



**ANKARA YILDIRIM BEYAZIT UNIVERSITY**  
**THE INSTITUTE OF SOCIAL SCIENCES**  
**DEPARTMENT OF MANAGEMENT AND ORGANIZATION**

**IMPACT ASSESSMENT OF E-GOVERNMENT:**  
**AN EMPIRICAL STUDY OF MEASURING THE PUBLIC VALUE**  
**CREATED THROUGH E-INITIATIVES**

**MASTER THESIS**

**MEHMET YILDIZ**

**SEPTEMBER 2015**

## Approval of the Institute of Social Sciences

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(Title and Name)  
Manager of the Institute

I certify that this thesis satisfies all the requirements as a thesis for the degree of Master of Management and Organization.

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(Title and Name)  
Head of Department

This is to certify that we have read this thesis and that in our opinion it is fully adequate, in scope and quality, as a thesis for the degree of Master of Management and Organization.

---

(Title and Name)  
Supervisor

**Examining Committee Members** (first name belongs to the chairperson of the jury and the second name belongs to supervisor)

Prof. Dr. Mehmet BARCA (YBU)

---

Doç. Dr. Abdulkadir HIZIROĞLU (YBU)

---

Doç. Dr. Ayşegül TAŞ (Çankaya Üniversitesi)

---

Doç. Dr. Nilay SAKARYA (YBU)

---

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Name, Surname: Mehmet YILDIZ

Signature:

## **ABSTRACT**

### **IMPACT ASSESSMENT OF E-GOVERNMENT: AN EMPIRICAL STUDY OF MEASURING THE PUBLIC VALUE CREATED THROUGH E-INITIATIVES**

**Yıldız, Mehmet**

**Master, Department of Management and Organization**

**Supervisor: Doç. Dr. Abdulkadir Hızıroğlu**

**September, 2015**

The contribution of e-government investments for countries to the assurance of economic growth, better public administration and sustainable development are very well studied in the literature. Also, many researchers emphasized its potential for widening participation of citizens in policy-making process, enhancing access to information and removing barriers to public service. However, there seems to be an imbalance between the supply and demand of public e-services in most countries despite the extensive investments in e-government so far, which might be considered as a consequence of inappropriate ways of policy development rather than “evidence based” evaluation and selection of e-government policies. It is, therefore, important to pay greater attention to collect and interpret a variety of empirical evidence in order to assess impacts of e-government policies.

Previous literature has shown that there is a strong need for measuring the performance of e-government and acquiring empirical evidence on the impacts and outcomes of it especially in developing countries. Moreover, empirical evidence is little regarding the assessment of e-government impact from a public value perspective particularly in Turkish literature. Therefore, the aim of this study is to measure the public value of e-government initiatives in Turkey.

In order to fulfill this aim empirical data were collected from e-government users across Turkey through survey questionnaire employing a quantitative approach. Once the data were collected then they were transformed into SPSS and analyzed by running descriptive

statistics. Analysis of empirical findings showed that Quality of services and Functionalities of services tend to create public value through contributing to Delivery of Public Services. Similarly, User orientedness of services, Organizational efficiency and Openness of public organisations tend to create public value through contributing to Effectiveness of Public Organizations. Finally, Self development of citizens, Trust and Environmental sustainability tend to create public value through contributing to Achievement of Social Outcomes while Equity only tends not to create public value.

**Key words:** E-government, Public Value, Impact Assessment, Public Value Measurement



## ÖZET

### **E-DEVLET ETKİ DEĞERLENDİRMESİ: E-HİZMETLER YOLUYLA ÜRETİLEN KAMU DEĞERİNİN BELİRLENMESİ ÜZERİNE AMPİRİK BİR ÇALIŞMA**

**Yıldız, Mehmet**

**Yüksek Lisans, Yönetim ve Organizasyon Bölümü**

**Danışman: Doç. Dr. Abdulkadir Hızıroğlu**

**Eylül, 2015**

e-Devlet yatırımlarının ülkeler için ekonomik büyüme, daha iyi bir yönetim ve sürdürülebilir kalkınma açısından ne kadar önemli katkılar sağladığı ilgili literatürde kapsamlı bir şekilde araştırılmıştır. Benzer şekilde bir çok araştırmacı, kamu hizmetine yönelik engellerin ortadan kaldırılması, bilgiye erişimin kolaylaştırılması ve vatandaşların politika yapım süreçlerine katılımının artırılması konusunda e-Devlet'in sahip olduğu potansiyele ve sunduğu fırsatlara vurgu yapmışlardır. Ancak tüm dünyada çok büyük bütçelerle e-devlet yatırımları yapılmasına rağmen e-hizmetler konusunda hizmeti sunan (devlet) ve hizmeti alan (vatandaş, iş dünyası, STK'lar vb.) taraflar arasında bir uyumsuzluk, örtüşmezlik gözlemlenmektedir. Bu durumun temel nedenlerinden birisi politika belirleme ve karar alma süreçlerinde kanıta dayalı değerlendirme ve seçme yapılmaması olarak görülmektedir. Bu durumda söz konusu sorunların çözümüne katkı yapmak amacıyla e-devlet yatırımlarının etki değerlendirmesini yapmak üzere ampirik kanıt ve veri toplamak ve yorumlamak son derece önemli hale gelmiştir.

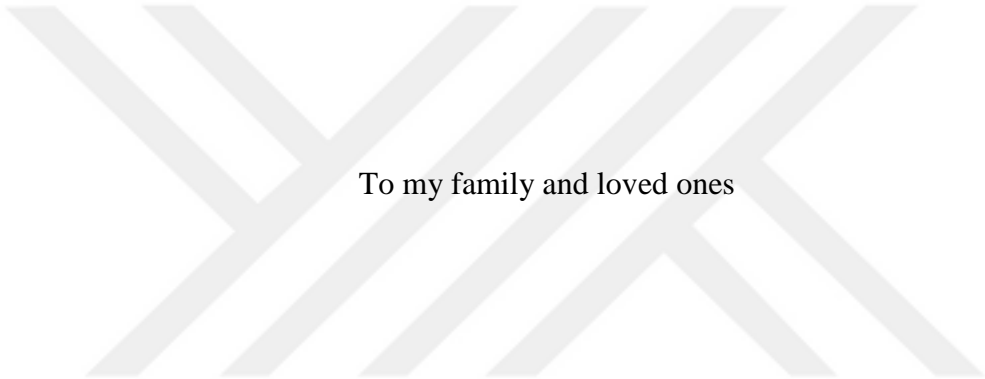
Mevcut yazın özellikle gelişmekte olan ülkelerde e-Devlet yatırımlarının etki değerlendirmesine yönelik ampirik çalışmaların yetersiz olduğuna vurgu yapmaktadır. Bununla beraber Türkiye'de e-Devlet yatırımlarının etki değerlendirmesi konusunda kamu

deęerinin ölçülmesi perspektifinden çalışma yapılmamıştır. Buradan hareketle bu çalışmanın amacı e-Devlet girişimlerinin etki değerlendirmesini kamu değeri perspektifinden ölçmektir.

Bu amacı gerçekleştirmek üzere e-Devlet kullanıcılarına nicel veri toplama yöntemi olarak anket uygulanmış ve ampirik veri toplanmıştır. Toplanan veriler SPSS analiz programına aktararak betimleyici istatistik analizi yapılmıştır. Analizlerin yorumlanması sonucunda e-Devletin Türkiye’de; kamu hizmetlerinin sunulması, kamu kurumlarının etkililięi ve sosyal amaçların gerçekleştirilmesi boyutları bakımından kamu değeri ürettięi gözlenmiştir. Ancak, sadece sosyal amaçların gerçekleştirilmesi boyutunun bir alt boyutu olan eşitlik boyutu konusunda e-Devletin Türkiye’de kamu değeri üretmedięi gözlenmiştir.

**Anahtar Kelimeler:** E-devlet, Kamu Deęeri, Etki Deęerlendirmesi, Kamu Deęerinin Ölçülmesi

## **DEDICATION**



To my family and loved ones



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## LIST OF ABBREVIATIONS

ADAE	French eGovernment Agency
ANOVA	Analysis of Variance
CEQ	Council on Environmental Quality
CIS	Commonwealth of Independent States
COBRA	Cost; Benefit; Risk And Opportunity
Df	Degrees of Freedom
EC	European Commission
eDocuments	Electronic Documents
Eff	Effectiveness of Public Organizations
EGDI	E-Government Development Index
e-Government	Electronic Government
EIA	Environmental Impact Assessment
eID	Electronic Identification
Env	Environmental sustainability
Equ	Equity
eSafe	Electronic Safe
EU	European Union
IA	Impact Assesment
IAIA	International Association for Impact Assessment
ICT	Information and Communucation Technologies
IS	Information Systems
IT	Information Technologies
IT	Information Technology
ITU	International Telecommunication Union
M	Mean
MAREVA	French eGovernment Measurement Methodology
MERNIS	Merkezi Nüfus İdare Sistemi

N	Number of Participants
NEPA	National Environmental Policy Act
OECD	Organization for Economic Cooperation and Development
Ope	Openness of public organisations
PC	Personal Computer
PV	Public Value
Qua	Quality of Services
R&D	Research & Development
R&D	Research and Development
ROI	Return on Investment
RRA	Rapid Rural Appraisal
SD	Standart Deviation
Self	Self Development of Citizens
Ser	Functionalities of Services
Sig.	Significance
SPSS	Statistical Package for the Social Science
SSO	Single Sign On
SUSTRA	Trade, Societies and Sustainable Development
Tru	Trust
Turkstat	Turkish Statistical Institute
UK	United Kingdom
UN	United Nations
US	United States
Uso	User Orientedness
VEDOP	Vergi Dairesi Otomasyon Projesi
VMM	Value Measuring Methodology
WIBE	Economic Efficiency Assessments
WSIS	World Summit on the Information Society
WW2	World War II



# 1 INTRODUCTION

## 1.1 Research Background

*Knowledge is all: the next society will be a knowledge society and knowledge will be its key resource.(Drucker, 2001)*

### 1.1.1 Problem Statement

Existing literature shows that there is a strong need for measuring the performance of e-government and acquiring empirical evidence on the impacts and outcomes of it especially in developing countries (Yildiz 2007; Esteves and Joseph 2008, Wang, and Liao 2008; Heeks and Molla 2009; Castelnovo 2010; Karunasena, and Deng, 2010; Bhatnagar and Singh 2010; Fernandez-i-Marin 2011; Savoldelli, et al 2012, 2013a, 2013b, 2014; Hsieh, et al 2013; Bai, 2013) in addition to lack of empirical evidence regarding the assessment of e-government impact from a public value perspective. Therefore, this study aims to assess the impact of e-government from the public value perspective in Turkey.

### 1.1.2 Transformation Through ICT and e-Government

The World we live in has continuously been experiencing a dramatic change most of which originated from the influence of Information and Communication Technologies (ICT). The latest technological developments have made the World become a digital world. It is obvious that increasing use of ICT has caused individuals, institutions and finally governments to transform the way they act and communicate. Also, transition from traditional societies to knowledge societies has caused a set of significant changes in the

social, political, economical and cultural structure of nations as well as in the understanding of public administration across countries.

According to Malkia, Anttiroiko and Savolainen (2004) there are four main reasons of the transformations in governance, politics and society as a whole,

- The changing role of knowledge,
- The changing forms of social organization and cooperation,
- Globalization and,
- Utilization of new ICTs.

Similarly, Calista and Melitski (2007) argue that the World Wide Web and the Internet has played a vital role in the deployment of Information and Communication Technologies in public sector.

As the number and diffusion of mobile applications increases, and higher growth rates being experienced in mobile Internet uptake, parallel to the rise in the number of Internet users in all countries and increasing availability of online content, more and more people are joining, and participating actively in the Information Society (ITU, 2014).

Following the World Summit on the Information Society (WSIS) in 2003, as it is agreed, numerous projects were put into action in pursuit of delivering public service in a quality, faster, easier, cheaper, more transparent and eventually more effective way around the world (ITU 2010).

As a result of all these scientific and technological developments, the ways of interaction between governments, business, third sector and public at large have been continuously transformed by the diffusion of e-government (UN 2003).

Correspondingly, we can consider some essential drivers of e-government as:

- the reforms in public administration,
- the modernization of processes and,
- the development of the information society (Centeno, Van Bavel and Burgelman 2005).

Thus, e-Government has emerged as a new concept inevitably forcing countries to invest huge amount of money in e-Government projects all around the world. There is no doubt that developed countries have made substantial progress in public administration and public service delivery through Information and Communication Technologies. Nowadays e-Government can be considered as a must rather than an option for the countries seeking for good governance, responding citizen expectations, remaining competitive in the international environment and keeping up with the latest developments in the field of science and technology.

However, a report by International Telecommunication Union (2010) suggests that public administrations around the World should not only provide infrastructure and ICT access but also facilitate effective use and uptake of information and communication technologies so that they may benefit from the full potential of ICTs and support transformation to knowledge-based societies. Therefore any attempt to increase ICT use of citizens, organizations and any other social entities become important.

Governments also have been becoming conscious of that the rapidly developing knowledge societies have the potential to create a greater demand for increased transparency, participation and empowerment by people worldwide (UN,2003). Similarly, it is a virtual certainty that citizens around the World increasingly will put more and more pressure on public authorities to deliver more public values over the next several years. Therefore, governments and public managers need to pay more attention to enhance the participation of their citizens in the process of setting goals and to design policies and clearly formulate the right strategies that will guide them in the achievement of those goals (Cole and Parston 2006).

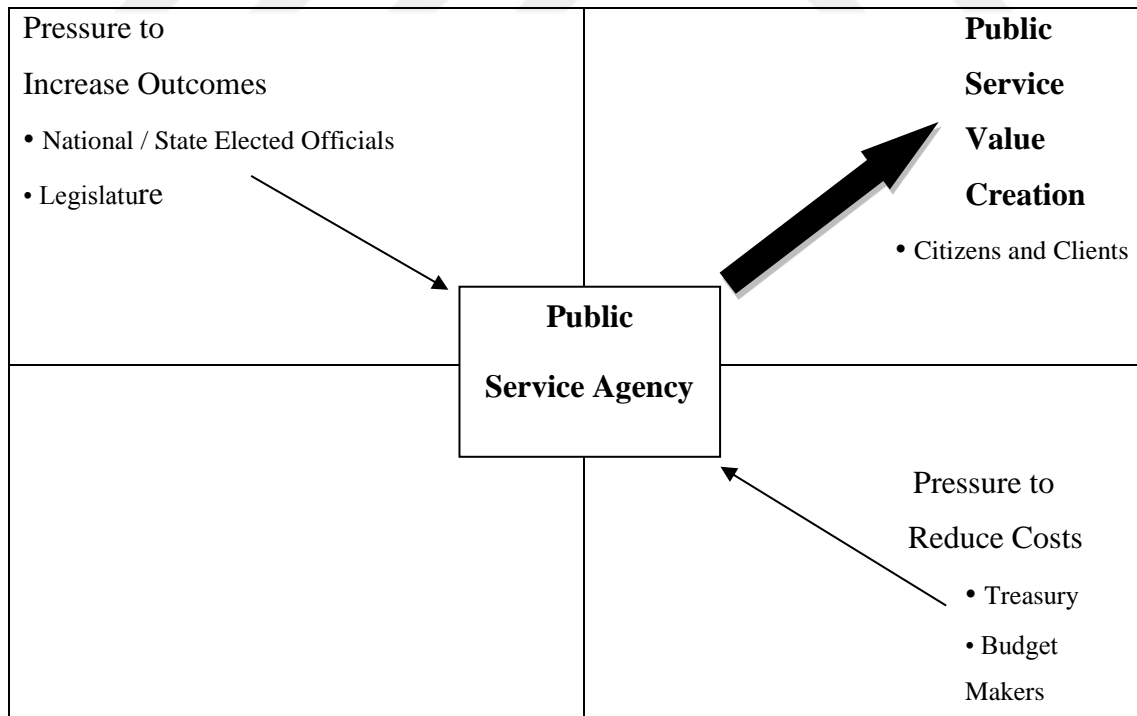
Cole and Parston (2006) also argue that due to numerous challenges that all governments face in terms of ensuring sustainability and reaching resources governments are continuously in search of alternative ways of doing and producing more products, services and values with less resources, there is an ever-growing need for practical approaches to identify, assess and drive high performance in the public sector. Citizens around the World demand more and better public services with higher quality in a cost-effective manner.

### 1.1.3 The Rising Need For Impact Assessment in ICT Context

European Commission (2009) defines impact assessment as a set of logical steps to be followed in the process of development of policy proposals. It is a process that prepares evidence for political decision-makers on the advantages and disadvantages of possible policy options by assessing their potential impacts. It is also the process of identifying, predicting, evaluating and mitigating the biophysical, social and other relevant impacts of development proposals or policies prior to major decisions being taken and commitments made.

Moreover, there has been an increasing emphasize on enhancing performance and taking account of outcomes in the public sector. In line with the spread of the internet expectations of citizens regarding the value of services has been further raising (Cole and Parston 2006). The Figure 1 shows the public sector squeeze.

**Figure 1 Public Sector Squeeze**



Source: Cole and Parston (2006)

Nevertheless, there seems to be an imbalance between the supply and demand of public services in most countries despite the extensive investments in e-government so far, which might be considered as a consequence of inappropriate ways of policy development rather than “evidence based” evaluation and selection of e-government policies (Kunstelj, Jukic and Vintar 2007; Kim 2007; Vintar and Nogrsek 2010; as cited in Stanimirovic and Vintar 2013).

Heeks (2006a) argues that due to poor implementation and lack of effective management most of the e-government initiatives have failed. There seems to be a great gap between the expected results of e-government initiatives and the actual consequences as the overall picture reflects that it is a massive wastage of financial, human and political resources and a failure in harnessing the potential of e-government to enhance better governance and achieve expected outcomes of citizen satisfaction. Similarly, Stanimirovic and Vintar (2013) argue that despite substantial investments in the area of e-government in recent years the expected impacts and outcomes are still rather ambiguous. Considering the current situation of public finance around the world along with increasingly strict measures for saving resources there seems to be a need for careful direction of further e-government investments, especially focusing on the effective assessment of e-government policies and their impacts and outcomes – be it on national, local or sectoral level.

In creating and delivering public value governments will increasingly face the squeeze and particularly for the coming years the pressure on public budgets tends to rise (Cole and Parston 2006). Therefore, due to the insufficiency of funds and resources, it is vitally important to assure effective allocation of scarce resources and to design better policies that are evidence based especially in this time of economic turbulence. One way of achieving this is to practice adequate forms of impact assesment in decision—making processes and policy design at all levels.

IA is so important in fomulating strategies, designing policies and making decisions at organizational, local, national and international level since it facilitates effective resource allocation. IA not only contributes to the transparency of proposed policies but also facilitates evidence-based decision making. It provides the opportunity to foresee potential impacts or outcomes of proposed policy actions as well (EC 2009). Similarly, it can

provide robust and credible evidence on performance of decision makers and, crucially, on whether a particular program achieved its expected outcomes or not in such an environment in which transparency, accountability and quality of decision making processes are valued and expected by citizens, businesses and other stakeholders (Gertler et al. 2011).

The contribution of e-government investments for countries to the assurance of economic growth, better public administration and sustainable development are very well studied in the literature. Also, many researchers emphasized its potential for widening participation of citizens in policy-making process, enhancing access to information and removing barriers to public service.

However, in their study Stanimirovic and Vintar (2013) emphasize that past experience in the field of e-government necessitates further attention by researchers for the assessment of e-government policies, and e-government investments so that e-government decision makers could carry out more qualified and quantified preparation, execution and evaluation of e-government policies including their broader societal implications as well as longer term impacts and outcomes.

As Scott et al. (2011) argue that by including the goal of better democratic engagement, wider political participation and the creation of public value, e-government strategies have moved beyond improving access to services. In addition, UN report on e-government (2014) reveals that although the e-government history is not new it is getting into a new stage. Reducing costs in service delivery is still important, but creating public value has been becoming the main objective of e-government. This shift is seen both in developed and developing countries with a focus on creating public value for citizen.

Therefore, what has become so important as much as implementing e-government is assessing its performance, impacts and value for citizens. It is then important to pay greater attention to collect and interpret a variety of empirical evidence in order to assess the impacts, outcomes and value of e-government policies.

On one hand, most studies carried out on e-government evaluation fails to reflect the kind of evidence of benefits that are required to have an actual influence on policy formulation. For this reason, it is necessary to approach e-government from a public value (PV) perspective. PV approach can contribute to decision making, performance assessment and, particularly in the context of e-government, to build a bridge between the information technology and broader policy communities (Kearns 2004). Accordingly, most of the e-government evaluation studies focus on assessing the supply-side of e-government neglecting the broader impacts and outcomes of it (Kunstelj and vintar 2004).

On the other hand, research on public value assessment of e-government projects is not sufficient (Hanna 2008 as cited in Thowfeek and Arulanantham 2013). Parallel to this, Cordella and Bonina in their study (2012) argue that impact assessment of public sector ICT policies and investments is required to take account of both efficiency and other broader impacts regarding public value. Most of the studies that measure the impacts of ICT policies focus on the efficiency driven performance measures, such as cost reduction and return on investment, and on managerial goal achievements, such as transparency and accountability.

In conclusion, public value is a useful framework that presents a broader way to measure performance of government and to guide policy making processes. Since this approach takes the total impact of government into consideration, it could be beneficial for improving policy decisions and thus for a better relationship between government and public. Moreover, at every step of policy making, public value can help find out new techniques and approaches. It can be useful for each of the steps for; listening to preferences, analysis, option appraisal, measurement, monitoring and assessment (Kelly, Mulgan and Muers 2002).

## **1.2 Motivation of the Study and the Research Gap**

Although the contribution of e-government for countries and its potential for widening participation of citizens in policy-making process, enhancing access to information and removing barriers to public service are very well studied in the literature, there is an ample room for improvement.

Lakka et al. (2013) reveal that the study of e-government has drawn much attention from researchers in the last decade. Researchers and practitioners have been developing a number of different theoretical and conceptual models to investigate different aspects of e-government. Academic and practitioners driven research on e-government is clustered around three aspects: (i) evolution and development, (ii) adoption and implementation, and (iii) its impact on citizens, businesses and other stakeholders by transforming government and administration. Not only most of the frameworks and models that developed so far in the academic literature with respect to e-government adoption are mainly theoretical and conceptual but also the empirical research to validate and generalise the models are very few.

Cordella and Bonina in their study (2012) claim that IA and measuring performance in the public sector should include indicators related to social and political dimensions in public value creation in addition to efficiency and effectiveness related ones. The applications of IA in the public sector need to move beyond from cost-benefit analysis to the assessment of public value creation.

Generating public value depends on the achievement of objectives set by public administrations such as increased equity and public trust, reduced poverty and social exclusion, and the delivery of public services to the citizens (Kelly, Mulgan and Muers 2002; Cordella and Bonina 2012; Karunasena 2012).

The concept of public value, as a result, has become a popular tool for understanding, evaluating and designing public policies, measuring the performance of governments and the total benefits that flow from government actions as well as e-government (Moore 1995; Kearns 2004; Melo, 2007; Harrison et al 2011; Savoldelli, Misuraca, and Codagnone 2013a).

However, previous literature has shown that there is a strong need for measuring the performance of e-government and acquiring empirical evidence on the impacts and outcomes of it especially in developing countries (Yildiz 2007; Esteves and Joseph 2008, Wang, and Liao 2008; Heeks and Molla 2009; Castelnovo 2010; Karunasena, and Deng,



2010; Bhatnagar and Singh 2010; Fernandez-i-Marin 2011; Savoldelli, et al 2012, 2013a, 2013b, 2014; Hsieh, et al 2013; Bai, 2013). Moreover, empirical evidence is little regarding the assessment of e-government impact from a public value perspective particularly in Turkey. That is way the chosen method of measuring the performance of e-government seems preferable.

### **1.3 Research Objectives and the Rationale Behind the Approach**

The primary aim of this study is to assess the impacts of e-government initiatives from the public value perspective in Turkey. In order to fulfill this aim we applied two different questionnaires to e-government users in Turkey. First questionnaire aimed at identifying what are the critical factors for measuring the PV of e-government from citizens' perspective in Turkey. Following this, once the critical factors for measurement were identified, then second questionnaire tried to understand the perceptions of citizens regarding the PV of e-government indicating whether e-government creates PV in Turkey or not according to them.

The thesis is expected to provide important implications to public policy makers which would enable them to understand to what extent the objectives of e- government have been accomplished so far, and what creates public value for citizens. Also, this study tries to reflect the performance of e-government initiatives overall from the citizens' perspective.

Correspondingly, we intended to assess the impact of e-government from the PV perspective because the history of e-government in Turkey dates back to first years of 1990s which indicates that enough time has passed and sufficient data have been accumulated for assessing the impacts of e-government. Moreover, public value approach is a comprehensive and appropriate one particularly for taking account of social dimensions of e-government impact assessment. Last but not least, PV assessment of e-government takes place in the last stage of the evolution occurred in the nature of e-government impact assessment (see Figure 18). These are the primary reasons that is why we have chosen the PV approach to assess the impact of e-government.

## **1.4 Organisation of Thesis**

The study consists of five different chapters. The first chapter of the thesis is an introductory section covering the topics of research background, research motivation, research objectives and organisation of the study. It gives an overview of current scientific situation regarding e-government, impact assesment, e-government evaluation and public value. It also provides information on the reasons why the current study is necessary and what the objectives are.

The second chapter was prepared based on a literature review. In this section some general concepts and definitions related to e-government and impact assessment were given. Besides, the current situation with regards to e-government in the World and e-government in Turkey was demonstrated in addition to the current literature on impact assesment, e-government evaluation and public value assesment of e-government.

The third chapter includes information on the methodology of the thesis. It demonstrates what type of research approach preferred, what the research questions are, which data gathering method was employed and what the research design is.

The forth chapter covers the empirical findings and discussion of the study. Analysis of data through descriptive statistics including demographic information of the participants, the means, the frequencies and the standart deviations were given as well as the interpretation of the analysis.

Finally the fifth section provides some information on the scope and a general overview of the study in addition to contributions of it to the practical life, limitations and implications for future research as a conclusion.

