of interior. But the study of the e-government in Iran shows this fact explicit, that they do not consider Knights’ factors. One of the important factor which is not considered is that NAJA has not enough competency for providing the e-government services, and it will be the reason why that the e-government cannot be extended in the long term. Therefore, according to the Knights, providing e-government services by NAJA is politically wrong.
Chapter 5: Conclusion

5.1 Summery

E-government is a major and new issue for many countries under radical change because it is more relevant to the information technology (IT) which develops in the radical speed. As a result, by attention to this point every country serves e-government services in different ways to citizens according to the citizens’ ability to use these services. This study is accomplished to survey the rate of citizens’ satisfaction from e-government services provided in Iran by the intermediaries. At the end some soft issues which are mentioned useful for satisfaction of citizens from e-government service delivery.

In this survey, 385 questionnaires which consist of 8 multiple choice questions about general information of respondents and 13 Likert scale questions were completed. These questionnaires were distributed in some of the e-government service providers’ centers of Tehran. People were selected randomly through the different levels of education, income and age.

The research concludes that overall view of most citizens about e-government services was that it is successful. In addition, it can be understood from this research that Iranian citizens’ satisfaction is not related to their personal attitudes and usability factors. This piece of information can be used as a guide for further researches and developments in the citizen’s satisfaction from e-government services in Iran.

5.2 Finding and Conclusions

In this survey some hypothesis defined and analyzed to explore the scale of Iranian satisfactions from E-government services in Iran. The first hypothesis which I tested was about the proportion of men and women who used from E-government services in Iran. After test the hypothesis according to collecting data it concluded that there are not some much differences between men
and women proportions. As a result, E-government service providers should attention to both men and women group as a same and not to any of them more than other.

The second hypothesis which I tested was about correlation between the higher educated and younger citizens with the Urgency of the system. In this hypothesis I considered that younger people with more education feel e-government more urgent. However, after testing the hypothesis it concluded that older and higher educated citizens feel that system provider is more urgent. In addition, hypothesis testing showed that age has a lower influence on the feeling of citizens about the Urgency of the system in respect of education.

Third hypothesis was about the relationship between income of citizens and Success of the E-government services from the citizens’ point of view. Testing this hypothesis showed that there were positive relationship between Success of the E-government services and incomes of the citizens. As we explained before e-government service providers are very helpful to decrease time expended in respect to previous way of offering government services. Accepting this hypothesis may happen because time is most important for people with more income in respect to people with less income because they are busier.

Forth hypothesis tested the relationship between Success of system and Ease of Use, Time, and Urgency of the system. According to analyzing the collecting data in concluded that 28.4% of variance in Success factor is explained by the three regressors (Urgency, Time, Ease of Use). Therefore, the correlation regressors is low which means that althoug I defined these three factors very important in success of the system, however only smal percentage of success of system defined by these three factors.

The Fifth hypothesis comprised the success of different services which offered in the E-government services providers. After ANOVA analysis of collecting data, it concluded that there are not any differencees between success of different services which offered in E-government services providers.

The sixth hypothesis comprised the time expended for doing the four different services (passport, driving license, issue car clearance, and intelligent fuel card) offered in E-government services
providers. According to the respondents’ view points, time expended for different services are equal.

At the end, three hypothesis defined for testing the IS model which proposed in the conceptual framework of sub-section. In these hypothesis tested the relationships of each two factors which are in relations with each other in the model (Urgency and Time, Urgency and Ease of use, and Urgency and Success). According to respondents’ view points; it concluded that, although there are the relations between these factors but the relationships are too weak. As result, the Success of E-government services is not lain completely in the IS Success model.

After analyzing the data which are collected according to the respondents’ view point, analyzed soft issues. Soft issue analysis of E-government in Iran shows that NAJA plans only for the development of e-government systems in Iran and it developed the systems in a formal and rational way without the consideration of how people behave when they are faced with the new system. Therefore some recommendation (such as Justify the changes by employees, provide friendly system, provide suitable layout, sufficient financial cooperation between NAJA and E-government service providers and using from prior experiences) increase the hospitality, caring and cultivation. In addition to Improvisation, it is important to considered Soft System Methodology (SSM). It was realized that NAJA did not consider the e-government (G2C) as an integrated system but analyzed each of the subsystems as an island system, and SSM can be used for removing this weakness. At the end, political issue is very important to consider. One of the important factor which is not considered is that NAJA has not enough competency for providing the e-government services, and it will be the reason why that the e-government cannot be extended in the long term. Therefore, according to the Knights, providing e-government services by NAJA is politically wrong.
5.3 Limitation of research

Limitations are an inherent part of any research. One of the main limitations of this study was that most citizens use these services for the first time. Therefore, they did not more valid idea about them. Another important limitation is that most of the citizens have not any idea about e-government services in other countries, therefore, cannot compare this condition with better conditions and is just comparable with traditional way of serving government services.