## 2 LITERATURE REVIEW

### 2.1 E-Government at a Glance

#### 2.1.1 Evolution of e-Government

Before the advent of the Internet, the basic purpose of technology use in public administration was dealing with automation of mass processing (Schelin, 2003). Technology use in government was regarded as an enabler which would contribute to enhance the managerial effectiveness of government and increase its productivity until that time (Yildiz, 2007). Accordingly, the diffusion of the use of information and communication technologies such as the World Wide Web and the Internet in the public sector was regarded as an important public sector innovation (Calista and Melitski, 2007) which might be considered as a major advancement that would pave the way for employing e-government.

There are different definitions of e-government. For instance, according to UN (2014) e-government:

*“can be referred to as the use and application of information technologies in public administration to streamline and integrate workflows and processes, to effectively manage data and information, enhance public service delivery, as well as expand communication channels for engagement and empowerment of people”.*

Another definition by Heeks (2006a) considers e-government as; all use of digital information technology. From the point of OECD (2003) e-government is considered as :

*“ The use of information and communication technologies, and particularly the Internet, as a tool to achieve better government”.*

Governments have become aware of what e-government promises in terms of enhancing public service delivery, reducing costs and increasing effectiveness in the public sector for the last two decades. It has been because two interrelated phenomena: the globalization and progress in ICT (UN 2003).

Public administrations recognized that Information and Communication Technologies have a potential to improve the productivity and efficiency of transactions and the quality of public service delivery as well as help governments lessen social inequalities, reduce poverty, promote sustainable development across the world and create new opportunities to tackle socioeconomic development (UN, 2003).

Moreover, ICTs have an important potential to help countries achieve overcoming socioeconomic disparities, diminishing poverty, removing barriers between governments and citizens, and promoting the vision of development. In addition to providing new opportunities to overcome socioeconomic development, e-government also awarded the developing countries with the chance to leap frog the longer development stages and keep up with ensuring better living conditions to the citizens (UN, 2003). Besides, e-government not only contributes to increased efficiency and greater transparency and accountability in government, but also reduces costs and improves service delivery. (ITU, 2014)

In the same manner, in nowadays' digital world, as the unique role of e-government in sustainable development is well appreciated around the World (UN 2003), developing countries have realized that they must increase their capacity to employ ICTs in order to be able to remain competitive in the international environment, achieve better governance, successfully tackle with the cultural differences and, poverty and social exclusion as well as assure sustainable development and prosperity.

Following the World Summit on the Information Society (WSIS) in 2003, as it was agreed, numerous projects were put into action in pursuit of delivering public services in a quality, faster, easier, cheaper, more transparent and eventually more effective way around the world (ITU 2010).

Neelie Kroes, Vice-President of the European Commission responsible for the Digital Agenda, in her speech pointed out the importance of e-government:

*‘In these times of economic crisis, it's natural enough to worry about short term issues. But we'll need food on the table in the long term, too. We'll need to maintain competitiveness in a changing world. To find jobs for the young. To spend taxpayers' money more efficiently. To care sustainably for an ageing population. To manage energy resources better. ICT can deliver all that. It can boost productivity, efficiency, effectiveness. And it can provide so many innovations and applications. From better ways to deliver education, to better ways to deliver electricity. Social media, smart grids, streaming on demand, software as a service. Data sharing, data mining; crowd-sourcing, crowd-funding. Tele-health solutions for those getting older; healthcare apps to inform and empower; electronic pills to diagnose and cure. eInvoicing, eProcurement. eGovernment. These aren't just buzzwords; they're new tools that, combined, can improve and boost every aspect of our lives.’ (Kroes 2012)*

Considerable progress has been made over the past decade since the provision of e-services and having online information and services on government website portals increased threefold (UN 2014). Consequently, e-government has dramatically grown as a term, as an identified activity, and as a topic for research for the last two decades (Heeks and Bailur 2007).

In line with the evolution occurred in the nature of science, technology, society, culture, politics, public administration and economics of countries, citizen demands and expectations with respect to quality of services delivered by governments, citizen participation to policy making processes and transparency have been continuously increasing for the last several decades. Likewise, Centeno, Van Bavel and Burgelman (2005) suggests, as the number of knowledgeable citizens progressively increases, their expectations regarding the responsiveness of governments to their interests, concerns and expectations rise as well.

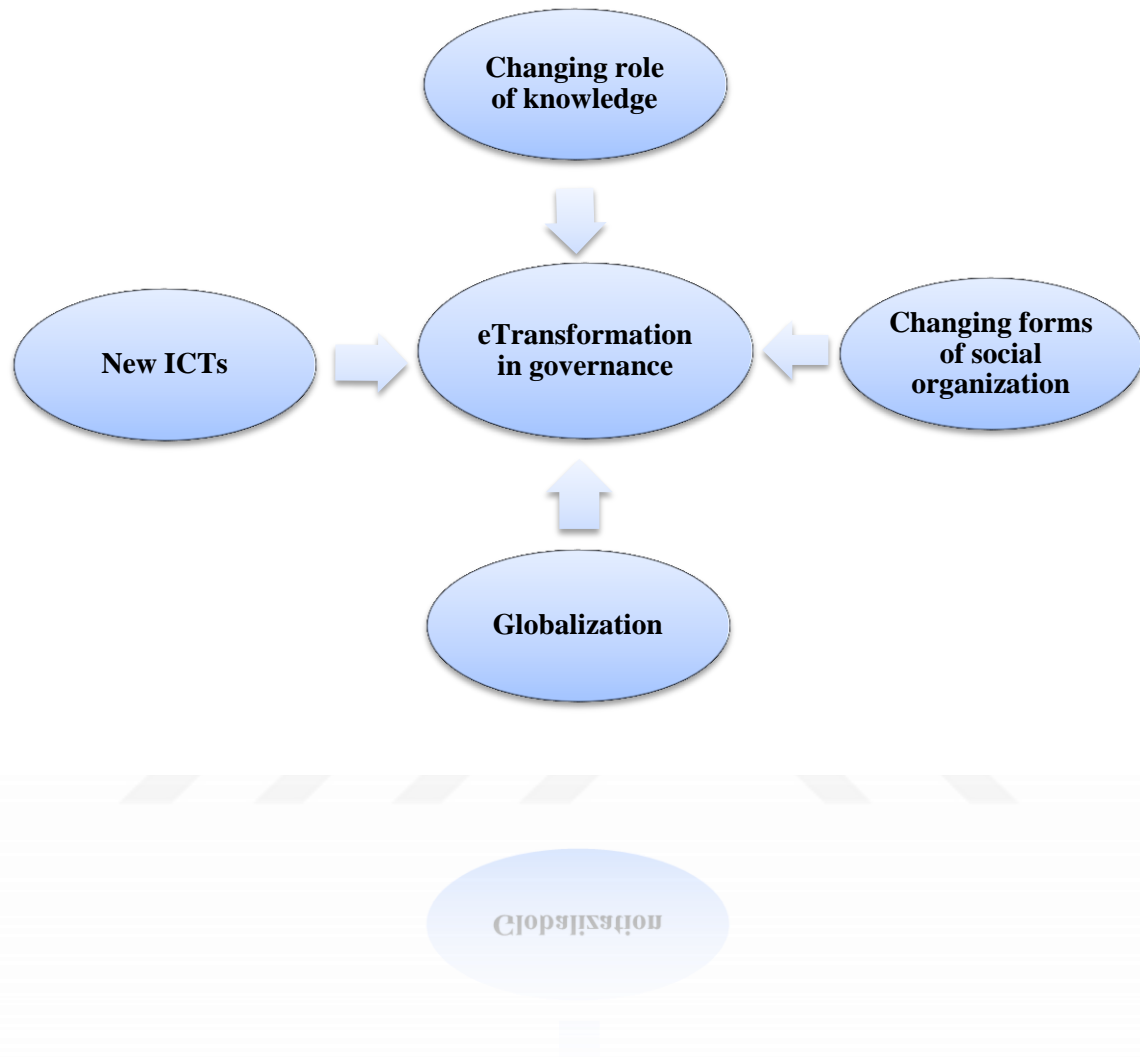
Furthermore, as Centeno, Van Bavel and Burgelman (2005) argue that a visionary approach to e-government acknowledges that the nature of public service delivery and modern governance has been transforming with the contribution of some important intermediaries like social, private and public partners requiring public administrations to better realize the potential of their stakeholders in pursuit of developing stronger, more innovative and longer term strategic collaborations and partnerships with them, and to comprehend how to build best communication channels and methods with them.

On the other hand, progress made so far associated with e-initiatives might be attributed to some drivers such as the modernization and reforms in public administration and the development of the Information Society (Centeno, Van Bavel and Burgelman 2005). In the same way, Malkia, Anttiroiko and Savolainen (2004) report that there are four main reasons for the transformation in governance, politics and overall society:

- The changing role of knowledge
- The changing forms of social organization and cooperation
- Globalization
- Utilization of new ICTs

Figure 2 summarizes the conceptual framework of this interaction by Malkia, Anttiroiko and Savolainen 2004.

**Figure 2 e-Transformation in Governance – The Conceptual Framework**



A prospective European Union approach considers e-Government as an instrument for better government. In line with this consideration e-government initiatives should move from focusing on delivering greater quality and efficiency of public services to the provision of better public administration, more transparent and participative governance and the implementation of more democratic political processes. (Centeno, Van Bavel and Burgelman 2005)

As acknowledged by Centeno, Van Bavel and Burgelman (2005) there are four main issues for a visionary e-government view to be realized by being addressed by governments:

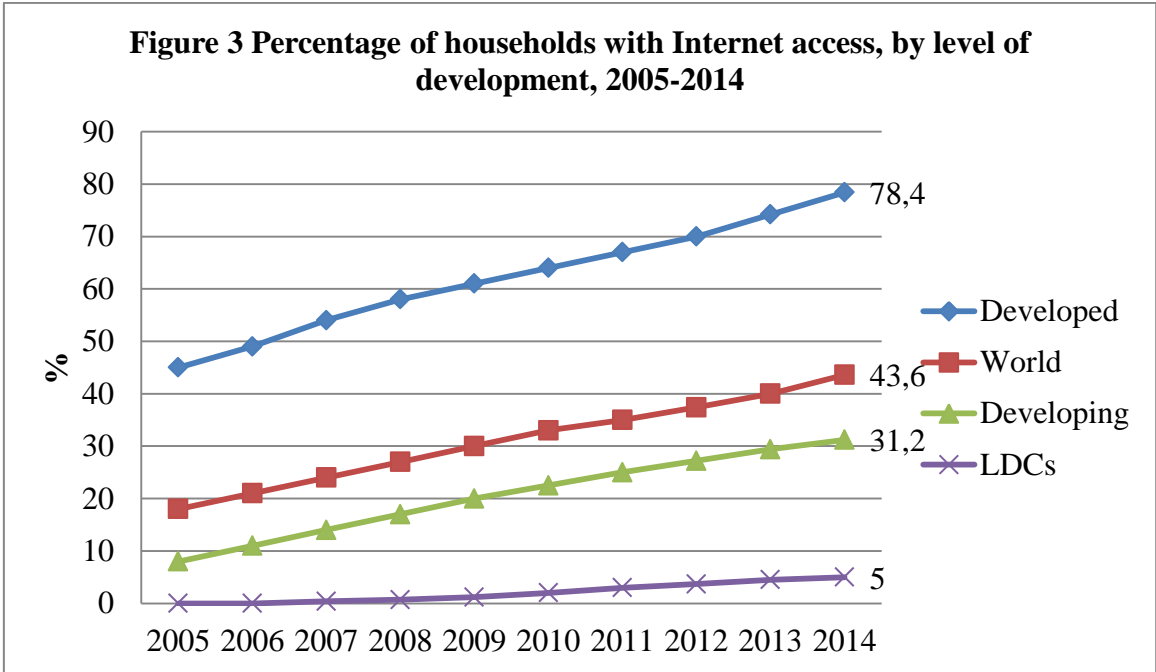
- Managing knowledge is becoming more and more important in governance and in democratic process
- What citizens and businesses need shall be considered
- In delivery of public services and in democratic processes, effective cooperation of intermediaries is necessary
- Governance can be improved through better networking, co-ordination and collaboration.

According to a categorization, identification and use of ICT for the effective and efficient delivery of public services is the main focus of a technology-driven e-Government endeavour. In a user-centred e-government strategy, the requirement and expectations of users are more important. A cost-driven e-government initiative strives for the operations efficiency of public services (IANIS 2007 as cited in Karunasena and Deng 2009).

### **2.1.2 International Statistics on ICT Indicators**

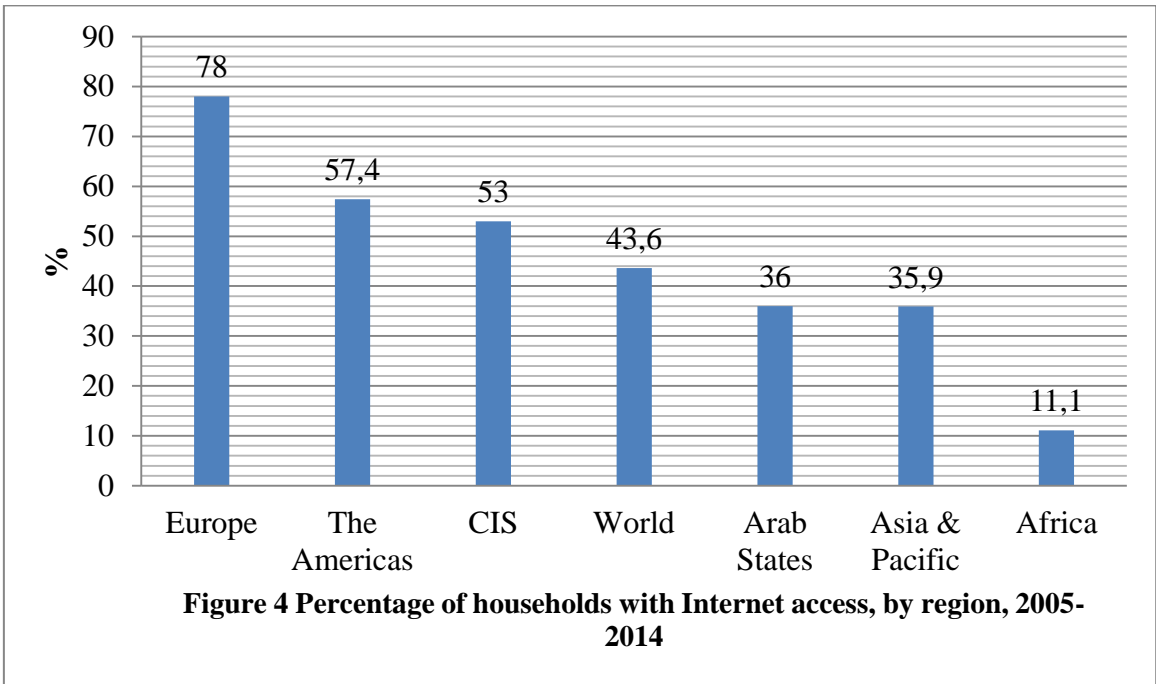
Here are some international statistics related to e-government and ICT development indicators. The Figure 3 demonstrates the percentage of households with internet access by level of development for the years between 2005 and 2014. As it can be seen, the proportion of households is 5% in LDCs and 78,4% in developed countries.





Source: ITU 2014

The Figure 4 represents the percentage of households with internet access by region. According to Figure while 78 percent of households in Europe have Internet access, only 11 per cent of households in Africa have Internet. The Asia and the Pacific region boasts the highest number of households with Internet access while the world average is 43,6 percent.



Source: ITU 2014

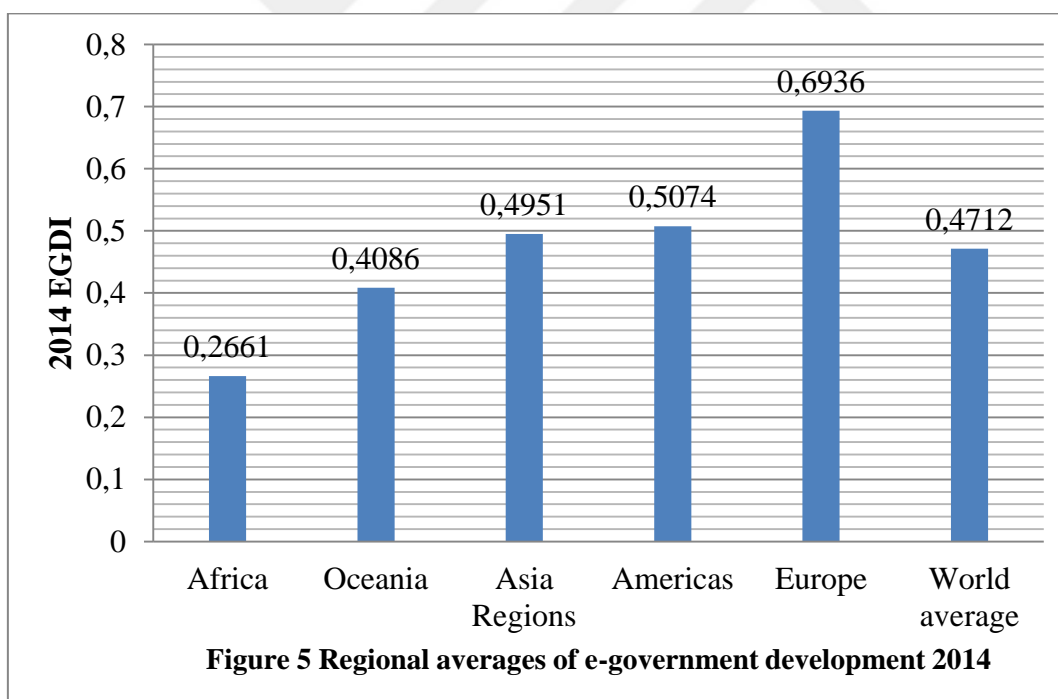
Table 1 demonstrates rank of countries with respect to EGDI. Only 25 countries (13 per cent) of the countries in the world are ranked as very-high-EGDI (more than 0.75). Most of the countries (62) are in the middle range (32 per cent) and ranked as high-EGDI (between 0.5 and 0.75). 74 countries (38 per cent) ranked as middle-EGDI (between 0.25 and 0.5). There are 32 countries in lowest group and they are ranked as low-EGDI (less than 0.25). Percentage of lowest performing group in the world is 17. Turkey is in the group of high EGDI countries having an EGDI value between 0.50 and 0.75.

**Table 1 Countries grouped by EGDI in alphabetical order (Source: UN 2014)**

Very High EGDI (More than 0.75)	High EGDI (Between 0.50 and 0.75)		Middle EGDI (Between 0.25 and 0.50)		Low EGDI (Less than 0.25)
Australia	Albania	Malta	Algeria	Micronesia	Afghanistan
Austria	Andorra	Mauritius	Angola	Namibia	Benin
Bahrain	Antigua and Barbuda	Mexico	Bahamas	Nauru	Burkina Faso
Belgium	Barbuda	Monaco	Bangladesh	Nicaragua	Burundi
Canada	Argentina	Mongolia	Belize	Nigeria	Central African Republic
Denmark	Armenia	Montenegro	Bhutan	Pakistan	Chad
Estonia	Azerbaijan	Morocco	Bolivia	Palau	Comoros
Finland	Barbados	Oman	Bosnia and Herzegovina	Paraguay	Côte d'Ivoire
France	Belarus	Panama	Botswana	Philippines	Congo
Germany	Brazil	Peru	Cambodia	Rwanda	Djibouti
Iceland	Brunei	Poland	Cameroon	Saint Kitts and Nevis	Equatorial Guinea
Ireland	Bulgaria	Portugal	Cape Verde	Saint Lucia	Eritrea
Israel	Chile	Qatar	Congo	St Vincent and the Grenadines	Gambia
Italy	China	Moldova	Cuba	Samoa	Guinea-Bissau
Japan	Colombia	Romania	DPR of Korea	Senegal	Haiti
Luxembourg	Costa Rica	Russian Federation	Dominica	South Africa	Liberia
Netherlands	Croatia	San Marino	Dominican Republic	Sudan	Malawi
New Zealand	Cyprus	Saudi Arabia	El Salvador	Suriname	Mali
Norway	Czech Republic	Serbia	Ethiopia	Swaziland	Mauritania
Republic of Korea	Ecuador	Seychelles	Gabon	Syria	Mozambique
Singapore	Egypt	Slovakia	Ghana	Tajikistan	Nepal
Spain	Fiji	Slovenia	Guatemala	Thailand	Niger
Sweden	Georgia	Sri Lanka	Guyana	TFYR of Macedonia	Papua New Guinea
United Kingdom	Greece	Switzerland	Honduras	Timor-Leste	
United States of America	Grenada	Tunisia	India	Tonga	
	Hungary	Turkey	Indonesia	Trinidad and Tobago	
	Jordan	Ukraine	Iran		
	Kazakhstan	United Arab Emirates	Iraq		
	Kuwait		Jamaica		
	Latvia				
	Liechtenstein				

	Lithuania Malaysia	Uruguay Venezuela	Kenya Kiribati Kyrgyzstan Laos Lebanon Lesotho Libya Madagascar Maldives Marshall Islands	Turkmenistan Tuvalu Uganda Tanzania Uzbekistan Vanuatu Viet Nam Yemen Zimbabwe	Sao Tome and Principe Sierra Leone Solomon Islands Somalia South Sudan Togo Zambia
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Figure 5 shows the regional averages of e-government development as compared to the World average of 0.4712 in 2014. In 2014, Europe (0.6936) has the highest regional EGDI, followed by the Americas (0.5074), Asia (0.4951), Oceania (0.4086) and finally Africa (0.2661). When compared with previous trends since 2003, there has been no change in regional positions.



Source: UN 2014

Table 2 illustrates the highest 20 countries in Asia in online presence and development. The countries in Asia show varying levels of online presence and development. Whereas the Republic of Korea is leading the World being ranked as number one in the 2014

Survey, there are also countries like Afghanistan, Myanmar, Timor-Leste and Pakistan ranked among the least developed 30 countries globally. The Republic of Korea has the lead with an EGDI value of 0.9462 and is followed by Singapore (0.9076) and Japan (0.8874). Turkey is 19<sup>th</sup> on the list having an upper middle level of income and an EGDI value of 0.5543 and followed by Sri Lanka.

**Table 2 Top 20 Countries in Asia in Online Presence and Development**

Country	Level of Income	EGDI	2014 Rank	2012 Rank	Change in Rank
<b>VERY HIGH EGDI</b>					
Republic of Korea	High	0.9462	1	1	-
Singapore	High	0.9076	3	10	↑ 7
Japan	High	0.8874	6	18	↑ 12
Israel	High	0.8162	17	16	↓ 1
Bahrain	High	0.8089	18	36	↑ 18
<b>HIGH EGDI</b>					
Kazakhstan	Upper Middle	0.7283	28	38	↑ 10
United Arab Emirates	High	0.7136	32	28	↓ 4
Saudi Arabia	High	0.6900	36	41	↑ 5
Qatar	High	0.6362	44	48	↑ 4
Oman	High	0.6273	48	64	↑ 16
Kuwait	High	0.6268	49	63	↑ 14
Malaysia	Upper Middle	0.6115	52	40	↓ 12
Georgia	Lower Middle	0.6047	56	72	↑ 16
Cyprus	High	0.5958	58	45	↓ 13
Armenia	Lower Middle	0.5897	61	94	↑ 33
Mongolia	Lower Middle	0.5581	65	76	↑ 11
Azerbaijan	Upper Middle	0.5472	68	96	↑ 28
China	Upper Middle	0.5450	70	78	↑ 8
Turkey	Upper Middle	0.5443	71	80	↑ 9
Sri Lanka	Lower Middle	0.5418	74	115	↑ 41
Regional Average			0.4951		
World Average			0.4712		

Source: UN 2014

## **2.2 E-government in Turkey**

### **2.2.1 History of e-Government in Turkey**

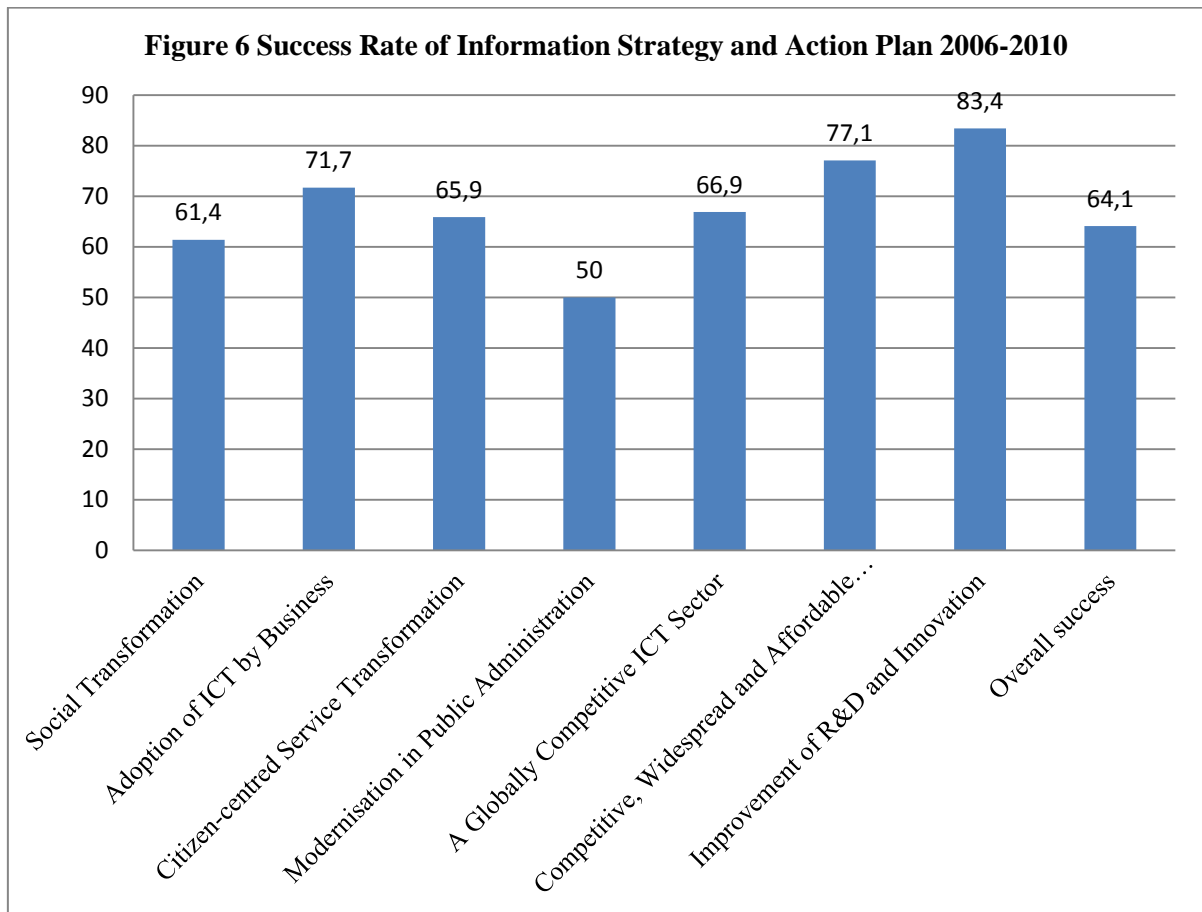
The beginning of the earliest attempts related to ICT initiatives in Turkey dates back to the first years of 1990s. At that time initial actions were taken with a purpose of providing public services in a more efficient and more effective way through information and communication technologies (Ministry of Development 2013a).

One of the first e-government projects in Turkey is internet tax project (VEDOP) which was initiated in 1998 and started as a country-level automation project for tax offices by the Ministry of Finance. In this year, the central population management system “MERNIS” was initiated too. The data entry for approximately 120 million people was completed in 1999. Implementation started in the same year and every Turkish citizen is given a unique 11-digit ID number. In 2003, “MERNIS” became operational (Ministry of Development 2013a; EC 2014).

In 2003, “e-transformation Turkey project” was launched. Following this a short term action plan was prepared covering the years 2003-2004. Aftermath, 2006-2010 Information Society Strategy and Action Plan was set up. During that time some important public services began to be provided through e-government. In May 2004, e-Filling (eBildirge), the social security project for employers, began to be used for the private and the public sector. e-Filling makes it possible for employers to send the insurance premium documents of employees via the Internet and to make cost payments via automatic payment, or internet banking (Ministry of Development 2013a; EC 2014).

In the context of the Strategy and Action plan for 2006-2010 the transformation process carried out around seven basic strategy axis: Social Transformation; Adoption of ICT by Business; Citizen-centred Service Transformation; Modernisation in Public Administration; A Globally Competitive ICT Sector; Competitive, Widespread and Affordable Communication Infrastructure and Services and Improvement of R&D and Innovation. Following the implementation of the year 2010 (EC 2014; Ministry of Development 2015a).

According to a report by Ministry of Development (2013b) the overall success rate of Information Strategy and Action Plan is 64,1 percent with respect to seven areas of strategic priority axis. The success rates in each strategic area are as follows; Social transformation 61,4%, Adoption of ICT by Business 71,7%, Citizen-centred Service Transformation 65,6%, Modernisation in Public Administration 50,0, A Globally Competitive ICT Sector 66,9, Widespread and Affordable Communication Infrastructure and Services 77,1%, Improvement of R&D and Innovation 83,3% as shown in Figure 6.



Source: Ministry of Development (2013b)

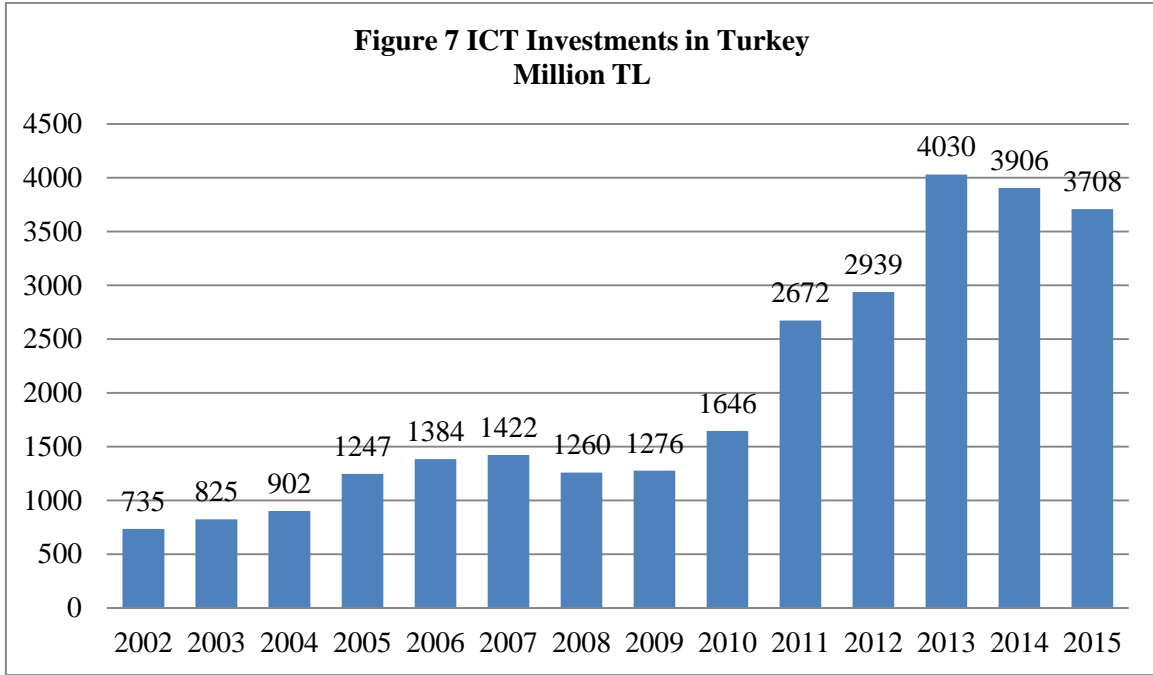
European Commission’s report on e-government (2014) outlines that ICT technologies in Turkey has been becoming more modernized and expanding especially with cellular telephones. A number of other digital exchanges pave the way for a rapid increase in subscribers, while the construction of a network of technically advanced intercity trunk lines, using both fibre-optic cable and digital microwave radio relays makes it possible to communicate between urban centres. The communication with remote areas is provided by

a domestic satellite system. In Black Sea and Mediterranean Sea, there are three submarine fibre-optic cables that connect Turkey with Italy, Greece, Israel, Bulgaria, Romania, and Russia to provide international service. In addition, Intelsat earth stations and mobile satellite terminals in the Inmarsat and Eutelsat systems are components of Turkey's communication and connection with the world.

The commission's report (2014) also explains that Turkey's e-government gateway, "e-Devlet Kapisi", was launched on 18 December 2008. By launching the gateway, the government aimed to provide citizens and enterprises with a single point of access to e-government services. The gateway also aimed to serve a third group of users, the public sector agencies themselves, providing communication and information exchange between each other. It provides information about administrative procedures and links to the services provided through websites of each public agency. Electronic signatures and mobile electronic signatures are used to ensure secure transaction. In the future, smart cards are to be used to access the portal. In addition, the system is extended to serve additional communication devices such as cell phones and Pocket PCs. Turksat, Turkey's main provider of Satellite and IT infrastructure, has the responsibility of the e-government gateway project.

### **2.2.2 National ICT Indicators**

When it comes to ICT investments in Turkey by years from 2002 to 2015, it is clear that the amount of money invested in ICT infrastructure has been increasing except for the last two years. The Figure 7 represents the ICT investments for the years between 2002 and 2015 with the prices of 2015.



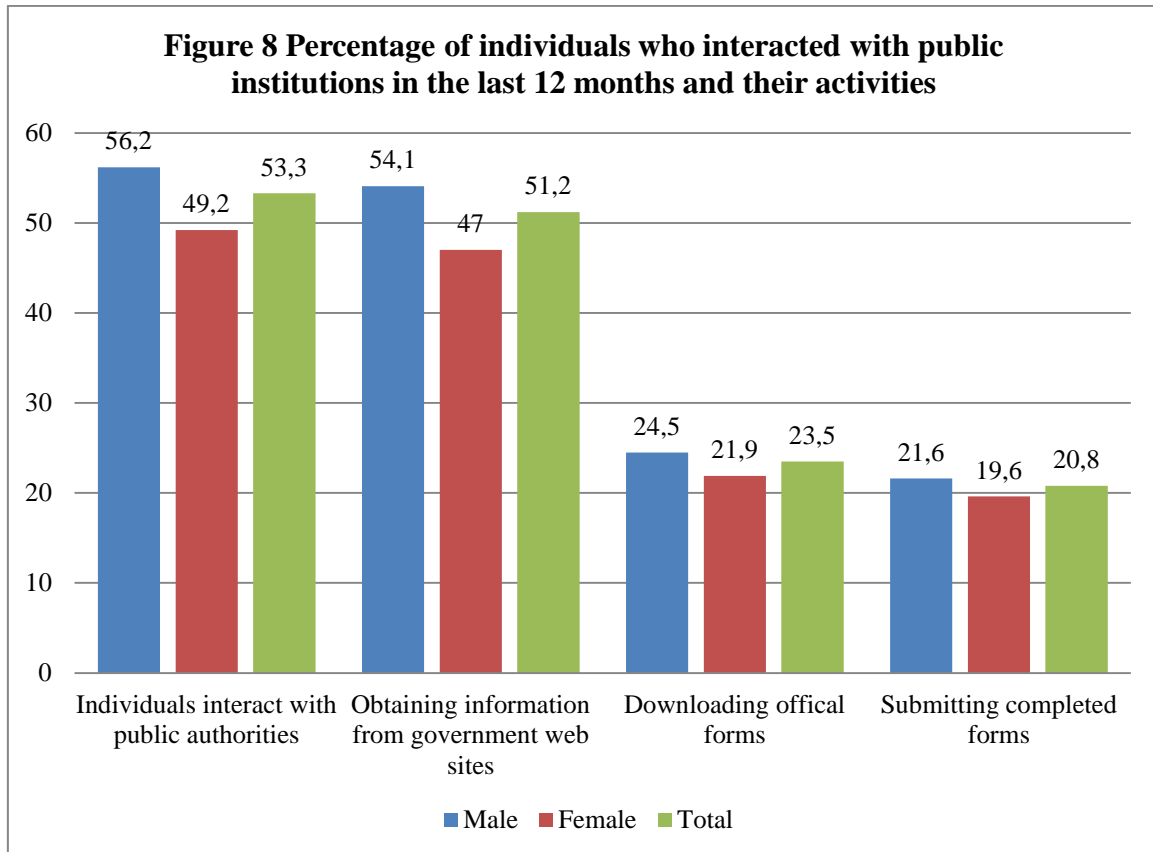
Source: Ministry of Development (2015b)

In July 2015, the e-government gateway (e-devlet kapisi) provides approximately 1.245 services of 189 different agencies online. There are 22.477.527 users registered in the e-government gateway system.

Some national statistics by Turkstat (2014) shows that 53,3% of the citizens interacted with public institutions in the last 12 months. 49,2% of them were female while 56,2% of them were male<sup>i</sup>. Activities of people who interacted with public institutions are obtaining information from government web sites, downloading official forms and submitting completed forms as shown in the Figure 8.

<sup>i</sup> Respondents may choose more than one option, therefore total may not give 100%





Source: TurkStat, Information and Communication Technology (ICT) Usage Survey in Households and Individuals, 2014

Another comprehensive survey statistics, the e-Government benchmark study, by EU (2014) examines the e-government state of play in Turkey. There are five different top-level benchmarks taken into consideration. Top-level benchmarks consist of user centricity, transparency, cross border mobility, key enablers and effective government.

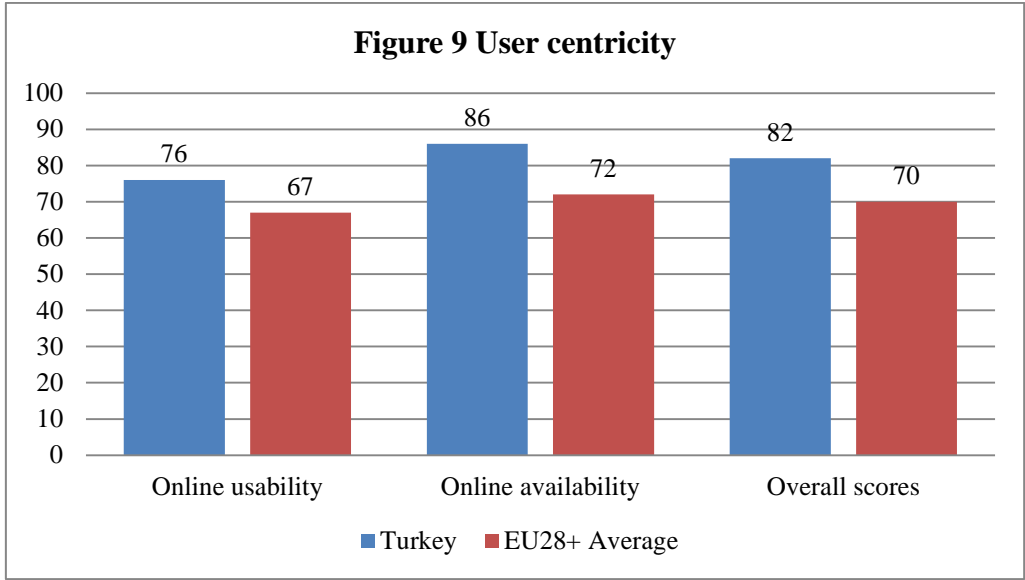
- *User centricity* benchmark represents the degree to which a service is provided online and how it is perceived by different stakeholders of e-government. Online usability and online availability are the themes that are related to user centricity. The former indicates whether a public service is online or not while the latter indicates whether support, help and interactive feedback functionalities are online or not.
- *Transparency* demonstrates to what extent government is transparent in terms of responsibility and performance, the process of service delivery and personal data

involved. It includes transparency of public organisations, service delivery and personal data.

- *Cross border mobility* represents the degree to which EU citizens can use online services in another country. It takes online availability and online usability into consideration.
- *Key enablers* examines the online availability of five technical pre-conditions which are Electronic identification (eID), Electronic documents (eDocuments), Authentic sources, Electronic safe (eSafe), Single sign on (SSO).
- *Effective government* shows the performance of government in terms of user satisfaction, achieving re-use and meeting needs and expectations of users. It includes a) impact representing the average probability of re-use and agreement with perceived benefits, b) e-government efficiency representing the average level of user satisfaction and meeting user expectations, c) e-government use pointing out the number of people who have used e-government to contact with government (EU 2014).

Balci, Medeni and Nohutçu (2013) conducted a research in Turkey on how improved Turkish e-government system was and to what extent e-transformation has been completed was evaluated. They reported that e-government processes need to be of more importance as a critical public policy area in order to improve the quality and efficiency of the pertinent public services and to reduce the setbacks. As a result of analysis on main developments, main figures and trend of e-government policies in Turkey, it can be said that e-government policies are slowly shifting from a state-centered development to a partnership of public and private enterprises, participatory decision-making, and novel ways of accountability, communication and collaboration between institutions. Involvement of several stakeholders and dispersion of decision-making power and control will contribute to not only the social acceptance of policies and commitment of parties, but also participative democratic culture. Participation of different actors in the development will lead to sharing knowledge, attitudes and skills that will contribute to innovation, improvement and effectiveness in policy-making process.

According to the report by EU (2014), Turkey's e-government performance regarding user centricity is higher than EU average as shown in the Figure 9.

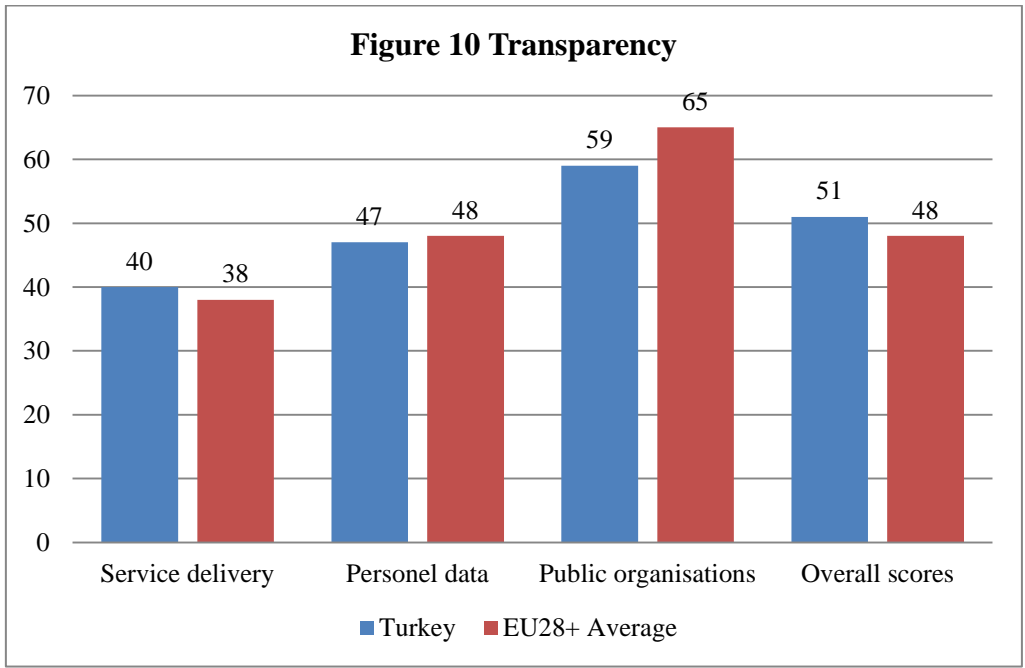


Source: EU 2014

In reference to transparency Turkey performs higher than EU average, according to the report, for all three indicators of:

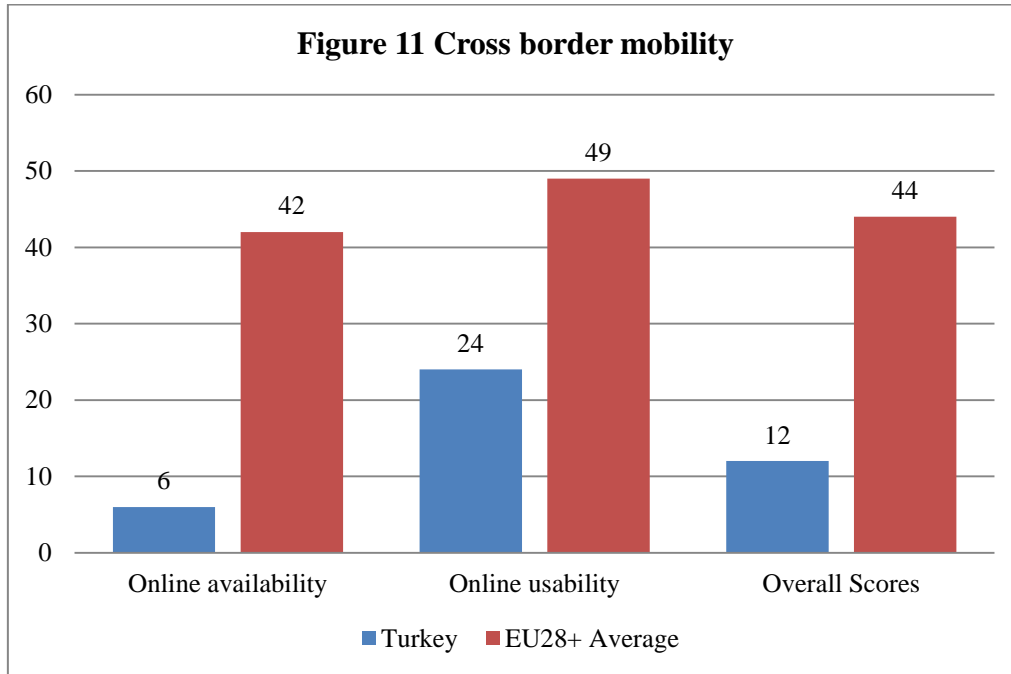
- government’s responsibilities and performance,
- the process of service delivery,
- and personel data involved.

Figure 10 summarizes these statistics.



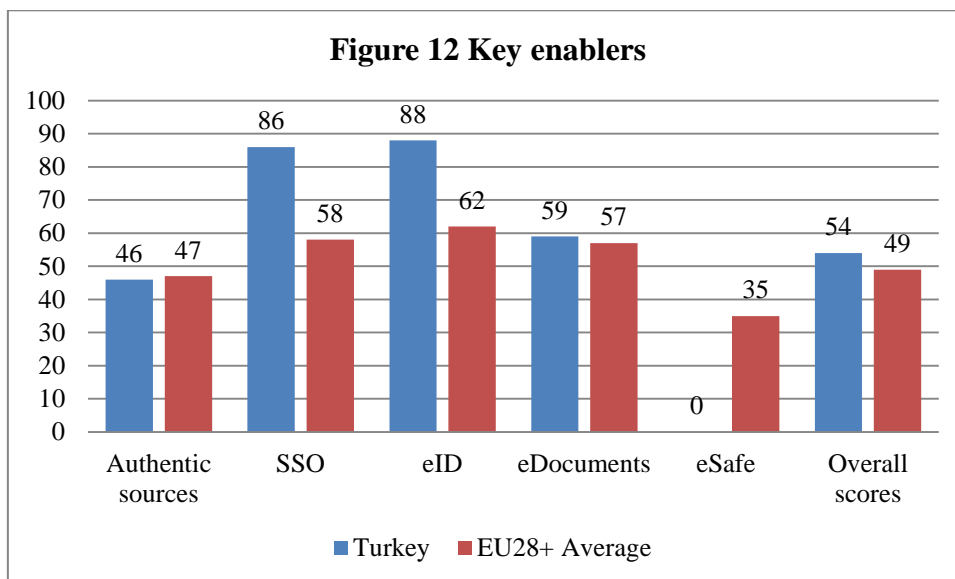
Source: EU 2014

Regarding cross border mobility of e-government services, Turkey has a poor performance compared to EU average as shown in the Figure 11.



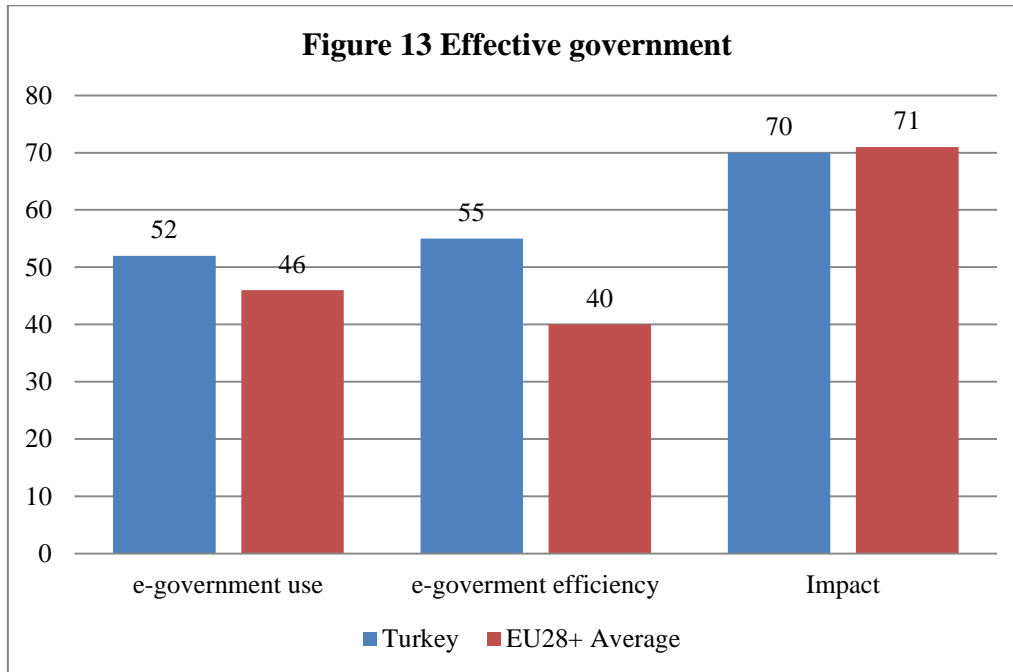
Source: EU 2014

When it comes to key enablers Turkey's overall performance is greater than EU average as shown in the Figure 12.



Source: EU 2014

With respect to effective government, Turkey again demonstrates better performance in comparison with EU average as illustrated in the Figure 13.



Source: EU 2014

## 2.3 Impact Assessment

### 2.3.1 Traditional Decision Making

Until the mid of the 20th century three basic questions were to be answered in decision making processes:

- Is it technically feasible?
- Is it financially viable?
- Is it legally permissible? (Smith 2014)

As expected, this type of decision making technique did not bring about anticipated consequences. Besides, as the complexity of development projects increased, the inadequacy of this method was revealed. The inappropriateness of this technique created a desire for a wider structure of social accounting with respect to resource allocation

decisions leading to the emergence and appearance of cost-benefit analysis (OECD 2006; Smith, 2014)

After the WW2, the idea that efficiency was essential for governments arised, and ways were seeked for ensuring utilization of public funds efficiently in major public invesments. As an outcome of these, cost-benefit analysis and practical decision-making began to gain prominence. Cost-benefit analysis has been regarded as the major evaluation technique for public investments and public policy for many developed countries (OECD 2006).

Although it has frequently fallen short of real impact analysis, for the establishment of an appropriate balance between the monetary costs of a project and its alleged benefits, cost-benefits analysis were still used. In cost-benefits analysis, the parameters have been usually translated in a narrow way and unmeasurable parameters have been skipped. To obtain a politically preferred ratio, skewing the inputs and outputs has been relatively easy (Caldwell, 1998).

Likewise, Smith in his study (2014) also argues that when it comes to practice, there was a lack of accuracy in applications of the technique. Hence, there was an obvious need for alternative techniques although cost-benefit analysis is still the most preferred one for resource allocation. There were two interrelated factors driving the desire for an alternative form of social accounting: first the increase in the nature of resource development proposals with regard to scale, complexity and uncertainty, and second the expansion of public opposition to the approval of those projects. The arrival of megaproject era was followed by a rising level of activism in the society especially about equity in the process of governance. As a result of these pressures, environmental impact assessments appeared.