5.4 Future research

1. Exploring ways for increasing citizens’ satisfaction
   According to the research which I have done in this project, citizens’ satisfaction can be measured. Research can be extended to proposing ways to increase this satisfaction.

2. Best way for offering E-government service deliveries
   Impact of communication infrastructures on the citizens’ satisfaction is an interesting subject. In Iran, there are various communication infrastructures including dial-up, mobile systems, National Data Network, satellite systems, and internet. Finding the best way for proffering e-government services can be investigated.

3. Citizens’ E-government adaption
   This research focuses on finding the points that affect on the adaption of e-government services. One important factor for adapting e-government can be satisfaction factor of citizens. Therefore, the more satisfaction from these services, the better and easier the adaption of e-government will be.

4. E-government cooperation with citizens
   Cooperation is usually a good way for improving the degree of satisfaction. Doing research about the citizens and e-government cooperation in offering e-government services is a worthwhile research idea.
5. **Online E-government services**

Because of importance of time and speed to citizens, online services are a good way for offering e-government services to the citizens. Analyzing the advantages and shortcomings of internet for delivering e-government is a rich idea for further research.
Appendix 1

Citizen satisfaction questionnaire

This questionnaire has been designed aiming to understanding the scale of citizens’ satisfaction from E-government services. Please leave your email address if you want to know about the conclusion of this research.

Thank you for taking the Time answering these questions.

**Personal information:**

<table>
<thead>
<tr>
<th>Sex:</th>
<th>□ Man</th>
<th>□ Woman</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age:</td>
<td>□ 18-29</td>
<td>□ 30-39</td>
</tr>
<tr>
<td></td>
<td>□ 50-59</td>
<td>□ 60-69</td>
</tr>
<tr>
<td>Education:</td>
<td>□ Less than diploma</td>
<td>□ Diploma</td>
</tr>
<tr>
<td></td>
<td>□ Master</td>
<td>□ PHD</td>
</tr>
<tr>
<td>Income:</td>
<td>□ Less than 500 thousands</td>
<td>□ 1 billion -2 billion</td>
</tr>
<tr>
<td></td>
<td>□ 500 thousands -1 billion</td>
<td>□ More than 2 billion</td>
</tr>
<tr>
<td>Disability:</td>
<td>□ Not Disable</td>
<td>□ Disable</td>
</tr>
<tr>
<td>Computer access:</td>
<td>□ Yes</td>
<td>□ No</td>
</tr>
</tbody>
</table>
### Occupation:

- [ ] Jobless
- [ ] Member of staff
- [ ] Privet work

### Reason to use:

- [ ] Issue car clearance
- [ ] Intelligent fuel card
- [ ] Passport
- [ ] Driving license

### E-government Related Questions:

1 = Very Low  2 = Low  3 = Medium  4 = High  5 = Very High

<table>
<thead>
<tr>
<th>Factors</th>
<th>Sub-factors</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Urgency</td>
<td>Increase capacity of government</td>
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<td></td>
<td>Reduce traveling cost</td>
<td></td>
<td></td>
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<tr>
<td></td>
<td>Citizens’ Information becomes more centralized</td>
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<tr>
<td>Ease of Use</td>
<td>Ease of filling related forms</td>
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<tr>
<td></td>
<td>The knowledge of staff about the help available to you</td>
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<tr>
<td>Time</td>
<td>Success</td>
<td></td>
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<tr>
<td>Reduce traveling Time</td>
<td>Decrease human resources</td>
<td></td>
<td></td>
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<tr>
<td>Reduce Time spend for filling related forms</td>
<td>Citizen Successfully change their culture to using E-government</td>
<td></td>
<td></td>
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<td></td>
<td></td>
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<tr>
<td>Reduce Time spend in queue</td>
<td>Infrastructures and technology improved for E-government implementation</td>
<td></td>
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<td></td>
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<tr>
<td>Reduce Time spend for receiving answers</td>
<td>Increase Quality of services</td>
<td></td>
<td></td>
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<td></td>
</tr>
</tbody>
</table>
Appendix 2

Questionnaire Permission Letter

Dr. Cohen

On 2/2/10, hassan ghaffarzadeh <hasgha-7@student.ltu.se> wrote:
> Dear Mr. Cohen
> 
> I am Hassan Ghaffarzadeh, Master student in E-commerce from Lulea University of Technology. At present I am going to do my final thesis with the title of “Investigating Effective Factors on Citizens’ Satisfaction from E-government services in Iran”. For that reason, I want to use from your questionnaire which you used in your survey of “Citizen Satisfaction with contacting government on the internet” in Information Policy (2006) 51-65. Would you give me permission to use from that questionnaire?
> 
> 
> Best Regards
> 
> 
> Hassan

Hassan

The I used came from a Pew study which is public, so I don't own the questionnaire. You can cite my paper. And good luck on your research.
The topic sounds interesting.
References


Hamermesh D. ‘Stress for Time?’, The university of Texas at Austin, what starts here changes the world, (2005).