### **2.3.2 Origins of Impact Assessment**

There are multiple origins for both impact assessment and its application fields and environments. Technological influences, especially in the 1960s, attracted public apprehension. As a consequence of cause-effect relationship consideration, public health policy usually regarded environment as neutral excluding infectious disease. However, consequent to World War II, direct and indirect consequences of new and unfamiliar

industrial and biomedical technologies stimulated research into their impacts upon individuals, societies, and nature (Caldwell, 1998).

As stated in Caldwell (1998), following the unforeseen adverse impacts of technological innovation, an upsurge of concern among advanced industrialized nations emerged. This concern gave rise to development of methodologies for assessing the impacts of technology and development on public health and safety, social and economic stability, and the environment. Technology assessment, risk assessment, cost benefit analysis, and environmental impact assessment were among these methodologies developed in this process.

As a result of all these developments the National Environmental Policy Act (NEPA), signed into law in 1970. A national policy was established for protection of the environment. In addition, a Council on Environmental Quality (CEQ) was established, and required that the environmental impact statements be prepared for major federal actions having a significant impact on the environment. For the environmental impact statement process, guidelines were also developed by CEQ (Alm, 1988).

However, NEPA received some criticisms too. It was faulted for lack of attention to societal, cultural, and economic impacts in its decision-making processes. There are some implications of this conclusion one of which is that there is a need for development of an assessment methodology for societal, cultural, and economic impacts (Turnley 2002).

Following this period, in the second half of 1970s sustainable development became a more important public policy. As a result, Environmental Impact Assessment became the new and indispensable decision-making tool of the era (Gottweis, 2006).

This period of reflection and review of the initial experience resulted in an expansion of the concept of impact assessment. In the 1980s, in addition to environmental impact assessment, several different types of impact assessment came into presence such as social impact assessment, sustainability impact assessment, technology assessment, risk analysis and adaptive environmental assessment and management (Smith, 2014).

In 1981 an International Association for Impact Assessment (IAIA) was founded, and the European Economic Community and the World Bank adopted the environmental impact statement, which included the social dimension, into their practices (Turnley 2002).

### **2.3.3 What Is Impact Assessment?**

The idea of assessing the reaction of human communities to government actions and policy-driven interventions is not new (Turnley 2002). Accordingly, the countries in Central and Eastern Europe have been undergoing a substantial overhaul of their existing structures, systems and legal frameworks. Across Europe governments and public managers must further develop capacities of policy formulation and attempt to assure that laws, regulations and programmes are effectively and efficiently designed and implemented and they satisfy the needs and interests of the society. To this end, impact assessment is considered as a useful means for furthering governments' capacity of policy design thereby contributing to furthering the quality of political decision-making and policy instruments. (OECD 2001).

OECD (2001) considers impact assessment as;

*“an information-based analytical approach to assess probable costs, consequences, and side effects of planned policy instruments (laws, regulations, etc.). It can also be used to evaluate the real costs and consequences of policy instruments after they have been implemented. In either case, the results are used to improve the quality of policy decisions and policy instruments, such as laws, regulations, investment programmes and public investments.”*

European Commission (2009) defines IA as a set of logical steps to be followed in the process of development of policy proposals. It is a process that prepares evidence for political decision-makers on the advantages and disadvantages of possible policy options by assessing their potential impacts. It is also the process of identifying, predicting, evaluating and mitigating the biophysical, social and other relevant impacts of development proposals or policies prior to major decisions being taken and commitments made.



Another definition by Becker (2001) is that impact assessment is the process of identifying the future consequences of a current or proposed action. The “impact” is the difference between what would happen with the action and what would happen without it (IAIA, 1999).

According to Gertler et al. (2011) simply put, an impact assessment judges the changes in the well-being of individuals that can be attributed to a particular project, program, or policy. It can also be considered as a tool that contributes to improvement of the information base of any policy cycle at each stage, which in turn paves the way for better-informed decision-making at the political level (OECD 2001), whereas Smith (2014) considers IA as a process related to resource management and environmental planning through which the goal of sustainability would be achieved.

As reported in the EC guidelines for IA (2009) there are some certain questions to be answered in the process of carrying out an impact assessment:

- What is the nature and scale of the problem, how is it evolving, and who is most affected by it?
- What are the views of the stakeholders concerned?
- Should the Union be involved?
- If so, what objectives should it set to address the problem?
- What are the main policy options for reaching these objectives?
- What are the likely economic, social and environmental impacts of those options?
- How do the main options compare in terms of effectiveness, efficiency and coherence in solving the problems?
- How could future monitoring and evaluation be organised?

According to Gertler et al. (2011) unlike general evaluations, which can answer many types of questions, impact assessment is structured around one particular type of question: What is the impact or causal effect of a program on an outcome of interest? An impact assessment looks for the changes in the outcomes that are directly attributable to a particular program.

On the other hand, impact assessments in general have moved from a single method to multi-method approach over the years. In line with the introduction of participatory approaches to impact assessment, some methodological changes occurred in terms of data collection and knowledge creation (Hulme, 1997, as cited in Herbert and Shepherd 2000). The impact of any development policy or government action can be assessed (projects, programmes, country strategies and macro economic growth and programme aid support) using qualitative or quantitative approaches or a mix (Bird 2002) although there are some strengths and weaknesses for each individual method.

However, Herbert and Shepherd (2000) argue that impact assessments may benefit from the advantages of sample surveys, statistical methods and qualitative approaches by mixing the different methods. Some key factors such as the nature of the project, the type of information needed or priority given, the context of the work and the availability of resources of time, money and human has an important impact on the selection of methods, the extent to which they are mixed and the scale of their application.

Table 3 illustrates the common impact assessment methods and their key features.

**Table 3 Common Impact Assessment Methods**

<b>Method</b>	<b>Key Features</b>
Sample Surveys	Collect quantitative data through questionnaires. Usually a random sample and a matched control group are used to measure predetermined indicators before and after the intervention
Rapid Appraisal	A range of tools and techniques developed originally as rapid rural appraisal (RRA). Involves the use of focus groups, semi-structured interviews with key informants, case studies, participant observation and secondary sources
Participant Observation	Extended residence in a programme/project community by field researchers using qualitative techniques and mini-scale sample surveys
Case Studies	Detailed studies of a specific unit (a group, locality, organisation) involving open-ended questioning and the preparation of 'histories'.
Participatory Learning and Action	The preparation by beneficiaries of a programme of timelines, impact flow charts, village and resource maps, well being and wealth ranking, seasonal diagrams, problem ranking and institutional assessments through group processes assisted by a facilitator
Specialised methods	eg. Photographic records and video.

Source: Herbert and Shepherd (2000) adapted from Hulme (1997) and Montgomery et al. (1996)

Conducting different types of impact assessment is meaningful only when it has an actual impact on decisions that are going to be taken. It is a supportive instrument for decision-making and policy formulation but not a substitute for it OECD (2001).

### 2.3.4 Importance of Impact Assessment and Its Objectives and Benefits

Gertler et al. (2011) argue that efforts for developing programs and designing policies are typically made on the purpose of achieving some certain social and economic outcomes such as reducing social inequalities, ensuring sustainable development and raising income etc. Although it is a vital question whether or to what extent these objectives were achieved, it is not often examined. More commonly, program managers and policy makers focus on shorter term objectives like controlling and measuring the inputs and immediate outputs of a program—how much money is spent, how many textbooks are distributed—rather than on assessing whether programs or policies resulted in expected impacts and outcomes.

Governance of resources is involved in IA. Determination and allocation of costs and benefits within the society was concerned by the decisions resulting from impact assessments. The recognition that IA must account for the stakeholders in any issue, accommodate their goals and utilize approaches that empower communities within decision making is growing. In addition, a role in defining not just the substantive content of planning but the planning approach itself must be given to the stakeholders. (Smith, 2014).

According to White (2010) impact assessment can be considered as a tool to improve the quality and coherence of the policy development process. It contributes to an effective and efficient regulatory environment and further, to a more coherent implementation of the European strategy for sustainable development. It includes the identification of the potential positive and negative impacts of alternative policy actions. This brings the opportunity to decision makers to make their decisions on the basis of better information. Thus, informed decision making should clearly result in better decisions.

In the context of EU impact assessment, all policy-decisions are required to be based on sound analysis supported by the best data available. The European Commission's impact assessment system EC (2009):

- helps the EU institutions to design better policies and laws,
- facilitates better-informed decision making throughout the legislative process,

- ensures early coordination within the Commission,
- takes into account input from a wide range of external stakeholders, in line with the Commission's policy of transparency and openness towards other institutions and the civil society,
- helps to ensure coherence of Commission policies and consistency with Treaty objectives such as the respect for Fundamental Rights and high level objectives such as the Lisbon or Sustainable Development strategies,
- improves the quality of policy proposals by providing transparency on the benefits and costs of different policy alternatives and helping to keep EU intervention as simple and effective as possible,
- helps to ensure that the principles of subsidiarity and proportionality are respected.

In the same manner, as Gertler et al. (2011) reported in their study that impact assessment can be considered as part of a broader agenda of evidence-based policy making. This growing global trend marked by a shift in the focus from inputs to outcomes and results or impacts reshaping how public policies are being conducted. If governments around the World are successful in achieving their predetermined goals then they can monitor and evaluate the performance of their interventions and share the information produced by monitoring and evaluation systems to inform citizens about the performance of government programs and to build a strong foundation for transparency and accountability.

Jacob et al (2008) reported that in some countries, to increase the political profile of impact assessment, the responsibility for impact assessment have been transferred to the heart of government from specialized departments. This fact indicates the eminent political importance of IA. For improving the practice of IA, considering that high levels of mandate and sufficient administrative capacities are necessary for internal evaluations; and external evaluation have to be based on a very clear remit and protected from interest-based political lobbying, internal and external evaluations are to be used systematically. Similarly, the Turkish government established an impact assessment department under the ministry of Science, Industry and Technology in the last year to assess the impacts and the social contribution of R&D and innovation subsidies in 2014.

In addition, there might also be some contributions of impact assessment to reformation and modernisation of the States as it provides evidence about the likely consequences of new policy instruments or real consequences of existing instruments. At the same time, it can be considered as an important means for regulatory management (Bizer et al. 2008).

### 2.3.5 Focus of Impact Assessment

On one hand, assessors may focus on measuring the efficiency, effectiveness, consistency or impact of a policy or an intervention in the process of impact assessment. On the other hand, impact assessment may examine whether a policy or an intervention has achieved preset objectives, or it may be a broader assessment of overall results caused by the policy or intervention – positive and negative, intended or unintended (Roche, 1999 as cited in Bird 2002). Table 4 demonstrates the focus and purpose of impact assessment.

**Table 4 Focus and Purpose of Impact Assessment**

<b>Focus of impact assessment</b>	<b>Purpose</b>
Efficiency	<ul style="list-style-type: none"> <li>• Relates inputs to outputs</li> <li>• Could the same results have been achieved more cheaply?</li> <li>• Would a few more resources achieved much better results?</li> </ul>
Effectiveness	<ul style="list-style-type: none"> <li>• To what extent has the intervention achieved its objectives?</li> </ul>
Consistency	<ul style="list-style-type: none"> <li>• Were intervention methods/ approaches consistent with the outcomes achieved? E.g. using non-participatory project design and implementation would not be consistent with empowerment objectives</li> </ul>
Impact	<ul style="list-style-type: none"> <li>• To what extent has the intervention changed the lives of the intended beneficiaries?</li> </ul>

Source: Roche 1999 (as cited in Bird 2002)

In addition to this, International Association for Impact Assessment (IAIA) explains that objectives of IA can be summarized as follows:

- to provide information for decision-making that analyzes the biophysical, social, economic and institutional consequences of proposed actions
- to identify procedures and methods for the follow-up monitoring and mitigation of adverse consequences in policy, planning and project cycles,
- to promote transparency and participation of the public in decision-making,
- to promote development that is sustainable and that optimizes resource use and management opportunities. (IAIA, 1999).

According to Bizer et al. (2008) main objective in the impact assessment is gathering evidence and presenting alternatives in order to provide decision makers with the information needed to select the best possible regulatory option. Such communication is encouraged by the impact assessment and a culture of analysis is introduced. Considering that it sets the stage for impact assessment both institutionally and procedurally, a high level political commitment is required to serve this objective. A balanced consideration of environmental, social and economic aspects should be ensured by such an impact assessment. The biggest goal of impact assessment can be described as an institutional framework ensuring a formalized “check to ensure that the logic is there”. It is necessary to establish an institutional framework design which could encourage a “culture of analysis” for being able to serve this goal. This is valid for not only EU level, but also for the national impact assessment systems.

In the same way, as argued by White (2010) the reasons for conducting impact assessment are ensuring coherence of different policies that take account of side-effects and realise potential synergies, achieving more transparent and open decision making processes for stakeholders to contribute to the policy design and ultimately developing and delivering better policies so that decision makers have a better information base from which to take decisions.

From the perspective of EU, the main objectives of impact assessment procedure are to evaluate:

- whether it takes sustainable development as a starting point or objective,

- whether it gives sufficient attention to the environment and social dimension,
- whether it includes effective public participation during the process and feedback and,
- its role in decision-making (Maro 2010).

Also, ministries for the environment and for social affairs should be included in the process so that a better use of IA as an integration tool for sustainable development and resource management can be achieved. IA process could be backed up by inter-ministerial platforms (Jacob et al, 2008).

On the other hand, impact assessment does not yet have a fully elaborated, generally accepted typology. In many cases a rather simple typology is used by impact assessors. The initial type of IA was environmental impact assessment. In line with the developments occurred in the field new forms of impact assessment came into presence as being community assessment, technology assessment, regulatory impact analysis, trade impact assessment, adaptive environmental assessment and management, risk analysis, strategic environmental assessment, competition assessment, environmental impact assessment, sustainability impact assessment, poverty impact assessment, social accounting and input-output matrix, modelling etc. These different types of impact assessment reflect differences with respect to the stress put on the subject; geographic focus (local, regional, national); time perspective (immediate, the next generation, the distant future); format (project explanations, planning scenarios, investment proposals); and intended uses of the output (project acknowledgement, policy evaluation, plan determination). This typology provides a global overview and each impact assessment project can be categorized using this typology (Becker 2001; OECD 2000, 2007a, 2007b and 2008a as cited in OECD 2010; Rossini and Porter 1983 as cited in Smith, 2014).

There are several key features all forms of impact assessment ideally have:

- Effects-focused
- Future oriented
- Centred around technological developments
- Systematic, comprehensive and interdisciplinary in approach,
- Comparative and policy-oriented (Rossini and Porter 1983 as cited in Smith, 2014).



With respect to the origins of environmental impact assessment, it stemmed from the passage of the National Environmental Policy Act (NEPA) in the United States in 1969, causing a desire for profound change in both the philosophy and the methodology of resource management (Smith, 2014).

Consequent to World War II, the US experienced a dramatic economic and technological development. However, untested technologies for residual effects, health effects from exposure to nuclear waste, increased air and water pollution and steady deterioration in the quality of the environment resulted in a public discontent. A general popular and political confusion over policies relating to natural resources and what was coming to be distinguished as the “environment” was seen throughout the 1950s and ’60s. The remedies for public dissatisfaction were initially perceived to be economic. But, a preventative action mandated by law was demanded by concerned public, whatever the cause is. Compromise legislation was caused by resistance of the imposition of new costs by polluting industries and local governments. For reducing waste and abuse of natural resources and to control air and water pollution, a series of bills were introduced in the United States Congress in the 1950s. In addition to the scientific research findings and displeasure with the available regulations, some of the former measures were ad hoc and not connected leading to a rise in the demand for revised environmental regulations (Caldwell 1998).

Regarding social impact assessment, it has evolved into a field of social research (Becker 2001). What is more, Becker (1997) argues that nowadays conducting social impact assessment is mandatory in the preparation of government policies and actions particularly in developed countries. Also, many business corporations and non-profit organizations established a culture in which social impact assessment is considered as a standard requirement in policy formulation (Becker 2001).

Social impacts consist of all social and cultural consequences to human communities of any public or private actions that change the ways in which people live, work, play, relate to one another, organize to meet their needs, and generally survive as members of society. Cultural impacts consist of changes to the norms, values, and beliefs of individuals of

communities that guide and rationalize their cognition of themselves and their society (Burdge and Vanclay 1996).

Social impact assessment can be defined as being:

*“ an effort to assess or estimate, in advance, the social consequences that are likely to follow from specific policy actions (including programs, and the adoption of new policies), and specific government actions (including buildings, large projects, and leasing large tracts of land for resource extraction), particularly in the context of the U.S. National Environmental Policy Act of 1969 or ‘NEPA’ ”*  
(Interorganizational Committee 1994)

In general, the social impact assessment process provides direction in (1) understanding, managing, and controlling change; (2) estimating potential impacts resulting from change strategies or development projects that are to be implemented; (3) identifying, developing, and implementing mitigation strategies in order to minimize potential social impacts; (4) developing and implementing monitoring programs to identify unexpected social impacts that may occur as a result of the social change; (5) developing and implementing mitigation mechanisms to deal with unanticipated impacts as they occur; and finally (6) evaluating social impacts resulted from earlier developments, projects, technological change, specific technology, and government policy (Burdge and Vanclay 1996).

When it comes to sustainability impact assessment there are two main functions of it in the guidance by OECD (2010):

- first it is a methodological policy instrument for designing integrated policies that take full account of the three sustainable development dimensions (social, economic and environmental) and that include cross-cutting, intangible and long-term considerations,
- second it is a process for assessing the possible economic, social and environmental impacts of policies, strategies, plans and programmes before they have been formulated (ex ante).

SUSTRA (2003) reports that in order to help inform and guide decision making rather than simple ex-post policy evaluation, sustainability impact assessment is designed to provide ex-ante assessment (before the implementation) of policy proposals. There are some differences between sustainability impact assessment and traditional policy assessment practices in two important ways;

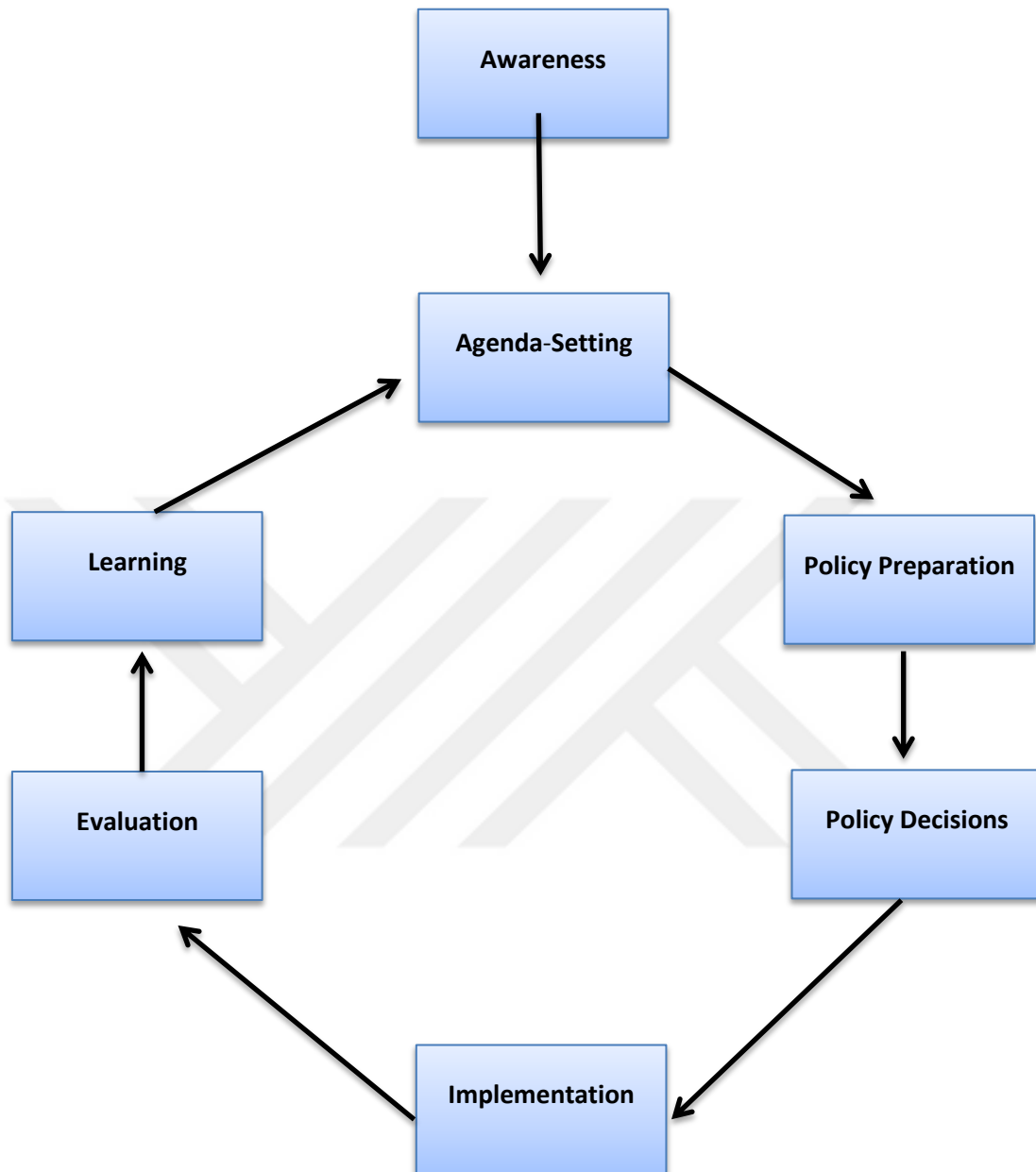
- First, sustainability impact assessment focuses on taking full account of the wider social, environmental and economic impacts of any policy proposal or government intervention.
- Second, since sustainability impact assessment has proactive and comprehensive assessment capacities, it is designed to go beyond the simple identification of likely negative results of certain policies or government interventions, promoting the articulation and development of alternative policies and supportive accompanying measures, that strives for stressing and enhancing benefits resulting from policies while mitigating likely negative impacts.

## **2.4 Applications of Impact Assessment in the Context of e-Government**

### **2.4.1 An Overview**

Impact assessment of e-government projects has an important role in the process of policy formulation. Heeks (2006b) points out that evaluation of e-government helps policy makers move through the policy lifecycle. Figure 14 represents the e-government policy lifecycle.

**Figure 14 The Policy Lifecycle (Heeks 2006b)**



Parallel to this, Stanimirovic and Vintar (2013) argue that public administration and particularly the formulation of the public policies have undergone various stages. Moreover there are some key factors that will probably have an influence on policy formulation in the public sector in the future:

- proliferation of use of policy analysis techniques as an emerging social science discipline that paves the way for measuring and assessing the impacts and outcomes of public policies by utilizing multiple research methods and the progress in the field of social sciences

- protection of the public interest in all phases of the policy-making cycle, evolving role of the civil society and nongovernmental organizations in policy-making processes and increasing demands and expectations of citizens and other stakeholders of governments with respect to more participation, engagement and democratization.
- need for protection of the public interest and increasing public pressure on public managers regarding transparency, efficiency and sustainable development.

As a result of these developments e-government projects has begun to be assessed in terms of its impacts and outcomes. Heeks and Molla (2009) report that impact assessment of ICT projects can be based around six questions:

*Why:* what is the rationale for impact assessment? (assessment of what has been achieved, accountability etc.).

*For whom:* who is the intended audience for the impact assessment? (decision makers, policy makers, project beneficiaries/users etc.).

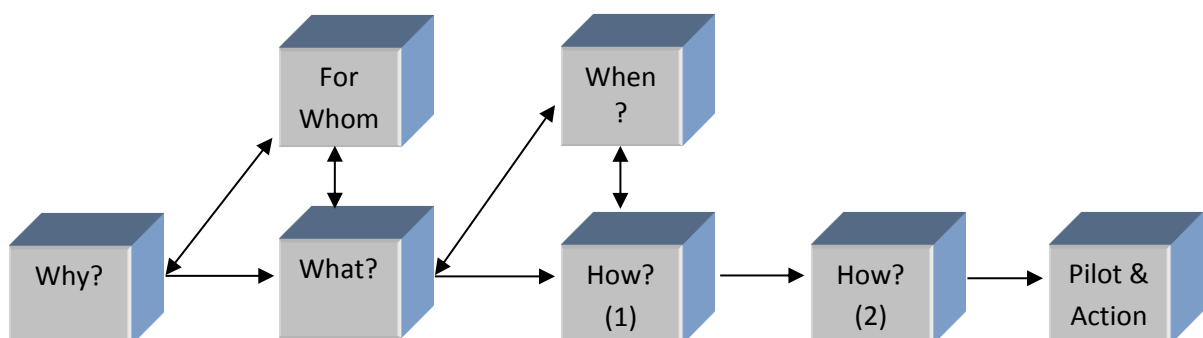
*What:* what is to be measured? (indicators).

*How (1):* how are the selected indicators to be measured? (specific measurement issues, the extent of participation of project users in measurement etc.).

*When:* at what point in the ICT project lifecycle are indicators to be measured? (ex-ante, interim, ex-post).

*How (2):* how are impact assessment results to be reported, disseminated and used? (includes questions on whether indicators are communicated via causal models, stories, etc.).

The Figure 15 represents the planning overview of typical e-government impact assesment process.



**Figure 15: ICT Impact Assessment – Planning Overview** (Heeks and Molla 2009)

## 2.4.2 Evaluation Levels and Evolution of IA of ICT projects

Impact assessment of ICT projects can be clustered around four main targets or categories namely readiness assessment, availability assessment, uptake assessment, and impact assessment (Kunstelj and Vintar 2004; Heeks and Molla 2009).

*Readiness:* "e-readiness" assessment typically measures the systemic prerequisites for any ICT project. It considers for example presence of ICT infrastructure, ICT skills, ICT policies (Heeks and Molla 2009) and the existence and maturity of the right environment for launching and using e-government solutions in individual areas. On the government's side this assessment pay attention to the existing policies related to IT usage, the adoption and use of information infrastructure, IT training, awareness of the costs-benefits and drawback of e-government and some specific issues relating to financing, motivation and obstacles for the development of e-government (Kunstelj and Vintar 2004, Stanimirovic and Vintar 2013).

*Availability:* The inputs turn into a set of tangible ICT deliverables after the implementation of the project; availability assessment is interested in presence and availability of these intermediate resources (Heeks and Molla 2009). That kind of assessment also focuses on online supply by investigating availability, level of development, quality and other characteristics of individual websites, and portals as well as particular e-services and information content (Kunstelj and Vintar 2004).

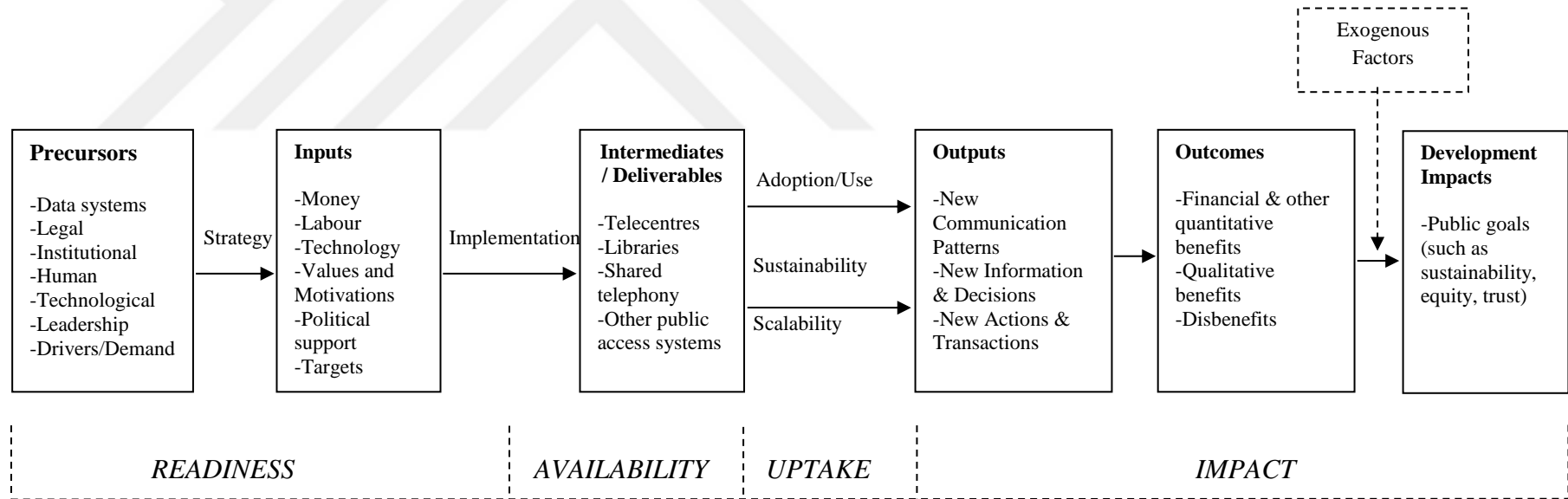
*Uptake:* This kind of assessment requires an investigation of the extent to which the project's ICT deliverables are being used by its target population. Broader evaluation can look at the sustainability of this use over time (Heeks and Molla 2009). According to Kunstelj and Vintar (2004), this approach examines the ICT projects from the point of the users and beneficiaries. It looks at actual use of websites, portals, e-services, information content and other elements of supply. It includes analyzing to what extent ICT services is being used by stakeholders, perceptions of them about the quality of services as well as reasons for not using the services.

*Impact:* This kind of evaluation approach assesses the longer-term impacts and outcomes of the project on economic, social and democratic processes, impact on organisation, work methods etc. It also attempts to measure the transformations occurring in the nature of public sector organizations and several different social issues as a result of ICT policies. It can be divided into three sub-elements:

- *Outputs:* the micro-level behavioural changes associated with the ICT projects.
- *Outcomes:* the specific costs and benefits associated with the ICT projects such as equity, trust and sustainable development etc. (Karunasena and Deng 2010).
- *Development Impacts:* the contribution of the ICT projects to broader development goals (Kunstelj and Vintar 2004, Heeks and Molla 2009, Stanimirovic and Vintar 2013).

The ICT value chain by Heeks and Molla (2009) can help us understand the assessment of ICT projects in general as illustrated in the Figure 16.

**Figure 16 The ICT Value Chain**



Source: Heeks and Molla 2009



In addition to aforementioned framework, Stanimirovic and Vintar (2013) make another categorization according to key evaluation levels on which different evaluation methodologies applied in the context of e-government. These key evaluation levels consist of infrastructural level, project level, organizational level, political-sociological level and finally national level.

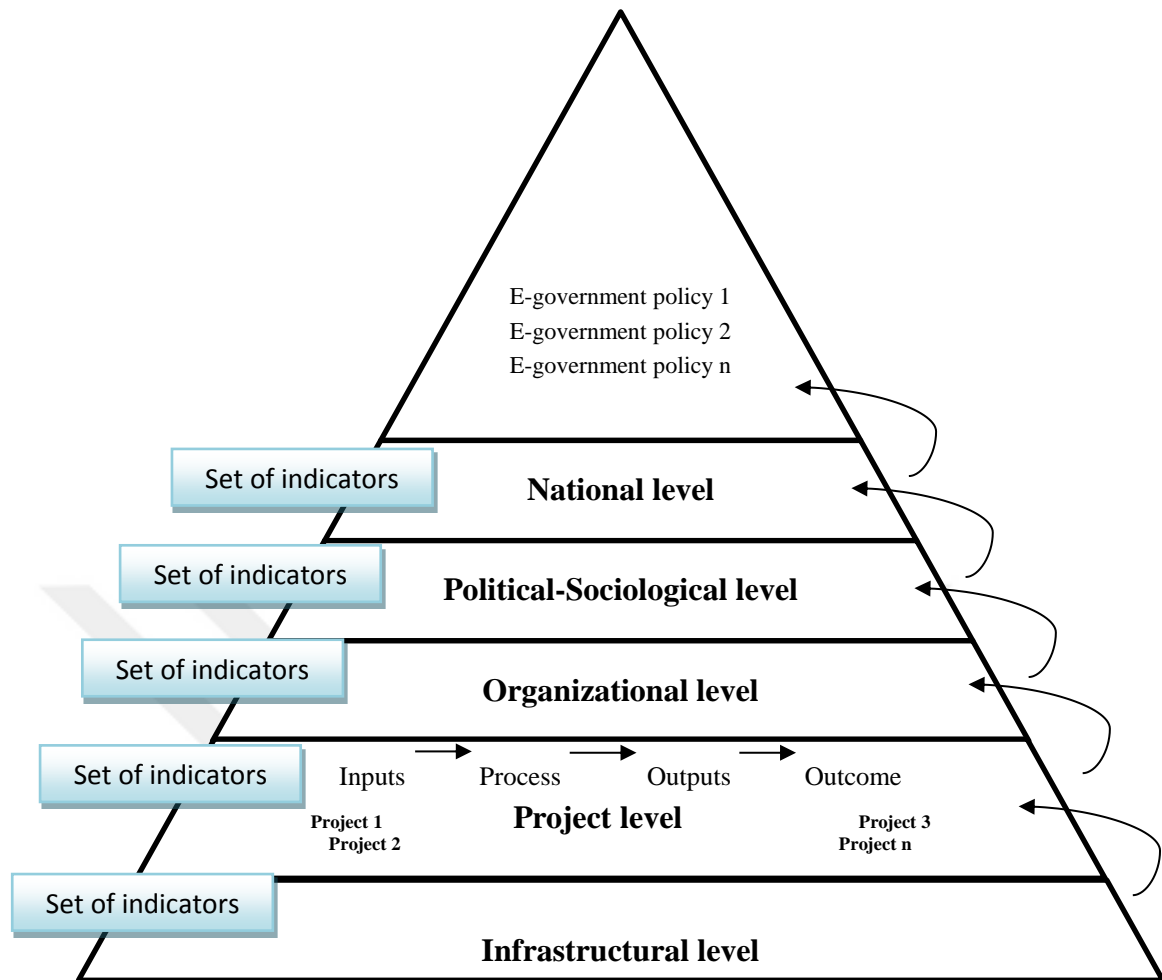
*Infrastructural level:* it primarily relates to maturity or environmental readiness for ICT projects such as costs of ICT infrastructure, data infrastructure, human resources, legal framework;

*Project level:* research at this level focuses on ex-ante and ex-post evaluation of ICT interventions and decisions on the external and/or internal implementation of projects. It includes assessment of inputs, processes, services, operational and maintenance costs, outputs and outcomes of e-government projects;

*Organizational level:* Changes in the organizational structure, business process, organizational culture and human resources are considered at this level. Transformational effects such as changes in back-office, the reduction of hierarchical levels, business process reengineering etc. are assessed.

*Political-sociological level:* Evaluation at this level takes account of some sort of political and sociological effects such as transparency, openness, corruption, user satisfaction, democratization, participation;

*National level:* Research on national level focuses on the assessment of economic impacts such as costs, public benefits, economic growth and sustainable development etc. Figure 17 represents the evaluation levels within e-government policies.



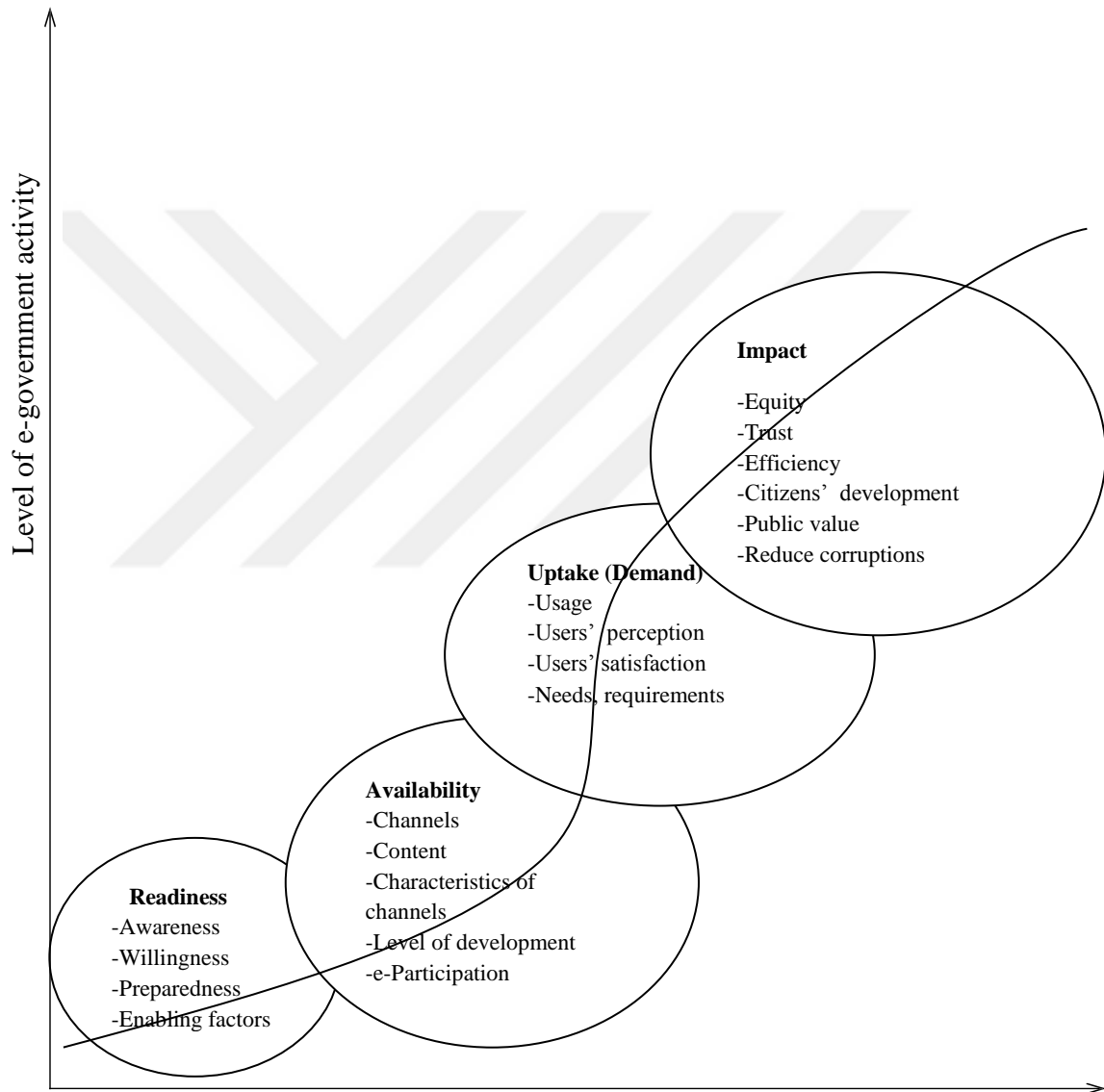
**Figure 17 Evaluation levels within e-government policies** (Stanimirovic and Vintar 2013)

In the context of e-government performance evaluation, impact assesment has been paid more attention recently as a result of rapid development of e-government. In addition to cost-benefit analysis, efficiency and effectiveness, impacts and outcomes of e-government has been considered in impact assesment of e-government projects. (Heeks 2008a as cited in Karunasena 2012). Most of the e-government impact assesment approaches have a focus on improving democracy, developing public trust, supporting personel development of stakeholders, furthering equity and creating value through e-government (Karunasena 2012).

Correspondingly, there has been a shift in the focus of e-government performance assesment from readiness to availability to uptake and ultimately to impact assesment over time (Heeks 2006b). Impact assesment of e-government projects focuses on some

factors such as equity, trust, efficiency, citizens' development, public value and reducing corruptions (Karunasena 2012). Figure 18 by Karunasena (2012) adapted from its original by Heeks (2006b) demonstrates the evolution occurred in the nature of impact assessment of e-government projects.

**Figure 18 An evolution of e-government evaluation**



Source: Karunasena 2012 adapted from Heeks 2006b

Similarly, according to Stanimirovic and Vintar (2013) until the first half of the previous decade, most of the e-government research focused on technological aspects of e-government initiatives. But then the researchers in the field began to pay more attention to usability and usage of e-government services, and in recent years, issues related to successful planning and implementation of e-government policies on different levels (national, regional, local) and in different sectors (e-health, e-education, e-social affairs, etc.) are becoming increasingly important.

Another review by Stanimirovic and Vintar (2013) suggests that, in line with the progress in the e-government development process, numerous e-government assessment methodologies emerged that aim to evaluate the impacts, outcomes, costs and benefits and the development of e-government. They argue that it can be possible to make a classification of the different evaluation methodologies according to their characteristics and subject of the evaluation:

- *Front-office maturity and readiness*: in this kind of assessment the primary focus is on the web site analysis of e-government projects
- *Effects and impacts of e-government policies*: this kind of assessment focuses on ex-ante and ex-post evaluation of e-government policies. Risks, costs, longer term outcomes and benefits to different stakeholders (citizens and business) associated with e-government and performance of e-government projects are included.
- *National-level development*: such an approach takes account of political and sociological indicators related to e-government development such as e-participation, e-inclusion, social inclusion and social welfare etc.
- *Evaluation of e-government policies, issues and barriers*: public interest, expectations of different stakeholders and the integration of ICT policies and objectives with broader public policy goals and the organizational changes are taken into consideration in this kind of assessment.

### 2.4.3 E-government Evaluation Methodologies

Among numerous e-government assessment methodologies some of the prevailing ones are WiBE, VMM and MAREVA.

The WiBe4.1 framework for economic efficiency assessments is provided by the German Ministry of the Interior. It is based on two steps:

- In the first step, parameters that have an impact on the economic efficiency of the project and the manifestations of these impacts are identified.
- In the second step, economic efficiency of the project is determined. It focuses on economic efficiency in the monetary sense and economic efficiency in a broader sense (Röthig 2007; 2010).

In addition, as reported by Röthig (2007; 2010) the framework is concerned with ICT project proposals (not yet in use products) and depends mainly on expert opinion and calculation during the planning cycles of a project. It is mainly applied ex ante (project proposals and portfolio considerations). In the monetary sense economic efficiency of an e-government project proposal is expressed by its net present value, qualitative data are transformed into different benefit analysis key figures. Economic impacts of an e-government or ICT project can be assessed diligently and comprehensively. However, user satisfaction is not measured as well as economic impacts.

There are four dimensions in the assessment process of the WiBE4.1 framework.

*Economic efficiency in a monetary sense (profitability):* Under this dimension development costs and development benefits and operating costs and operating benefits are taken into consideration.

*Urgency of the IT measure(project):* Urgency to replace the old system and compliance with administrative regulations and laws are considered.

*Qualitative and strategic importance of the IT measure(project):* Includes assessment of priority of the IT project, increase in quality of dedicated tasks, control of information of the administrative/political level and finally staff-related effects.

*External effects of the IT measure(project):* Evaluation of replacement urgency from the external customer's perspective, user friendliness from the customer's perspective, external economic effects, increased quality and performance and finally synergies (Röthig 2007; 2010).

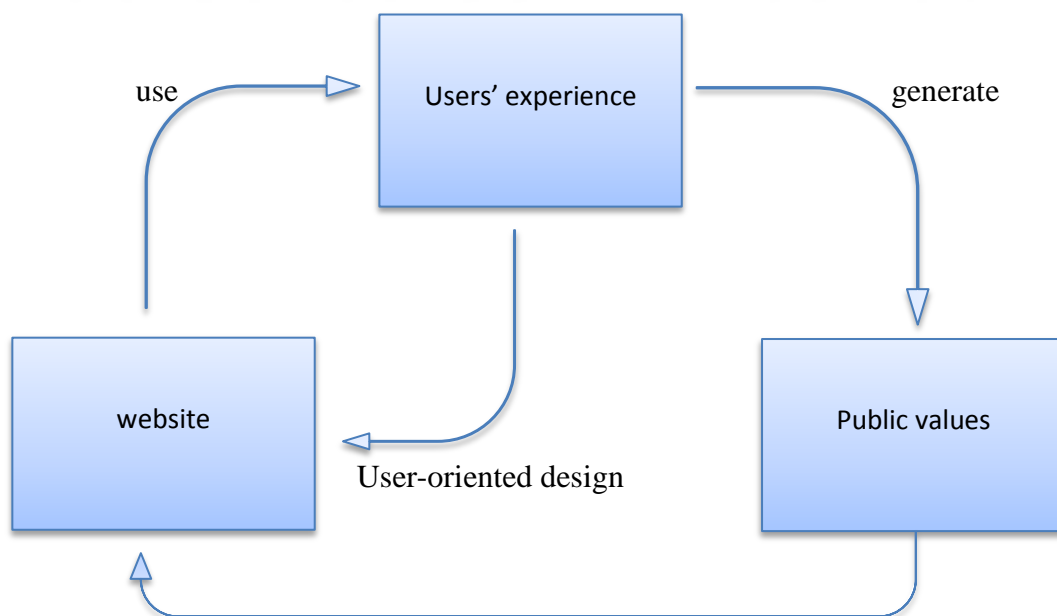
Another framework that measures the value of e-services is the Value Measuring Methodology (VMM) developed in America in 2002. The framework aims to define, capture and measure the value of e-services with a focus on value, risk and cost associated with an ICT project. In the process of decision making, VMM considers three essential factors namely value, cost and risk. Value aspect is interested in the potential benefits of an e-service to direct users, society as a whole and government itself while cost aspect pays attention to economic efficiency and finally risk aspect takes account of what could make costs increase or what could affect performance goals negatively. In the framework, five factors of value are taken into consideration in the process of assessment: direct user value, social value, government operational / foundational value, government financial value and strategic / political value (Booz 2004).

The next framework is called MAREVA, developed by the French eGovernment Agency (ADAE), was set up in 2005. It can be applicable to both ex-ante and ex-post assesment of ICT projects. The framework includes calculation of return on investment (ROI) before implementation of a project. MAREVA framework takes full account of : a) state financial value b) public service social and operational value, c) direct customer value d) project necessity, and e) risk in the measurement process (ADAE 2007 as cited in Bhatnagar and Singh 2010; Stanimirovic and Vintar 2013).

When it comes to Turkey, there are some studies carried out in the country in the context of e-government evaluation so far. For instance, Osman et. al.(2014) in their study developed a measurement framework for user satisfaction. Their framework consist of four main constructs: cost; benefit; risk and opportunity (COBRA). After developing the framework they tested and validated it. COBRA framework is a useful approach for evaluating the success of different e-services from citizens' perspective and it can be generalised to other perspectives.

Another study by Karkin and Janssen (2014), focuses on evaluating PVs by creating an overview of common measures for evaluating websites and by adding the PV perspective. The PV perspective is introduced for assessing web-sites and operationalized public values, in this way contributing to making the public value perspective measurable. These measures are used to analyze Turkish metropolitan municipality websites. A combination of conventional and PV criteria was employed for evaluating the websites. As a result of assessments, it was observed that the websites performed satisfactorily on conventional indicators, but much less well on PVs measures. PVs realization is most of the time omitted while building websites user orientation and functionality are the main criteria. In the process of building websites, the overall objectives and PVs are not taken into account and how to realize value creation mechanisms is not considered. A shift is proposed from the focus from user-oriented design to PVs-oriented design. Nevertheless, PVs orientation does not mean that the shift will exclude user orientation in website design. The authors create a new model for website operation and design. Their model is illustrated as follows:

**Figure 19 Public values design**



Source: Karkin and Janssen 2014

## **2.5 Public Value and e-Government**

### **2.5.1 An Overview**

As the proponent of the concept of public value, Mark Moore (1995) argues that the aim of managerial work in the public sector is to create public value just as the aim of managerial work in the private sector is to create private value. He argues that in the public sector value is rooted in the preferences and perceptions of individuals. Public sector managers must work hard to define what is valuable for citizens as well as to produce that value. Consequently, public administrators must satisfy some kinds of desires and operate in accordance with some kinds of citizen perceptions. Therefore, the capacity of a public institution to meet citizen demands and preferences is an important part of its value-creating capabilities.

Parallel to this, Harrison et al. (2012) acknowledge that public organizations aim to create public value and they meet public goals through public value with respect to substantive benefits as well as the intrinsic value of better government. Public value presents some basic lines for decision makers and public institutions in performing policies, making decisions on how to allocate resources and choosing proper systems of delivery. With the view of the public value, the ethos and values of any public organisation, service provider or profession must be judged by the extent to which they comply with the criterion of value: better outcomes, services and trust (Kelly, Mulgan and Muers 2002).

Further, public value is a value which is consumed collectively by society as a whole not individually. Public administrators must produce something whose benefits to specific clients are greater than the costs of production; and they must do it in such a way that assures citizens and their representatives that something valuable for them has been produced. If public managers are to create public value over the long run the policies they design should then reflect the proper interests and concerns of the citizens. Moreover, as everything has been undergone a change such as citizens needs and expectations public administrators required to be adaptable to their new political and task environment and new purposes and be innovative and experimental Moore (1995).



Moreover, operations of public organizations on the provision of public services should be guided by what is valuable to citizens. (Moore, 1995). That is why the ultimate goal of public programs, policies and government actions, including e government, is to create value for citizens and the society as a whole (Karunasena and Deng 2012).

According to Kelly, Mulgan and Muers (2002), PV is the value created by government actions through provision of services, regulation of laws and other related actions. This value is ultimately defined by the public in democracies. Preferences of citizens that are expressed through a variety of means and refracted by the decisions of politicians determine the value. In comparison with the conventional model, public value provides a broader measure in the new public management literature, as it covers outcomes, the means used to deliver them and also trust and legitimacy. Issues such as equity, ethos and accountability are addressed by the new approach. Some of this full range of factors cannot always be considered, understood or managed with the current public management practice.

On the other hand, government institutions, private entities, non-profit or voluntary organizations, service users, or various other related settings can produce public value. It is not who produces it that makes the value public. It is a matter of who consumes it instead (Alford and Hughes, 2007).

In order to create public value it will be very important to achieve effective management and use of knowledge as well as proper production of it. User expectations regarding increased level of participation to processes, transparency of policy making, efficient management of knowledge and government's flexibility to adapt to ever-changing and differing environments and needs of different stakeholders are to be met since these elements play a key role in the achievement of a good and democratic governance (Centeno, Van Bavel and Burgelman 2005). Accordingly, Kelly, Mulgan and Muers (2002) explain that the most important point in public value is public preferences. In democracies, the only authority to determine what is ultimate value is the public. Generally, citizens' preferences of value tend to be in three categories: outcomes, services and trust. These provide a useful way of thinking about the dimensions of public value although they may overlap to some extent.

Additionally, PV can be created by establishing and operating a public institution that meets citizens' desires (Moore 1995), improving the quality of public services and achieving desired outcomes (Kelly, Mulgan and Muers 2002). In other words, PV, in the broadest perspective, focuses on the collective and societal interests that are served by special institutional arrangements and activities of government. A public value framework can help to determine the value of government activities. (Harrison et al 2011)

One of the most important expectations of citizens from government is the outcomes of services. While the most important expectation in the previous centuries was peace and security, public health, poverty reduction and improvement in the environment became necessarily important expectations in the 19th and 20th centuries. As a consequence, more attention has been paid on outcomes by governments (Kelly, Mulgan and Muers 2002).

Likewise, the creation of public value includes and requires various democratic, social, economic, environmental and governance roles of governments. Some examples of these roles can be:

- to provide public administration and public services (health, education, and social care),
- to develop, implement and evaluate policies and regulations,
- to manage public finances,
- to guarantee democratic political processes,
- to provide equality between genders, social inclusion and personal security and
- to manage Environmental sustainability and sustainable development (Centeno, Van Bavel, and Burgelman 2005).

Another consideration of PV argues that in general, public institutions produce public value through delivering some sort of social and economic outcomes that are aligned to citizen preferences and expectations in a cost-effective way. In this sense, governments can generate public value by increasing either outcomes or cost-effectiveness (Cole and Parston 2006). Accordingly, public value approach seeks a solution that assures the best possible cohesion between the expectations and interests of the citizens and the actual deliverables of government policies or actions (Cordella and Bonina 2012).

In the same way, Kelly, Mulgan and Muers (2002) argue that government can do numerous things that the public would value. But, there are three mainly important categories of value; services, outcomes, trust. One thing cannot be defined as valuable for the mere reason of being desirable. One thing is of value only when individuals or the public are willing to give something in return for it. The way that citizens sacrifice for government is not limited with monetary terms (i.e. taxes/charges), these also include granting coercive powers (e.g. in return for security), disclosing private information (e.g. in return for more personalised information/services), sacrifice of time (e.g. as a school governor or a member of the territorial army), or other personal resources such as blood. In event that the citizens want the government to produce something but they want to give nothing in return, this means that it is not of real public value.

Similarly, Kearns (2004) acknowledge that there are three significant sources of public value:

- *delivery of high quality services*: there is a set of factors that drive user perception in relation to services such as service availability, user satisfaction, perceived importance of services, fairness of service delivery and the cost.
- *achievement of outcomes*: these outcomes can be considered as desirable by the public namely improvements in health, reduction in poverty or Environmental sustainability.
- *trust in public institutions*: it helps citizen to accept government action and feel a sense of association with it.

On the other hand, Harrison et al (2011) describes the public value in terms of seven general types of value that capture the range of possible results of government actions:

- *Economic* – impacts on current or future income, asset values, liabilities, entitlements, or other aspects of wealth or risks to any of the above.
- *Political* – impacts on a person's or group's influence on government actions or policy, on their role in political affairs, influence in political parties, or prospects for public office.
- *Social* – impacts on family or community relationships, social mobility, status, and identity.

- *Strategic* – impacts on a person’s or group’s economic or political advantage or opportunities, goals, and resources for innovation or planning.
- *Quality of Life* – impacts on individual and household health, security, satisfaction, and general well-being.
- *Ideological* – impacts on beliefs, moral, or ethical commitments, alignment of government actions or policies or social outcomes with beliefs, moral, or ethical positions.
- *Stewardship* – impacts on the public’s view of government officials as faithful stewards or guardians of the value of the government in terms of public trust, integrity, and legitimacy.

For this reason, better understanding and addressing the citizen’s needs and expectations and realizing to what degree the users of e-government should be empowered is necessary to create public value for citizen. In addition, business needs, such as the need to minimise the costs of interacting with public administration, and the need for increased competitiveness must be taken into account by governments. From the EU point of view e-government is considered to be as a tool for better government and therefore increasing public value. (Centeno, Van Bavel and Burgelman 2005)

From this point of view, it is very important to establish a visionary understanding of e-government which would create greater public value by meeting citizens’ expectations of participative, efficient and transparent policy design. Bonina and Cordella (2009) argue that person use of public services is the stem of citizen oriented benefits. These benefits have many common points with those derived from consuming products that are purchased from private sector. The public makes an evaluation of the balance between the cost and levels of services they receive, even when there are other vitally important factors.

Scott et al (2011), in their research that adopts the public value approach to provide the first empirical assessment of e-government success from a citizen perspective, state that when set in the public sector, it is more challenging and difficult to figure out the performance of Information Systems (IS) considering that public sector assessment must combine efficiency, quality and reliability which are generally studied in private sector, with accountability, citizen trust and creation of public value. They also state that public

value is proposed as being appropriate for capturing the breadth of purposes and proposed outcomes of public services.

In the same manner, Centeno, Van Bavel and Burgelman (2005) suggest that from a European and prospective approach, it seems that current thinking on e-government, focusing on greater quality and efficiency in public services need to be reviewed. Moreover, they place e-government at the core of public management modernisation and reform, where technology is used as a strategic tool to modernise structures, processes, regulatory frameworks, human resources and the culture of public administrations to provide better government, and ultimately increased public value. This view includes the provision of a more knowledge-based, user-centric, better distributed, and networked e-Government.

Information and Communication Technologies have positive influences on the organisation of the public sector. However, it is not clear whether the e-government policies and investments made so far have brought positive outcomes and consequences for the overall society or not. Creation of public value depends on the achievements of objectives set by government programs and the delivery of public service to the citizens. Therefore, creating public value not only depends on the efficiency of public administrations or public managers, but also it depends on the effectiveness in the achievements of socially desirable outcomes some of which related to democracy (Bonina and Cordella 2009).

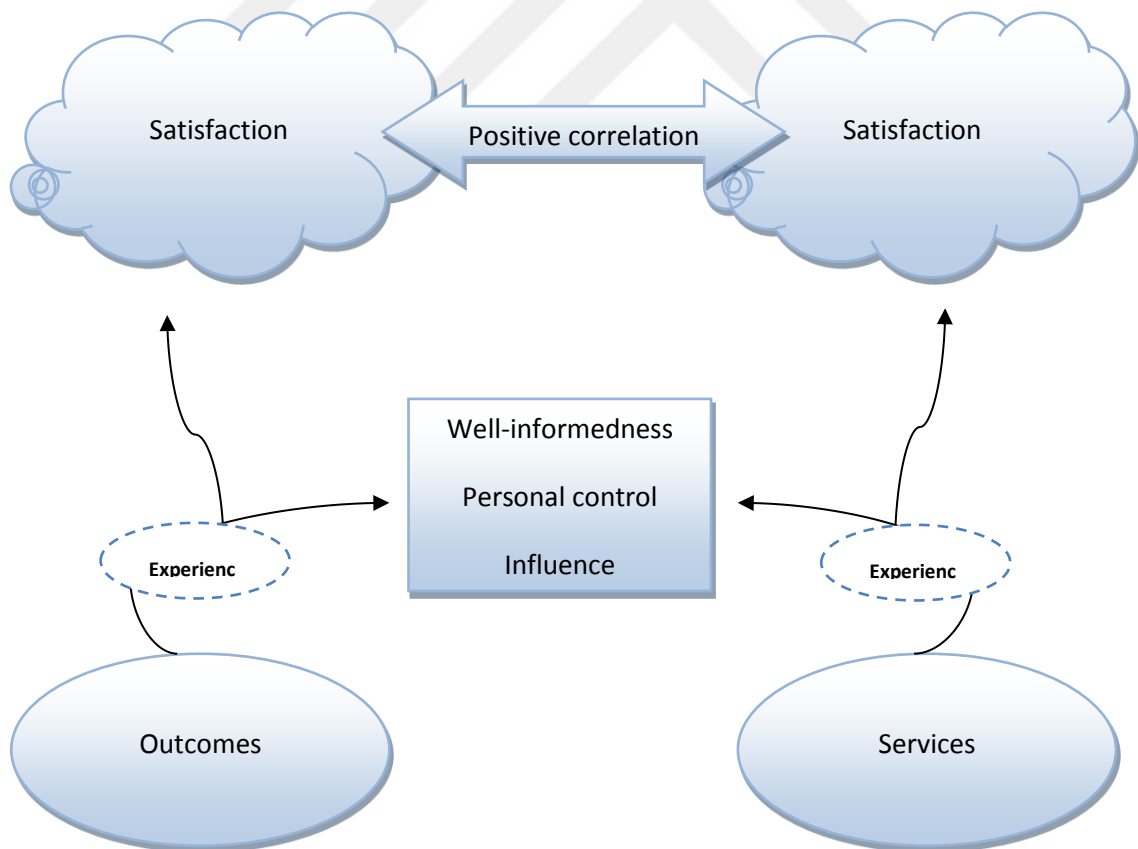
At this point, Kelly, Mulgan and Muers (2002) suggested that the concept of public value provides an important yardstick against which to measure the performance of public institutions and government policies and, make decisions on effective resource allocation and select appropriate systems of delivery. Likewise, Karunasena and Deng (2012) acknowledge that from the perspective of citizens, the concept of public value is an appropriate benchmark for evaluating the performance of e-government initiatives. According to Castelnovo and Simonetta (2008) public value creation for the society through provision of services is related to the level of quality with which they are delivered in terms of: service availability; satisfaction levels; importance; fairness of provision; and cost.

## 2.5.2 Frameworks For PV Assessment of e-Government

In line with the increasing popularity of PV concept in assessing the impacts of e-government projects various measurement frameworks were developed by researchers. Some of the frameworks were mentioned below.

Grimsley, Meehan and Gupta (2007) developed an evaluative design framework based upon the concept of PV. Their framework focuses on outcomes, services and trust as well as user satisfaction as factors that would create public value. They argue that user satisfaction and trust are underpinned by experiential dimensions of well-informedness, personal control and influence. The framework is based on an examination of a significant, live case study in London, UK. Figure 20 illustrates their framework.

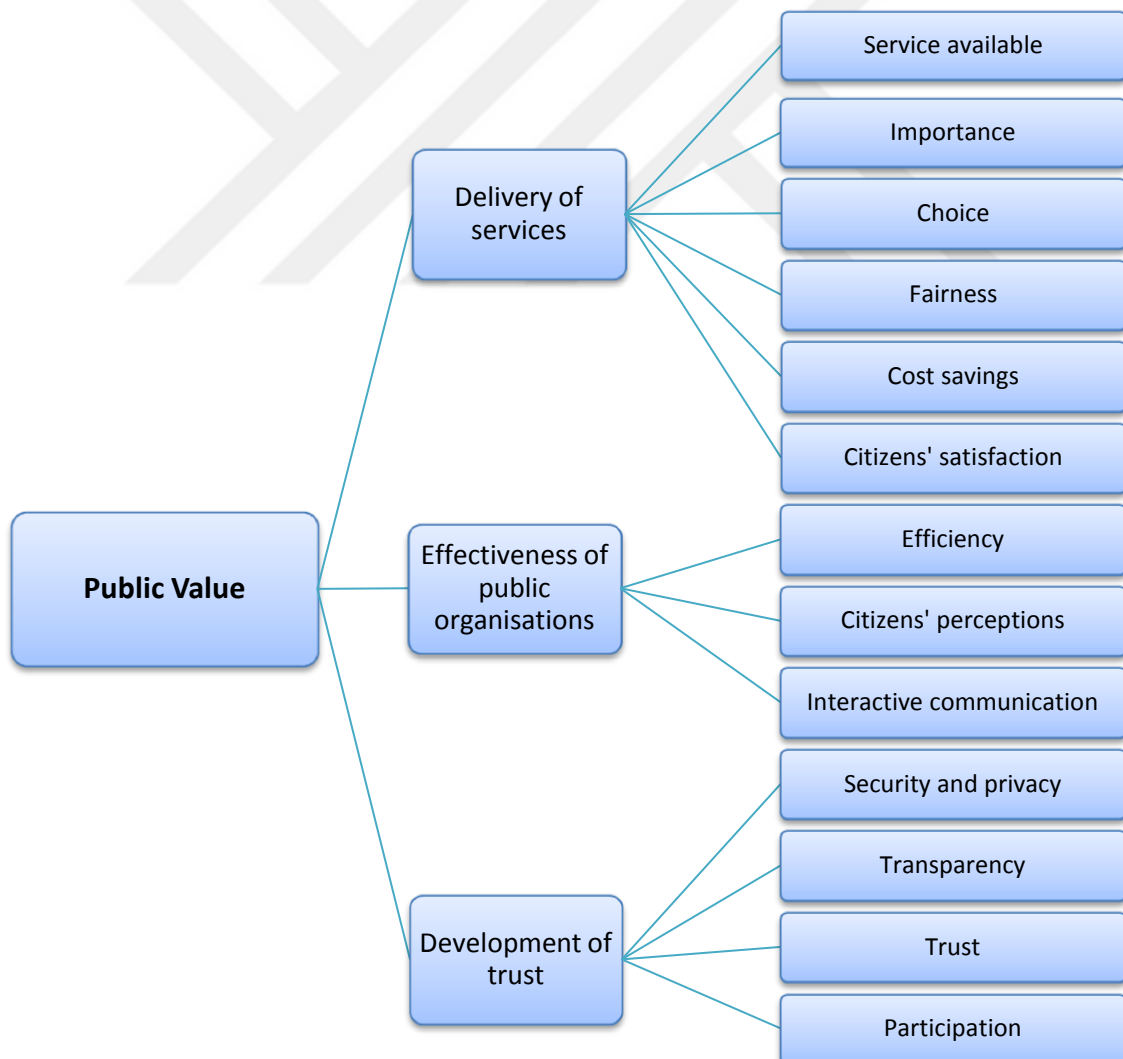
**Figure 20 The framework of Grimsley, Meehan and Gupta**



Source: Grimsley, Meehan and Gupta 2007

Bai (2013) developed a framework for measuring public value of e-government. According to the framework there are three sources of public value creation through e-government namely a) Delivery of Public Services, b) Effectiveness of Public Organisations, c) Development of Trust. In the framework for example, value created through the Delivery of Public Services is assessed by the value of services available, importance, choice, fairness, cost savings and citizens' satisfaction. Value created through Effectiveness of Public Organizations is assessed considering the value of efficiency, citizens' perceptions, interactive communication. Finally the value created through Development of Trust is assessed through security and privacy, transparency, trust and participation. Figure 21 represents the framework.

**Figure 21 Indicators associated with the attributes of the conceptual framework**



Source: Bai 2013

In the framework of Harrison et al (2011) they argue that value can be produced by value-generating mechanisms; detecting these mechanisms allows to determine the means by which a government action is related to the production of one or more public values. Value-generating mechanisms are defined as being; Efficiency, Effectiveness, Intrinsic enhancements, Transparency, Participation, Collaboration. For example, transparent, participative, or collaborative government activities may have the impact of enabling a citizen to derive substantive financial, social, political or strategic values and/or intrinsic value related to government itself. Accordingly transparency, participation, and collaboration are meaningful when they enable groups of people to pursue their objectives.

- *Efficiency* – obtaining increased outputs or goal attainment with the same resources, or obtaining the same outputs or goals with lower resource consumption.
- *Effectiveness* – increasing the quality of the desired outcome.
- Intrinsic enhancements – changing the environment or circumstances of a stakeholder in ways that are valued for their own sake.
- *Transparency* – access to information about the actions of government officials or operation of government programs that enhances accountability or influence on government.
- *Participation* – frequency and intensity of direct involvement in decision making about or operation of government programs or in selection of or actions of officials.
- *Collaboration* – frequency or duration of activities in which more than one set of stakeholders share responsibility or authority for decisions about operation, policies, or actions of government.

Harrison et al (2012) also argue that transparency, participation and collaboration are viewed as the best policies that enable citizens to enact various roles that they are to play. Transparency is not what citizens desire to see only, instead they value the transparency of information and actions so that they can actually and ultimately scrutinize and be sure about the concrete outcomes of government action. Participation of citizens also includes an aim of producing government actions that respond to and reflect their input in meaningful ways. Also, collaboration is only meaningful when participants can contribute useful expertise, and substantive decisions are under consideration. These policies must be genuinely enacted when implemented even if they are not ultimate ends in themselves.



Another measurement scale was developed by Karunasena (2012) through quantitative and qualitative research. After the quantitative survey, he formed a final measurement scale that has three dimensions of public value of e-government: Delivery of Quality Public Services, Effectiveness of Public Organisations, and Achievement of Socially Desirable Outcomes.

According to his final measurement scale, based on his quantitative research, the public value of e-government can be measured by the value of Delivery of Quality Public Services, Effectiveness of Public Organisations, and Achievement of Socially Desirable Outcomes. These three major dimensions have their sub-dimensions. Therefore the value of :

- *Delivery of Public Services* can be measured by the value of a) Quality of information online, b) Functionalities of services and c) User-orientation of services
- *Effectiveness of Public Organisations* can be measured by the value of a) Organisational efficiency, b) Openness of public organisations
- *Achievement of Socially Desirable Outcomes* measured by the value of a) Equity, b) Self development of citizens ,c) Trust in e-government, and d) Environmental sustainability (Karunasena 2012).

We intended to make use of Karunasena's framework because;

- firstly, our aim was to conduct a quantitative study,
- secondly, Sri Lanka and Turkey ranked very close in terms of e-government development index (EGDI) (UN 2014),
- thirdly, the framework was tested and validated in Sri Lanka and,
- lastly, both Turkey and Sri Lanka are developing countries.

### 3 METHODOLOGY

#### 3.1 Research Approaches

*“Science is an enterprise dedicated to ‘finding out’. No matter what you want to find out, though, there will likely be a great many ways of doing it. Ultimately, scientific inquiry comes down to making observations and interpreting what you have observed. You need to determine what you are going to observe and analyze: why and how. That is what research design is all about (Babbie 2013).”*

Babbie in his book “The practice of Social Research” (2013) argues that there are three most common objectives of social research namely exploration, description and explanation although it may have various purposes.

- *Exploration:* An important amount of social research is carried out to explore a topic. The nature of exploratory research requires a researcher to examine a new research topic or subject.
- *Explanation:* Explanatory social research aims to explain things focusing on question of ‘why’.
- *Description:* One of the basic objectives of social science is to describe situations, events or phenomenon. In this kind of social research, researchers make observations and describe what was observed. Descriptive studies try to answer questions of ‘what, where, when and how’.

We made use of quantitative method and try to answer question of ‘what’. Therefore, we designed a descriptive study to be able to successfully answer our research questions.

### **3.2 Research Questions**

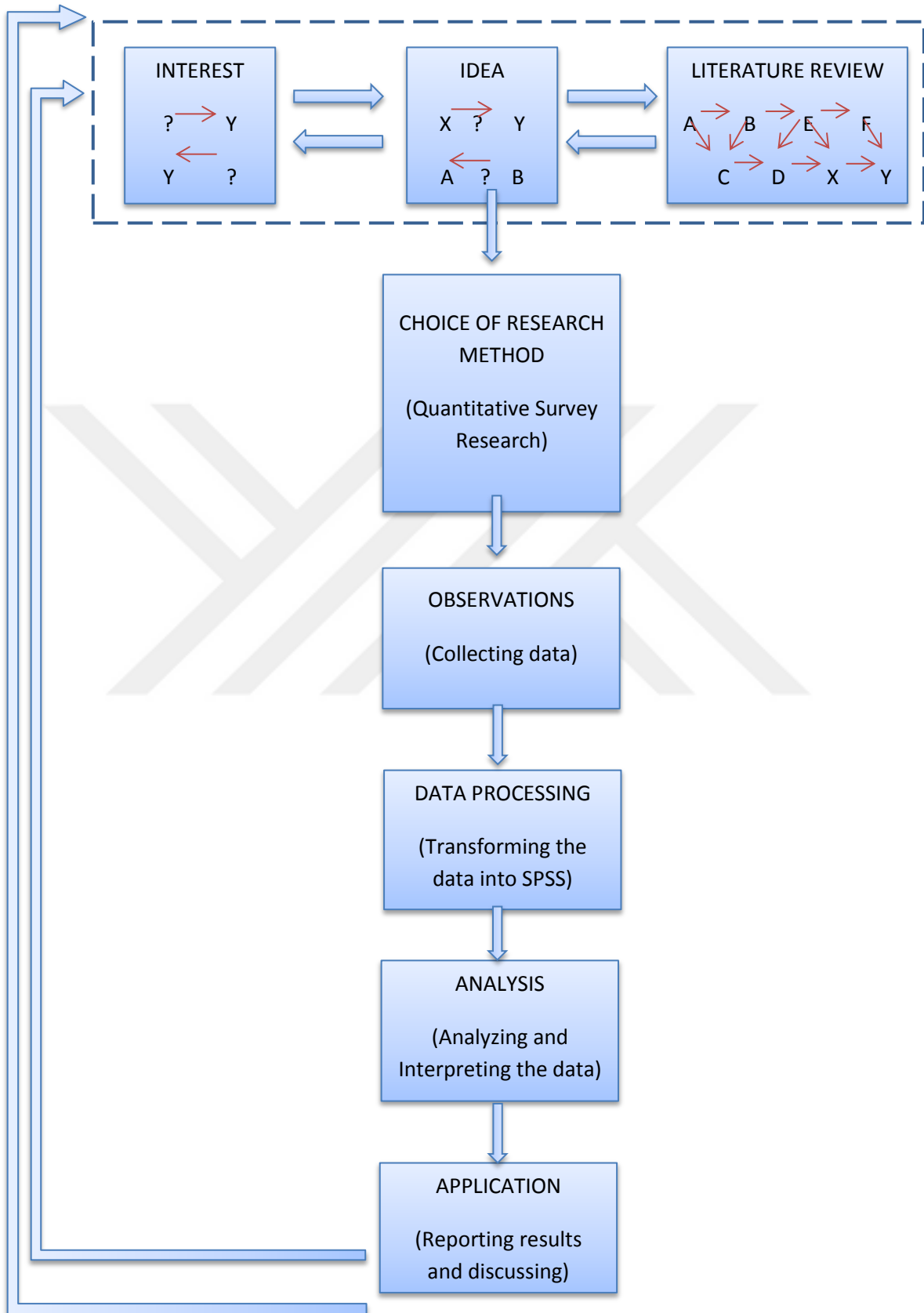
Research questions in social science helps researchers facilitate operationalization of research concerns. In addition to this, research questions in descriptive empirical studies are answered through descriptive analysis of data (Nenty 2009). This study aims to collect empirical evidence regarding the assessment of e-government impact from a public value perspective and therefore to measure the public value of e-government initiatives in Turkey. In order to achieve this aim following research questions have been formulated.

1. What are the critical factors for measuring the Public Value of e-government in Turkey?
2. What critical factors create public value through Delivery of Public Services in Turkey?
3. What critical factors create public value through Effectiveness of Public Organizations in Turkey?
4. What critical factors create public value through Achievement of Social Outcomes in Turkey?
5. Are there any differences between the means regarding perceived public value of e-government according to groups by gender, age and education level?

### **3.3 Research Design**

The research design of a thesis should be helpful for readers to learn about the study. For this reason, drawing a figure demonstrating the organisation of the study is important. It is necessary to provide a figure of research design to understand the relationships among the sections of the dissertation (Sampson 2012). Therefore, research design of the study is shown in the Figure 22.

**Figure 22 Traditional Image of Research Design adapted from Babbie (2013)**



### **3.4 Choice of Research Method**

In general, methods of data gathering falls into two categories namely positivist and interpretive. Testing theories is the main aim of positivist methods by making use of a deductive research approach using empirical data. Contrary to this, interpretive methods aim at building theories by conducting an inductive research approach which starts with data and tries to derive a theory. Positivist research mostly uses quantitative data while interpretive research mostly tends to use qualitative data (Bhattacharjee 2012).

We try to collect empirical data from citizens on the perceived public value of e-government. As a result of the fact that the study is an empirical research in nature, a positivist approach and quantitative method was preferred.

### **3.5 Data Collection**

On the one hand, because the study is an empirical research a positivist approach was preferred. On the other hand, the research questions are in the form of ‘‘what’’ which is mostly associated with descriptive research. Therefore, a quantitative approach considered as a useful way of data collection.

Firstly, the scientific literature was reviewed. Then primary data were collected through close-ended questionnaires. Two different questionnaires were applied to e-government users in Turkey. The questionnaire is adapted from Karunasena (2012).

The questionnaires consist of two parts. First part asks for demographic information while the second part consists of variety of questions regarding the dimensions of PV of e-government. Questions of first questionnaire were designed in the form of seven point likert-type scale. Close-ended answers were ranging from very important to not important at all. On the other hand, questions of the second questionnaire were designed in the same form as the former one. However, this time close-ended answers were ranging from strongly agree to strongly disagree. The first questionnaire was sent to 1.500 e-government users in Turkey. 712 responses were received. 557 of the questionnaires obtained from

participants were valid. The second questionnaire was sent to 1200 e-government users. 520 responses were received and 356 of them were valid.

First questionnaire aimed at identifying what are the critical factors for measuring the PV of e-government from citizens' perspective. Following this, once the critical factors for measurement were identified, then second questionnaire tried to understand the perceptions of citizens regarding the PV of e-government indicating whether e-government creates PV or not according to them.

### **3.6 Data Analysis**

Within the scope of first survey, 557 valid questionnaires were obtained. As for second survey, 356 valid questionnaires were obtained. Once the data were collected then they were transformed into SPSS. Since the research questions of this study are in descriptive nature, descriptive analysis of data was carried out. Independent samples t-test and Analysis of Variance test were run in order to compare the differences of mean scores between different groups.

### **3.7 Validity and Reliability**

Translation of the questionnaire was made using double translation method. In order to ensure an accurate translation three different translators were asked for making the translation. Three different specialist were asked to conduct content analysis as well. Following this, both questionnaires distributed and applied to 60 people for a pilot application in order to ensure the face and content validity. After all, the questionnaires were redesigned and distributed to citizens for actual application.

For both the first and the second questionnaire, Exploratory Factor Analysis was run using the extraction method of Principal Component Analysis and the rotation method of Varimax With Kaiser Normalization. The alpha reliability of the scales for all factors are greater than 0.70, indicating that the scale had good reliability. For some studies in which a scale is applied in the context of a different culture particularly for the first time, items with a factor loading lower than 0,5 could be retained (See Briscoe, Hall, DeMuth, 2006).

Thus, those items with a factor loading greater than 0,45 were retained while those items with a factor loading lower than 0,45 were deleted.

### **3.8 Limitations**

Although the study conducted a quantitative survey the scale was developed by Karunasena (2012) not by the researcher himself. Another limitation to this study is that we employed the measurement framework developed by Karunasena (2012) based solely on his quantitative survey results as we intended to conduct a quantitative study too.

Further research can be done by gathering data from a larger and more representative sample. Another limitation is that we only used quantitative method for this study therefore leaving a room for further qualitative studies.

It is also recommended for future work to develop a public value measurement framework and scale within Turkish e-government context using both qualitative and quantitative methods and then empirically test and validate it.

## 4 EMPIRICAL FINDINGS

### 4.1 Findings of First Survey

Results of Factor Analysis and Reliability Analysis for the first questionnaire were demonstrated in the Table 5. After performing Factor Analysis the items *uso\_1*, *ope\_4*, *ope\_6* and *ope\_7* were deleted since they did not have factor loadings greater than 0,45. What is more, the item *ser\_2* was deleted since it had cross-loading on multiple factors. Similarly, the item *equ\_3* had a factor loading on Trust factor rather than on equality factor. However, it is understood in the content analysis conducted by three different specialists that this item did not fit the Trust scale in terms of content. That is why, the item *equ\_3* was deleted too.



**Table 5 Reliability and Factorial Validity of the First Questionnaire**

	F1	F2	F3	F4	F5	F6	F7	F8	F9
Self_4	,765								
Self_5	,762								
Self_3	,744								
Self_2	,681								
Self_1	,616								
Eff_3		,758							
Eff_2		,752							
Eff_1		,699							
Eff_5		,665							
Eff_4		,607							
Eff_6		,574							
Env_2			,729						
Env_3			,700						
Env_4			,687						
Env_5			,664						
Env_6			,626						
Env_1			,505						
Qua_2				,815					
Qua_3				,766					
Qua_5				,747					
Qua_4				,747					
Qua_1				,733					
Tru_3					,690				
Tru_2					,665				
Tru_5					,665				
Tru_4					,614				
Tru_1					,578				
Uso_6						,715			
Uso_5						,703			
Uso_4						,696			
Uso_3						,675			
Uso_2						,574			
Uso_7						,550			
Ope_3							,812		
Ope_2							,791		
Ope_5							,644		
Ope_1							,561		
Ope_8							,474		
Ser_4								,742	
Ser_6								,736	
Ser_3								,736	
Ser_1								,626	
Ser_5								,615	
Equ_1									,819
Equ_5									,805
Equ_2									,531
Equ_6									,477
Equ_4									,467
Cronbach's Alpha	,921	,915	,898	,879	,946	,836	,873	,837	,775

When we look at sampling adequacy, Table 7 indicates that representativeness of the sample is good.

<b>Table 7 Sampling Adequacy of the first questionnaire</b>			
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.	Bartlett's Test of Sphericity		
	Approx. Chi-Square	df	Sig.
,956	19097,1	1128	,000

As shown in the Table 8, it can be interpreted from the descriptive statistics that citizens mostly value Trust-related issues, covering security, privacy and protection of personal info and transactions, with a mean value of 6,53. On the other hand, the least valued outcome of e-government according to citizens when compared to other factors is equity, covering provision of e-services in local languages, content for disabled people, provision of cultural and religious info etc., with a mean value of 5,58.

**Table 8 Descriptive Statistics For the First Questionnaire**

	N	Minimum	Maximum	Mean	Std. Deviation
<b>Self</b>	551	1,00	7,00	6,1009	1,16343
<b>Eff</b>	550	1,00	7,00	6,2791	,95626
<b>Env</b>	538	1,00	7,00	6,3045	,95564
<b>Qua</b>	556	1,00	7,00	6,1180	1,03942
<b>Tru</b>	548	1,00	7,00	6,5332	,92584
<b>Uso</b>	557	1,00	7,00	5,7792	1,04247
<b>Ope</b>	551	1,00	7,00	6,0639	1,00464
<b>Ser</b>	557	1,00	7,00	5,9005	1,16085
<b>Equ</b>	553	1,00	7,00	5,5892	1,19656
<b>Valid N (listwise)</b>	513				

As it can be understood from the Table 9, there is not statistically significant difference between the scores of eight factors according to gender but Functionalities of services. For example, the mean score given by females to the value of Self development of citizens (M

= 6,19; SD = 1,18) is not significantly different  $t = 1,55$ ; two-tailed  $p = ,12$  from those of males (  $M = 6,03$ ;  $SD = 1,14$ ). However, the mean score given by females to the value of Functionalities of services ( $M = 6,06$ ;  $SD = 1,07$ ) is significantly higher  $t = 2,86$ ; two-tailed  $p = ,004$  than those of males (  $M = 5,78$ ;  $SD = 1,20$ ).

**Table 9 Differences between the means of gender groups**

Gender		N	Mean	Std. Deviation	t	Sig. (2-tailed)
Self	<b>Female</b>	226	6,1929	1,18402	1,54	,12
	<b>Male</b>	325	6,0369	1,14638		
Eff	<b>Female</b>	223	6,3259	,90278	,947	,34
	<b>Male</b>	327	6,2472	,99117		
Env	<b>Female</b>	222	6,3724	,89013	1,38	,16
	<b>Male</b>	316	6,2569	,99773		
Qua	<b>Female</b>	227	6,1410	1,07467	,43	,66
	<b>Male</b>	329	6,1021	1,01574		
Tru	<b>Female</b>	224	6,5839	,86575	1,06	,28
	<b>Male</b>	324	6,4981	,96496		
Uso	<b>Female</b>	227	5,8363	,99259	1,07	,28
	<b>Male</b>	330	5,7399	1,07516		
Ope	<b>Female</b>	227	6,0264	,98968	,-732	,46
	<b>Male</b>	324	6,0901	1,01568		
Ser	<b>Female</b>	227	6,0661	1,07984	2,86	,004
	<b>Male</b>	330	5,7867	1,20185		
Equ	<b>Female</b>	225	5,6267	1,15589	,61	,54
	<b>Male</b>	328	5,5634	1,22477		

When it comes to age, according to the results of one-way ANOVA test some of the mean scores of value given by different groups to the factors that would create public value are significantly different while some are not. There is not statistically significant difference between the mean scores of different age groups with respect to the value they give to Self development of citizens, Organizational efficiency, User orientedness of services, Functionalities of the services and Equity as an outcome of e-government. However, there is statistically significant difference between the mean scores of different age groups with respect to the value they give to Environmental sustainability, Quality of services, Trust and Openness of public government. Table 10 demonstrates the summary ANOVA tests results.



Table 10 Differences between the means of age groups a summary of ANOVA tests							
Dependent variable	Age	N	Mean	Std. Dev.	Minimum	Maximum	Sig.
Self	20 & less	92	6,0731	1,33433	1,00	7,00	,201
	21-30	185	6,1015	1,10208	1,00	7,00	
	31-40	117	6,0085	1,25352	1,00	7,00	
	41-50	82	6,5562	,55354	1,00	7,00	
	51& more	75	5,9333	1,85421	1,00	7,00	
	Total	551	6,1009	1,16343	1,00	7,00	
Eff	20 & less	91	5,9848	1,27587	1,00	7,00	,115
	21-30	185	6,2969	,90133	1,00	7,00	
	31-40	117	6,3202	,95708	1,00	7,00	
	41-50	82	6,5000	,47140	1,00	7,00	
	51& more	75	6,1778	1,37360	1,00	7,00	
	Total	550	6,2791	,95626	1,00	7,00	
Env	20 & less	90	5,9150	1,30059	1,00	7,00	,007
	21-30	179	6,3043	,92036	1,00	7,00	
	31-40	116	6,4254	,83498	1,00	7,00	
	41-50	81	6,6022	,54378	1,00	7,00	
	51& more	72	6,1000	1,44585	1,00	7,00	
	Total	538	6,3045	,95564	1,00	7,00	
Qua	20 & less	92	5,6393	1,46047	1,00	7,00	,004
	21-30	189	6,1458	,99865	1,00	7,00	
	31-40	118	6,2205	,95028	1,00	7,00	
	41-50	82	6,3625	,60841	1,00	7,00	
	51& more	75	5,9600	1,04799	1,00	7,00	
	Total	556	6,1180	1,03942	1,00	7,00	
Tru	20 & less	91	6,1472	1,30805	1,00	7,00	,001
	21-30	183	6,5492	,86569	1,00	7,00	
	31-40	117	6,6547	,80841	1,00	7,00	
	41-50	82	6,7813	,47481	1,00	7,00	
	51& more	75	6,0667	1,57782	1,00	7,00	
	Total	548	6,5332	,92584	1,00	7,00	
Uso	20 & less	92	5,6339	1,31365	1,00	7,00	,451
	21-30	190	5,7572	1,01280	1,00	7,00	
	31-40	118	5,8689	,97375	1,00	7,00	
	41-50	82	5,9948	,69365	1,00	7,00	
	51& more	75	5,6556	1,59795	1,00	7,00	
	Total	557	5,7792	1,04247	1,00	7,00	
Ope	20 & less	92	5,6364	1,29848	1,00	7,00	,010
	21-30	185	6,1066	,94467	1,00	7,00	
	31-40	117	6,1077	1,00706	1,00	7,00	
	41-50	82	6,3000	,61382	1,00	7,00	
	51& more	75	5,8400	1,36109	1,00	7,00	
	Total	551	6,0639	1,00464	1,00	7,00	
Ser	20 & less	92	5,6321	1,42128	1,00	7,00	,164
	21-30	190	5,8688	1,16762	1,00	7,00	
	31-40	118	6,0821	,99764	1,00	7,00	
	41-50	82	6,0313	,90177	1,00	7,00	
	51& more	75	5,9200	1,47900	1,00	7,00	
	Total	557	5,9005	1,16085	1,00	7,00	
Equ	20 & less	92	5,8109	1,23193	1,00	7,00	,117
	21-30	186	5,5749	1,16654	1,00	7,00	
	31-40	118	5,4479	1,28939	1,00	7,00	
	41-50	82	5,9750	,80603	1,00	7,00	
	51& more	75	5,3733	1,50403	1,00	7,00	
	Total	553	5,5892	1,19656	1,00	7,00	

As regards the value given by citizens to factor Environmental sustainability, Table 11 shows that the mean scores of value given by different age groups are significantly different with a  $p$  value of ,007. Considering the Environmental sustainability there is a statistically significant difference between the mean scores of people younger than 20 and people who are between 31-40 and 41-50 years of age with a  $p$  value of ,013.

<b>Table 11 Differences between the means of age groups for Environmental sustainability</b>				
<b>Dependent variable: Environmental sustainability (Tukey HSD)</b>		<b>Post Hoc Tests</b>		
<b>(I) age</b>	<b>(J) age</b>	Mean Difference (I-J)	Std. Error	Sig.
<b>20 &amp; less</b>	31-40	-,51041	,15947	,013
	41-50	-,68712	,21559	,013

As for the value given by citizens to quality of services there is a statistically significant difference, as illustrated in the Table 12, between the mean scores of people younger than 20 and people who are between 21-30, 31-40 and 41-50 years of age with a  $p$  value of respectively ,006; ,005; ,014.

<b>Table 12 Differences between the means of age groups for Quality of services</b>				
<b>Dependent variable: Quality of services (Tukey HSD)</b>		<b>Post Hoc Tests</b>		
<b>(I) age</b>	<b>(J) age</b>	Mean Difference (I-J)	Std. Error	Sig.
<b>20 &amp; less</b>	21-30	-,50655	,14847	,006
	31-40	-,58123	,16715	,005
	41-50	-,72321	,22795	,014

Regarding the value given by citizens to Trust there is a statistically significant difference, as shown in the Table 13, between the mean scores of people younger than 20 and people

who are between 21-30, 31-40 and 41-50 years of age with a  $p$  value of respectively ,026; ,008; ,017.

**Table 13 Differences between the means of age groups for Trust**

Dependent variable: Trust (Tukey HSD)		Post Hoc Tests		
(I) age	(J) age	Mean Difference (I- J)	Std. Error	Sig.
20 & less	21-30	-,40207	,13527	,026
	31-40	-,50753	,15139	,008
	41-50	-,63408	,20469	,017

With respect to the value given by citizens to Openness of public organisations there is a statistically significant difference, as demonstrated in the Table 14, between the mean scores of people younger than 20 and people who are between 21-30, 31-40 and 41-50 years of age with a  $p$  value of respectively ,011; ,032; ,024.

**Table 14 Differences between the means of age groups for Openness of public organisations**

Dependent variable: Openness of public organisations (Tukey HSD)		Post Hoc Tests		
(I) age	(J) age	Mean Difference (I- J)	Std. Error	Sig.
20 & less	21-30	-,47026	,14501	,011
	31-40	-,47133	,16284	,032
	41-50	-,66364	,22145	,024

As for education level, the results of one-way ANOVA test indicate that some of the mean scores of value given by different groups to the factors that would create public value are significantly different while some are not. There is not statistically significant ( $p > ,05$ ) difference between the mean scores of different education-level-groups with respect to the value they give to Self development of citizens, Quality of services, User orientedness of e-services, Functionalities of the services and Equity as an outcome of e-government.

However, there is statistically significant ( $p < ,05$ ) difference between the mean scores of different education-level-groups with respect to the value they give to Environmental sustainability, Organizational efficiency, Trust and Openness of public organisations. A summary of ANOVA results is illustrated in the Table 15.





**Table 15 Differences between the means of educational groups: a summary of ANOVA tests**

Dependent variable	Education	N	Mean	Std. Dev.	Minimum	Maximum	Sig.
Self	High School & lower	124	5,9714	1,22026	1,60	7,00	,57
	Undergraduate	288	6,1312	1,16666	1,00	7,00	
	Postgraduate	139	6,0913	1,12934	1,00	7,00	
	Total	551	6,1009	1,16343	1,00	7,00	
Eff	High School & lower	123	6,0297	1,21441	1,00	7,00	,02
	Undergraduate	288	6,2845	,94604	1,00	7,00	
	Postgraduate	139	6,3969	,79739	1,17	7,00	
	Total	550	6,2791	,95626	1,00	7,00	
Env	High School & lower	124	6,0540	1,09064	1,00	7,00	,03
	Undergraduate	278	6,3123	,97692	1,00	7,00	
	Postgraduate	136	6,4179	,79518	1,83	7,00	
	Total	538	6,3045	,95564	1,00	7,00	
Qua	High School & lower	124	5,8827	1,27134	1,20	7,00	,08
	Undergraduate	293	6,1743	,95479	1,60	7,00	
	Postgraduate	139	6,1058	1,09069	1,40	7,00	
	Total	556	6,1180	1,03942	1,20	7,00	
Tru	High School & lower	122	6,2417	1,10820	1,40	7,00	,01
	Undergraduate	287	6,5565	,92694	1,00	7,00	
	Postgraduate	139	6,6294	,78336	1,40	7,00	
	Total	548	6,5332	,92584	1,00	7,00	
Uso	High School & lower	124	5,7933	1,05332	1,17	7,00	,65
	Undergraduate	294	5,8047	1,05728	1,50	7,00	
	Postgraduate	139	5,7086	1,00323	2,83	7,00	
	Total	557	5,7792	1,04247	1,17	7,00	
Ope	High School & lower	124	5,7189	1,12891	2,20	7,00	,006
	Undergraduate	288	6,1314	,95577	1,20	7,00	
	Postgraduate	139	6,0835	1,02091	2,00	7,00	
	Total	551	6,0639	1,00464	1,20	7,00	
Ser	High School & lower	124	5,7147	1,24039	1,00	7,00	,25
	Undergraduate	294	5,9534	1,08813	1,00	7,00	
	Postgraduate	139	5,8705	1,28195	1,00	7,00	
	Total	557	5,9005	1,16085	1,00	7,00	
Equ	High School & lower	124	5,7589	1,15804	1,00	7,00	,07
	Undergraduate	290	5,6287	1,17953	1,00	7,00	
	Postgraduate	139	5,4029	1,24318	1,60	7,00	
	Total	553	5,5892	1,19656	1,00	7,00	

When we look at the value given by citizens to Organizational efficiency there is a statistically significant difference, as represented in the Table 16, between the mean scores of people with an education level of high school & lower and people with an education level of postgraduate with a  $p$  value of ,021.

<b>Table 16 Differences between the means of educational groups for Organizational efficiency</b>				
<b>Dependent variable: Organizational efficiency (Tukey HSD)</b>		<b>Post Hoc Tests</b>		
<b>(I) Education level</b>	<b>(J) Education level</b>	<b>Mean Difference (I-J)</b>	<b>Std. Error</b>	<b>Sig.</b>
<b>High School &amp; lower</b>	Postgraduate	-,36720	,13758	,021

According to the results in relation to the value given by citizens to Environmental sustainability there is a statistically significant difference, as illustrated in the Table 17, between the mean scores of people with an education level of high school & lower and people with an education level of postgraduate with a  $p$  value of ,025.

<b>Table 17 Differences between the means of educational groups for Environmental Sustainability</b>				
<b>Dependent variable: Environmental Sustainability (Tukey HSD)</b>		<b>Post Hoc Tests</b>		
<b>(I) Education level</b>	<b>(J) Education level</b>	<b>Mean Difference (I-J)</b>	<b>Std. Error</b>	<b>Sig.</b>
<b>High School &amp; lower</b>	Postgraduate	-,36392	,13965	,025

With reference to the value given by citizens to Trust there is a statistically significant difference, as can be seen in the Table 18, between the mean scores of people with an education level of high school & lower and people with an education level of undergraduate and postgraduate with a  $p$  value of respectively ,023 and ,011.

<b>Table 18 Differences between the means of educational groups for Trust</b>				
<b>Dependent variable: Trust (Tukey HSD)</b>		<b>Post Hoc Tests</b>		
<b>(I) Education level</b>	<b>(J) Education level</b>	<b>Mean Difference (I-J)</b>	<b>Std. Error</b>	<b>Sig.</b>
<b>High School &amp; lower</b>	Undergraduate	-,31480	,11936	,023
	Postgraduate	-,38775	,13409	,011

With reference to the valu given by citizens to Openness of public organisations there is a statistically significant difference, as shown in the Table 19, between the mean scores of people with an education level of high school & lower and people with an education level of undergraduate and postgraduate with a p value of respectively ,004 and ,030.

<b>Table 19 Differences between the means of educational groups for Openness of public organisations</b>				
<b>Dependent variable: Openness of public organisations (Tukey HSD)</b>		<b>Post Hoc Tests</b>		
<b>(I) Education level</b>	<b>(J) Education level</b>	<b>Mean Difference (I-J)</b>	<b>Std. Error</b>	<b>Sig.</b>
<b>High School &amp; lower</b>	Undergraduate	-,41244	,12796	,004
	Postgraduate	-,36453	,14347	,030

## 4.2 Findings of Second Survey

Results of Factor Analysis and Reliability Analysis for the second questionnaire were presented in the table. Those items with a factor loading greater than 0,45 were retained whereas those items with a factor loading lower than 0,45 were deleted again. In the same time, items that were deleted in the first questionnaire as a result of factor analysis were not included in the second questionnaire since it is intended to make a comparison between the results of the first and second questionnaire. In addition to this, the items `uso_5`, `equ_2` were deleted too as a result of the factor analysis run for second questionnaire as they did not have factor loadings greater than 0,45.



**Table 6 Reliability and Factorial validity of the Second Questionnaire (2)**

	F1	F2	F3	F4	F5	F6	F7	F8	F9
Ser_4	,738								
Ser_5	,722								
Ser_6	,687								
Ser_3	,658								
Ser_1	,634								
Uso_3		,650							
Uso_7		,627							
Uso_4		,593							
Uso_6		,561							
Uso_2		,532							
Self_4			,775						
Self_5			,742						
Self_3			,738						
Self_1			,710						
Self_2			,685						
Eff_4				,675					
Eff_3				,656					
Eff_1				,626					
Eff_2				,615					
Eff_5				,591					
Eff_6				,569					
Tru_3					,791				
Tru_4					,789				
Tru_2					,769				
Tru_5					,717				
Tru_1					,711				
Ope_1						,779			
Ope_8						,688			
Ope_5						,628			
Ope_3						,557			
Ope_2						,529			
Qua_3							,726		
Qua_4							,694		
Qua_2							,676		
Qua_5							,603		
Qua_1							,544		
Env_2								,657	
Env_5								,653	
Env_4								,647	
Env_6								,624	
Env_3								,612	
Env_1								,576	
Equ_1									,736
Equ_5									,681
Equ_6									,557
Equ_4									,538
Cronba ch's Alpha	,855	,780	,916	,877	,905	,865	,830	,858	,903

The table 20 demonstrates the sampling adequacy of the second questionnaire indicating that representativeness of the sample is good enough.

<b>Table 20 Sampling Adequacy of the second questionnaire</b>			
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.	Bartlett's Test of Sphericity		
	Approx. Chi-Square	df	Sig.
,949	12038,642	1035	,000

Analysis of descriptive statistics shows that the mean score given by citizens to Functionalites of Services is 5,39; User orientedness of services is 4,97; Self development of citizens is 4,08; Organizational efficiency is 4,60; Trust is 4,96; Openness of public organisations is 4,36; Quality of services is 5,23; Environmental sustainability is 4.39; and Equality is 3,11. The highest mean score was given to Functionalities of services as being 5,39 whereas the lowest mean score went to Equity as being 3,11. The results are illustrated in the table 21 in greater detail.

**Table 21 Descriptive Statistics for the second questionnaire**

	<b>N</b>	<b>Minimum</b>	<b>Maximum</b>	<b>Mean</b>	<b>Std. Deviation</b>
<b>Ser</b>	356	1,00	7,00	5,3994	1,17279
<b>Uso</b>	356	1,00	7,00	4,9719	1,07378
<b>Self</b>	356	1,00	7,00	4,0809	1,62688
<b>Eff</b>	356	1,00	7,00	4,6072	1,27501
<b>Tru</b>	356	1,00	7,00	4,9646	1,33865
<b>Ope</b>	356	1,00	7,00	4,3669	1,35119
<b>Qua</b>	356	1,00	7,00	5,2315	1,03272
<b>Env</b>	356	1,00	7,00	4,3933	1,33919
<b>Equ</b>	356	1,00	7,00	3,1163	1,27656
<b>Valid N (listwise)</b>	356				

Running an analysis of independent samples t test shows that there is a statistically significant difference between the mean scores according to gender for Functionalities of services, Self development of citizens and Openness of public organisations.

In this context, the mean score given by females to the performance of e-government in terms of Functionalities of services ( $M = 5,56$ ;  $SD = 1,12$ ) is significantly higher  $t = 2,48$ ; two-tailed  $p = ,01$  than those of males ( $M = 5,25$ ;  $SD = 1,20$ ).

Similarly, the mean score given by females to the performance of e-government in terms of its contribution to Self development of citizens ( $M = 4,29$ ;  $SD = 1,59$ ) is significantly higher  $t = 2,39$ ; two-tailed  $p = ,01$  than those of males ( $M = 3,88$ ;  $SD = 1,63$ ).

In the same way, the mean score given by females to the performance of e-government with respect to Openness of public organisations ( $M = 4,53$ ;  $SD = 1,30$ ) is significantly higher  $t = 2,19$ ; two-tailed  $p = ,02$  than those of males ( $M = 4,21$ ;  $SD = 1,37$ ). Results are given in the table 22 in a more detailed way.

**Table 22 Differences between the means of gender groups (2)**

Gender		N	Mean	Std. Deviation	t	Sig. (2-tailed)
Ser	<b>Female</b>	169	5,5609	1,12256	2,48	,01
	<b>Male</b>	187	5,2535	1,20077		
Uso	<b>Female</b>	169	5,0189	1,04818	,785	,43
	<b>Male</b>	187	4,9294	1,09748		
Self	<b>Female</b>	169	4,2970	1,59211	2,39	,01
	<b>Male</b>	187	3,8856	1,63745		
Eff	<b>Female</b>	169	4,7406	1,25947	1,88	,06
	<b>Male</b>	187	4,4866	1,28030		
Tru	<b>Female</b>	169	5,0899	1,30893	1,68	,09
	<b>Male</b>	187	4,8513	1,35850		
Ope	<b>Female</b>	169	4,5314	1,30804	2,19	,02
	<b>Male</b>	187	4,2182	1,37563		
Qua	<b>Female</b>	169	5,2402	1,04462	,152	,87
	<b>Male</b>	187	5,2235	1,02458		
Env	<b>Female</b>	169	4,5069	1,34412	1,52	,12
	<b>Male</b>	187	4,2906	1,32995		
Equ	<b>Female</b>	169	3,2308	1,27951	1,61	,10
	<b>Male</b>	187	3,0128	1,26841		

According to the results of one-way ANOVA test it is obvious that there is not a statistically significant difference between the mean scores given by different age groups as the p values are all greater than ,05. A summary of the results of ANOVA tests is provided in the table 23.



**Table 23 Differences between the mean scores of age groups: A Summary of ANOVA tests**

Dependent variable	Age	N	Mean	Std. Dev.	Minimum	Maximum	Sig.
Ser	20 & less	61	5,3073	1,27601	1,00	7,00	,41
	21-30	115	5,4438	1,09036	1,00	7,00	
	31-40	72	5,2500	1,19423	1,00	7,00	
	41-50	66	5,3619	1,39373	1,00	7,00	
	51& more	42	5,9000	1,62816	1,00	7,00	
	Total	356	5,3994	1,17279	1,00	7,00	
Uso	20 & less	61	4,9317	1,23742	1,00	7,00	,67
	21-30	115	4,9448	1,02430	1,00	7,00	
	31-40	72	5,0111	1,01864	1,00	7,00	
	41-50	66	4,9333	1,12665	1,00	7,00	
	51& more	42	5,4167	1,56660	1,00	7,00	
	Total	356	4,9719	1,07378	1,00	7,00	
Self	20 & less	61	4,1854	1,65553	1,00	7,00	,15
	21-30	115	4,0971	1,59175	1,00	7,00	
	31-40	72	3,8361	1,59058	1,00	7,00	
	41-50	66	3,9714	1,77233	1,00	7,00	
	51& more	42	5,1000	1,91738	1,00	7,00	
	Total	356	4,0809	1,62688	1,00	7,00	
Eff	20 & less	61	4,7764	1,34867	1,00	7,00	,37
	21-30	115	4,5698	1,28486	1,00	7,00	
	31-40	72	4,4792	1,04662	1,00	7,00	
	41-50	66	4,7698	1,46674	1,00	7,00	
	51& more	42	5,1667	1,69372	1,00	7,00	
	Total	356	4,6072	1,27501	1,00	7,00	
Tru	20 & less	61	5,1073	1,27444	1,00	7,00	,23
	21-30	115	5,0162	1,22429	1,00	7,00	
	31-40	72	4,6833	1,57435	1,00	7,00	
	41-50	66	4,8667	1,47422	1,00	7,00	
	51& more	42	5,4333	1,61095	1,00	7,00	
	Total	356	4,9646	1,33865	1,00	7,00	
Ope	20 & less	61	4,6341	1,32356	1,00	7,00	,44
	21-30	115	4,4133	1,25436	1,00	7,00	
	31-40	72	3,9889	1,41815	1,00	7,00	
	41-50	66	4,3524	1,54907	1,00	7,00	
	51& more	42	4,9333	1,92842	1,00	7,00	
	Total	356	4,3669	1,35119	1,00	7,00	
Qua	20 & less	61	5,3902	1,05825	1,00	7,00	,65
	21-30	115	5,2352	,96389	1,00	7,00	
	31-40	72	5,0944	1,03786	1,00	7,00	
	41-50	66	5,2762	1,22715	1,00	7,00	
	51& more	42	5,3667	1,66205	1,00	7,00	
	Total	356	5,2315	1,03272	1,00	7,00	
Env	20 & less	61	4,7358	1,33176	1,00	7,00	,24
	21-30	115	4,3849	1,22934	1,00	7,00	
	31-40	72	4,1157	1,45959	1,00	7,00	
	41-50	66	4,3175	1,46809	1,00	7,00	
	51& more	42	5,1667	1,85456	1,00	7,00	
	Total	356	4,3933	1,33919	1,00	7,00	
Equ	20 & less	61	3,1463	1,31683	1,00	7,00	,16
	21-30	115	3,2067	1,19607	1,00	7,00	
	31-40	72	2,8500	1,30945	1,00	7,00	
	41-50	66	2,8286	1,44262	1,00	7,00	
	51& more	42	3,5333	1,81175	1,00	7,00	
	Total	356	3,1163	1,27656	1,00	7,00	

Considering education level, the results of one-way ANOVA test indicate there is a statistically significant difference between different groups. As can be seen in the table 24 the mean scores of Self development of citizens, Organizational efficiency, Trust, Openness of public organizations and Equity are significantly different as the p values are lower than ,05.



**Table 24 Differences between the mean scores of educational groups: A Summary of ANOVA tests**

Dependent variable	Education	N	Mean	Std. Dev.	Minimum	Maximum	Sig.
Ser	High School & lower	103	4,7816	1,32424	1,00	7,00	,374
	Undergraduate	165	4,5325	1,31360	1,00	7,00	
	Postgraduate	88	3,8049	1,23544	1,00	7,00	
	Total	356	4,3933	1,33919	1,00	7,00	
Uso	High School & lower	103	5,5138	1,17763	1,00	7,00	,067
	Undergraduate	165	5,4276	1,17705	1,00	7,00	
	Postgraduate	88	5,2568	1,15945	1,00	7,00	
	Total	356	5,3994	1,17279	1,00	7,00	
Self	High School & lower	103	5,2586	1,12516	1,00	7,00	,000
	Undergraduate	165	4,9429	1,11285	1,00	7,00	
	Postgraduate	88	4,8523	,91047	1,00	7,00	
	Total	356	4,9719	1,07378	1,00	7,00	
Eff	High School & lower	103	4,5655	1,75804	1,00	7,00	,000
	Undergraduate	165	4,2514	1,51282	1,00	7,00	
	Postgraduate	88	3,3545	1,58636	1,00	7,00	
	Total	356	4,0809	1,62688	1,00	7,00	
Tru	High School & lower	103	5,0287	1,24061	1,00	7,00	,001
	Undergraduate	165	4,6579	1,29163	1,00	7,00	
	Postgraduate	88	4,2083	1,15394	1,00	7,00	
	Total	356	4,6072	1,27501	1,00	7,00	
Ope	High School & lower	103	5,2586	1,31550	1,00	7,00	,000
	Undergraduate	165	5,0743	1,26135	1,00	7,00	
	Postgraduate	88	4,5091	1,43516	1,00	7,00	
	Total	356	4,9646	1,33865	1,00	7,00	
Qua	High School & lower	103	4,7172	1,48113	1,00	7,00	,071
	Undergraduate	165	4,5390	1,24835	1,00	7,00	
	Postgraduate	88	3,7250	1,30333	1,00	7,00	
	Total	356	4,3669	1,35119	1,00	7,00	
Env	High School & lower	103	5,4586	1,16258	1,00	7,00	,000
	Undergraduate	165	5,2410	,99858	1,00	7,00	
	Postgraduate	88	5,0591	1,00306	1,00	7,00	
	Total	356	5,2315	1,03272	1,00	7,00	
Equ	High School & lower	103	3,4655	1,32049	1,00	7,00	,000
	Undergraduate	165	3,2429	1,22082	1,00	7,00	
	Postgraduate	88	2,5841	1,23297	1,00	7,00	
	Total	356	3,1163	1,27656	1,00	7,00	

With respect to the performance of e-government in terms of its contribution to Self development of citizens, the mean scores of people with an education level of post graduate are significantly different from the mean scores of people with an education level of high school & lower and undergraduate having p values of respectively,000 and ,000 as shown in the table 25.

**Table 25 Differences between the means of educational groups for Self development of citizens**

<b>Dependent variable: Self development of citizens (Tukey HSD)</b>		<b>Post Hoc Tests</b>		
<b>(I) Education level</b>	<b>(J) Education level</b>	Mean Difference (I-J)	Std. Error	Sig.
<b>Postgraduate</b>	High School & lower	1,21097	,26604	,000
	Undergraduate	-,89688	,19975	,000

In the same way, when we look at the performance of e-government in terms of its contribution to Organizational efficiency, the mean scores of people with an education level of post graduate are significantly different from the mean scores of people with an education level of high school & lower and undergraduate having p values of respectively ,000 and ,014 as illustrated in the table 26.

**Table 26 Differences between the means of educational groups for Organizational efficiency**

<b>Dependent variable: Organizational efficiency (Tukey HSD)</b>		<b>Post Hoc Tests</b>		
<b>(I) Education level</b>	<b>(J) Education level</b>	Mean Difference (I-J)	Std. Error	Sig.
<b>Postgraduate</b>	High School & lower	-,82040	,21155	,000
	Undergraduate	-,44960	,15883	,014

When it comes to the performance of e-government in terms of its Trust-related issues, again, the mean scores of people with an education level of post graduate are significantly

different from the mean scores of people with an education level of high school & lower and undergraduate having p values of respectively ,002 and ,002 as demonstrated in the table 27

<b>Table 27 Differences between the means of educational groups for Trust</b>				
<b>Dependent variable: Trust (Tukey HSD)</b>		<b>Post Hoc Tests</b>		
<b>(I) Education level</b>	<b>(J) Education level</b>	Mean Difference (I-J)	Std. Error	Sig.
<b>Postgraduate</b>	High School & lower	-,74953	,22239	,002
	Undergraduate	-,56519	,16698	,002

According to the results for the performance of e-government in terms of its contribution to Openness of public organisations, the mean scores of people with an education level of post graduate are significantly different from the mean scores of people with an education level of high school & lower and undergraduate, having p values of respectively ,000 and ,000. Table 28 provides these results.

<b>Table 28 Differences between the means of educational groups for Openness of public organisations</b>				
<b>Dependent variable: Openness of public organisations (Tukey HSD)</b>		<b>Post Hoc Tests</b>		
<b>(I) Education level</b>	<b>(J) Education level</b>	Mean Difference (I-J)	Std. Error	Sig.
<b>Postgraduate</b>	High School & lower	-,99224	,22023	,000
	Undergraduate	-,81405	,16535	,000

Regarding the performance of e-government in terms of its contribution to Environmental sustainability, as shown in the table 29, the mean scores of people with an education level of post graduate are significantly different from the mean scores of people with an education level of high school & lower and undergraduate, having p values of respectively ,000 and ,000.

**Table 29 Differences between the means of educational groups for Environmental sustainability**

Dependent variable: Environmental sustainability (Tukey HSD)		Post Hoc Tests		
(I) Education level	(J) Education level	Mean Difference (I-J)	Std. Error	Sig.
Postgraduate	High School & lower	-,97668	,21928	,000
	Undergraduate	-,72762	,16464	,000

Likewise, as to the performance of e-government in terms of its contribution to Equality, as illustrated in the table 30, the mean scores of people with an education level of post graduate are significantly different from the mean scores of people with an education level of high school & lower and undergraduate, having p values of respectively ,000 and ,000.

**Table 30 Differences between the means of educational groups for Equality**

Dependent variable: Equality (Tukey HSD)		Post Hoc Tests		
(I) Education level	(J) Education level	Mean Difference (I-J)	Std. Error	Sig.
Postgraduate	High School & lower	-,88143	,20979	,000
	Undergraduate	-,65877	,15752	,000

## 5 DISCUSSION AND CONCLUSION

### 5.1 Discussion

It can be inferred from an overview of the results of the two questionnaires that Quality of services, Functionalities of services, User orientedness of services, Organizational efficiency, Openness of public organisations, Self development of citizens, Equity, Trust and Environmental sustainability are critical factors for measuring the PV of e-government in Turkey. Also, people highly value these nine critical factors and e-government in Turkey seems to create public value in terms of Quality of services, Functionalities of services, Organizational efficiency, Self development of citizens, Trust, Environmental sustainability, User orientedness of services, and Openness of public organisations except for Equity.

Therefore, we can answer our research question 1:

1. *What are the critical factors for measuring the Public Value of e-government in Turkey?*

According to the mean scores given by citizens to value of nine factors, namely; Quality of services, Functionalities of services, Organizational efficiency, Self development of citizens, Equity, Trust, Environmental sustainability, User orientedness of services, and Openness of public organisations, it is clear that these nine factors are critical for measuring the PV of e-government and people highly value these factors as the mean scores are all higher than 4.

In the same way, the mean scores given by citizens to actual performance of e-government for eight factors are higher than 4 indicating that e-government tends to create public value

for these eight factors whereas the mean score for Equity is lower than 4 indicating that e-government tends not to create public value for this certain factor.

It would not be mistaken to argue that if the mean score given by citizens to actual performance of e-government is greater than 4 for a certain critical factor then it can be claimed that e-government creates public value for this individual factor.

We can also answer our research questions 2, 3, 4, and 5 accordingly.

*2. What critical factors create public value through Delivery of Public Services in Turkey?*

Analysis of empirical findings showed that Quality of services, User orientedness of services and Functionalities of services tend to create public value through Delivery of Public Services.

*3. What critical factors create public value through Effectiveness of Public Organizations in Turkey?*

Similarly, Organizational efficiency and Openness of public organisations tend to create public value through Effectiveness of Public Organizations.

*4. What critical factors create public value through Achievement of Social Outcomes in Turkey?*

Finally, Self development of citizens, Trust and Environmental sustainability tend to create public value through Achievement of Social Outcomes while Equity tends not to create public value.

*5. Are there any differences between the means regarding perceived public value of e-government according to groups by gender, age and education level?*

Results of independent samples t test shows that there is a statistically significant difference between the mean scores regarding perceived public value of Functionalities of



services, Self development of citizens and Openness of public organisations according to gender.

As a result of one-way ANOVA test it is obvious that there is not a statistically significant difference between the means regarding perceived public value of e-government according to different age groups.

Considering education level, the results of one-way ANOVA test indicate that there is a statistically significant difference between the means regarding the perceived public value of Self development of citizens, Organizational efficiency, Trust, Openness of public organisations and Equity according to different groups.

As for Quality of services, the mean value score was 6,1180 in the first questionnaire while the mean performance score was 5,2315 in the second questionnaire. Since the mean performance score for Quality of services was higher than 4 it can be claimed that e-government in Turkey tends to create public value through this particular factor.

With regard to Functionalities of services, the mean value score was 5,9005 in the first questionnaire while the mean performance score was 5,3994 in the second questionnaire. Since the mean performance score for Functionalities of services was higher than 4 it can be claimed that e-government in Turkey tends to create public value through this particular factor.

Considering Organizational efficiency, the mean value score was 6,2791 in the first questionnaire while the mean performance score was 4,6072 in the second questionnaire. Since the mean performance score for Organizational efficiency was higher than 4 it can be claimed that e-government in Turkey tends to create public value through this particular factor.

Speaking of Self development of citizens, the mean value score was 6,1009 in the first questionnaire while the mean performance score was 4,0809 in the second questionnaire. Since the mean performance score for Self development of citizens was higher than 4 it

can be claimed that e-government in Turkey tends to create public value through this particular factor.

With respect to Trust, the mean value score was 6,5332 in the first questionnaire while the mean performance score was 4,9646 in the second questionnaire. Since the mean performance score for Trust was higher than 4 it can be claimed that e-government in Turkey tends to create public value through this particular factor.

In the matter of Environmental sustainability, the mean value score was 6,3045 in the first questionnaire while the mean performance score was 4,3933 in the second questionnaire. Since the mean performance score for Environmental sustainability was higher than 4 it can be claimed that e-government in Turkey tends to create public value through this particular factor.

When it comes to User orientedness of services, the mean value score was 5,7792 in the first questionnaire while the mean performance score was 4,9719 in the second questionnaire. Since the mean performance score for User orientedness of services was higher than 4 it can be claimed that e-government in Turkey tends to create public value through this particular factor.

Regarding Openness of public organisations, the mean value score was 6,0639 in the first questionnaire while the mean performance score was 4,3669 in the second questionnaire. Since the mean performance score for Openness of public organisations was higher than 4 it can be claimed that e-government in Turkey tends to create public value through this particular factor.

However, in terms of Equity the mean value score was 5,5892 in the first questionnaire while the mean performance score was 3,1163 in the second questionnaire. Since the mean performance score for Equity was lower than 4 it can be claimed that e-government in Turkey tends not to create public value through this particular factor. The reason for this may be lack of provision of e-government content in local languages. Moreover, there is no training opportunities provided by government for people living in rural areas. Last but not least, there is a lack of adequate and appropriate content for ethnical minorities on

government web sites. All these missing criterias have an impact on poor performance of e-government in creating public value through equity.

The table 31 presents a comparison between the descriptive statistics of the first questionnaire and the second one.

**Table 31 Comparison of Descriptive Statistics for the two questionnaires**

	<b>Factors</b>	<b>N</b>	<b>Minimum</b>	<b>Maximum</b>	<b>Mean</b>	<b>Std. Deviation</b>
<b>First questionnaire</b>	<b>Ser</b>	557	1,00	7,00	5,9005	1,16085
<b>Second questionnaire</b>	<b>Ser</b>	356	1,00	7,00	5,3994	1,17279
<b>First questionnaire</b>	<b>Uso</b>	557	1,00	7,00	5,7792	1,04247
<b>Second questionnaire</b>	<b>Uso</b>	356	1,00	7,00	4,9719	1,07378
<b>First questionnaire</b>	<b>Self</b>	557	1,00	7,00	6,1009	1,16343
<b>Second questionnaire</b>	<b>Self</b>	356	1,00	7,00	4,0809	1,62688
<b>First questionnaire</b>	<b>Eff</b>	550	1,00	7,00	6,2791	,95626
<b>Second questionnaire</b>	<b>Eff</b>	356	1,00	7,00	4,6072	1,27501
<b>First questionnaire</b>	<b>Tru</b>	548	1,00	7,00	6,5332	,92584
<b>Second questionnaire</b>	<b>Tru</b>	356	1,00	7,00	4,9646	1,33865
<b>First questionnaire</b>	<b>Ope</b>	551	1,00	7,00	6,0639	1,00464
<b>Second questionnaire</b>	<b>Ope</b>	356	1,00	7,00	4,3669	1,35119
<b>First questionnaire</b>	<b>Qua</b>	556	1,00	7,00	6,1180	1,03942
<b>Second questionnaire</b>	<b>Qua</b>	356	1,00	7,00	5,2315	1,03272
<b>First questionnaire</b>	<b>Env</b>	538	1,00	7,00	6,3045	,95564
<b>Second questionnaire</b>	<b>Env</b>	356	1,00	7,00	4,3933	1,33919
<b>First questionnaire</b>	<b>Equ</b>	553	1,00	7,00	5,5892	1,19656
<b>Second questionnaire</b>	<b>Equ</b>	356	1,00	7,00	3,1163	1,27656
<b>Valid N (listwise)</b>					<b>513</b>	
<b>First questionnaire</b>						
<b>Valid N (listwise)</b>					<b>356</b>	
<b>Second questionnaire</b>						

## 5.2 Conclusion

We tried to assess the impacts of e-government in Turkey from the Public Value perspective since the previous literature has stressed that there is a strong need for obtaining empirical evidence on the impacts and outcomes of e-government. To this end, we collected empirical data through survey questionnaires and then tried to measure the Public Value of e-government in Turkey.

Following the introductory chapter consisting of research background, research motivation, research objectives and organisation of the study, the second chapter began based on a literature review outlining some general concepts and definitions related to e-government and impact assessment, and the current situation as regards to e-government in the world and e-government in Turkey in addition to current literature on impact assessment, e-government evaluation and public value assessment of e-government. The next chapter provided information on the methodology of the study. We explained what type of research approach was preferred, what the research questions are, which data gathering method was employed and what the research design is. The fourth chapter in the study focused on analyzing and interpreting the empirical findings. In this section we first analyzed the findings of the first questionnaires illustrating what are the critical factors in relation to e-government Public Value assessment in Turkey. Then we analyzed the findings of the second questionnaire which represented descriptive statistics including demographic information of the participants, the means, the frequencies, the minimum and the maximum values and the standard deviations were given as well as the interpretation of the analysis. We also looked at what creates public value for citizens through Delivery of Public Services, Effectiveness of Public Organizations and Achievement of Social Outcomes.

As a result of the study it was understood that nearly half of the people in Turkey tend not to know much about e-government and its gainings. This conclusion was made based on the answers from citizens. Most of the citizens gave a score of ‘4’ for almost all questions in the second questionnaire which corresponds to ‘I have no idea about this’. This result can push us to make a conclusion that nearly half of the people seem not to know very well about e-government.

Looking at the results of second questionnaire, it may be possible to make an inference that Turkish government needs to pay further attention on increasing the public value through Delivery of Public Services by improving Functionalities of services, User orientedness of services and Quality of services.

In order to increase the public value through Effectiveness of Public Organizations government needs to pay further attention on improving Organizational efficiency and Openness of public organisations.

With respect to increasing public value through Achievement of Social Outcomes government may need to pay more attention on improving Self development of citizens, Trust, Environmental sustainability and particularly Equity.

Another outstanding result is that government seems to fail in creating public value through Achievement of Social Outcomes due to poor performance of e-government regarding Equity. It is obvious from the results that this area requires particular attention.

In the literature Karunasena (2012) argued that Quality of services, Functionalities of services, User orientedness of services, Organizational efficiency, Openness of public organisations, Self development of citizens, Equity, Trust, Environmental sustainability are critical factors for measuring the PV of e-government in Sri Lanka. Empirical findings showed that these nine factors are critical factors for measuring the PV of e-government in Turkey as well.

This study provides several contributions to both scientific literature and practical life. With respect to scientific side, this study contributed to existing literature by providing empirical evidence on assessing the impact of e-government from a Public Value perspective. Another contribution might be that we tested and validated Karunasena's framework of Public Value of e-government. When it comes to practical side, our study provides important implications to public authorities. The results of the study can help public administrators see the strengths and the weaknesses of current e-government initiatives in terms of Delivery of Public Services, Effectiveness of Public Organizations

and Achievement of Social Outcomes. Also, such an evidence helps them eliminate problem areas in terms of Public Value creation. Thus, based on our results, public policy makers can make evidence-based decisions regarding e-government investments which can lead to better results and impacts and effective resource allocation as well.



## REFERENCES

- Alford, J. and Hughes, O. (2007) Public Value Pragmatism as the Next Phase of Public Management, *American Review of Public Administration*, 38(2)
- Alm, A. L. (1988) NEPA: Past, Present and Future, 12 March, 2015, 2:18 AM, Retrieved from the World Wide Web: <http://www2.epa.gov/aboutepa/nepa-past-present-and-future>
- Babbie, E. (2013), *The Practice of Social Research*, (13th ed.), Belmont, CA: Wadsworth Cengage Learning
- Bai, W., (2013) A Public Value Based Framework for Evaluating the Performance of e-Government in China, *iBusiness*, Vol. 5 No. 3B.
- Balci, A., Medeni, T.D., Nohutçu, A. (2013) Turkish Case of e-Government Strategy Development and Policy-Formulation Process: Recent Developments on Evaluations of e-Government Rankings, *International Journal of Technology Diffusion*, 4(4).
- Becker, H. A. (2001), Social impact assessment. *European Journal of Operational Research*, 128 (2)
- Becker, H.A., (1997), *Social Impact Assessment*, UCL Press, London.
- Bhatnagar, S. C. and Singh N. (2010) 'Assessing the Impact of E-Government : A study of E-Government Projects in India', *Information Technologies and International Development*, Vol. 6, Issue. 2.
- Bhattacharjee, A. (2012), *Social Science Research: Principles, Methods, and Practices, Textbooks Collection. Book 3*. Retrieved Jun 13, 2015 from the World Wide Web: [http://scholarcommons.usf.edu/oa\\_textbooks/3](http://scholarcommons.usf.edu/oa_textbooks/3)
- Bird, K. (2002), Impact Assessment: An overview, ODI, Retrieved 29.06.2015, 7:33 AM, from the world wide web: <http://www.odi.org/sites/odi.org.uk/files/odi-assets/publications-opinion-files/1780.pdf>
- Bizer, K., Lechner, S. And Führ M. (2008) Improving the Integrated European Impact Assessment?, Executive Summary of the International Workshop 15th-17th September 2008 in Berlin.
- Bonina, C. M. and Cordella, A. (2009) Public sector reforms and the notion of 'public value': implications for government deployment. In: 15th Americas Conference on Information Systems, 6th-9th August 2009, San Francisco, California. (Unpublished),

Retrieved May 28 2015, 4:28 AM, from the World Wide Web:  
[http://eprints.lse.ac.uk/43672/1/Public%20sector%20reforms%20and%20the%20notion%20of%20'public%20value'\(lsero\).pdf](http://eprints.lse.ac.uk/43672/1/Public%20sector%20reforms%20and%20the%20notion%20of%20'public%20value'(lsero).pdf)

Booz., A. H. (2004) An introduction to the value measuring methodology, Retrieved July 10, 2015 from the World Wide Web:  
<https://www.fgdc.gov/policyandplanning/50states/introduction-to-vmm-bah-Oct-2004.pdf>

Burdge, R. and Vanclay, F. 1996. Social Impact Assessment: A Contribution to the State of the Art Series. *Impact Assessment*, 14 (1)

Caldwell, L.K. (1998) Implementing Policy Through Procedure: Impact Assessment and The *National Environmental Policy Act (NEPA)*. In A.L. Porter and J.J. Fittipaldi (eds.), *Environmental Methods Review: Retooling Impact Assessment for the New Century*, The Press Club, North Dakota, USA

Calista, D.J. and Melitski, J. (2007) e-Government and e-Governance: Converging Constructs of Public Sector Information and Communications Technologies, *Public Administration Quarterly*, Vol 31 Iss ½

Castelnovo, W. (2010). Is there an eGovernment Paradox? In D. O'Donnell (Ed.), 10th European eGovernment Conference on eGovernment, Limerick, Ireland.

Castelnovo, W. and Simonetta, M. (2008) A Public Value Evaluation of e-Government Policies, *The Electronic Journal Information Systems Evaluation*, Vol: 11 Is: 2

Centeno, C., Van Bavel, R., and Burgelman J.C. (2005) "A Prospective View of e-Government in the European Union" *The Electronic Journal of e-Government* Vol 3, Iss 2

Cole, M., and Parston, G. (2006), *Unlocking public value: New model for achieving high performance in public service organization*. New Jersey: John Wiley & Sons, Inc.

Cordella, A., and Bonina, C. M. (2012). A public value perspective for ICT enabled public sector reforms: A theoretical reflection, *Government Information Quarterly*, Vol: 29

Drucker, P.(2001), The Next Society, *The Economist*, November 1st

eGovernment Factsheets (2014), eGovernment in Turkey, European Commission, Edition 11.0

Esteves, J. and Joseph, R.C. (2008) A Comprehensive Framework for the Assessment of eGovernment Projects, *Government Information Quarterly*, Vol 25, Iss 2

European Commission (2009), Impact Assessment Guidelines, 15 January 2009



- European Commission (2014) e-Government Factsheets, 'eGovernment in Turkey', Edition 11.0, May 2014. Retrieved October 5, 2014 from the World Wide Web: <https://joinup.ec.europa.eu/sites/default/files/74/7c/d2/eGov%20in%20TR%20May%202014%20v.11.0.pdf>
- European Union (2014) EU eGovernment Report 2014 - Country Factsheets E-Government, Turkey, Retrieved July 9, 2015 from the World Wide Web: [http://ec.europa.eu/information\\_society/newsroom/cf/dae/document.cfm?doc\\_id=5573](http://ec.europa.eu/information_society/newsroom/cf/dae/document.cfm?doc_id=5573)
- Fernández-i-Marín, Xavier (2011) "The Impact of e-Government Promotion in Europe: Internet Dependence and Critical Mass," *Policy & Internet*, Vol. 3: Iss. 4
- Gertler, P. J., Martinez, S., Premand, P., Rawlings, L. B., Vermeersch, C. M. J., (2011), *Impact Evaluation in Practice*, World Bank, Retrieved May 24, 2015 from the World Wide Web: [http://siteresources.worldbank.org/EXT/HDOFFICE/Resources/5485726-1295455628620/Impact\\_Evaluation\\_in\\_Practice.pdf](http://siteresources.worldbank.org/EXT/HDOFFICE/Resources/5485726-1295455628620/Impact_Evaluation_in_Practice.pdf)
- Gottweis, H. (2006) *Rhetoric in Policy Making: Between Logos, Ethos, And Pathos*, In F. Fischer, G.J. Miller and M.S. Sidney (eds.), *Handbook of Public Policy Analysis: Theory, Politics, and Methods*, CRC Press, New York, USA
- Grimsley, M., Meehan, A., and Gupta, K.S. (2006), Evaluative design of e-government projects: a public value perspective. In: Proceedings of the Twelfth Americas Conference on Information Systems, 4-6 August 2006, Acapulco, Mexico.
- Harrison, T., Pardo, T., Cresswell, A. and Cook, M. (2011). Delivering Public Value Through Open Government, Center for Technology in Government, University at Albany
- Harrison, TM., Guerrero S., Burke GB., Cook, M., Cresswell, A., Helbig, N., Hrdinovac J., and Pardo, T., (2012) Open government and e-government - Democratic challenges from a public value perspective, *Information Polity 17*
- Heeks, R.(2006a), *Implementing and Managing e-Government*, Sage Publications, London, UK
- Heeks, R. (2006b). Benchmarking e-government: Improving the national and international measurement, evaluation and comparison of e-government. Manchester, UK. Institute for Development Policy and Management Working Paper No: 18, Retrieved May 14, 2015 from the World Wide Web:<http://unpan1.un.org/intradoc/groups/public/documents/apcity/unpan032114.pdf>
- Heeks, R., Bailur, S. ( 2007), ‘Analyzing e-Government Research: Perspectives, Philosophies, Theories, Methods, And Practice’, *Government Information Quarterly*, Vol:24,

- Heeks, R. & Molla, A. (2009). *Compendium on Impact Assessment of ICT-for-Development Projects*. Development Informatics Working Paper Series, No.36/2009. Manchester: Institute for Development Policy and Management
- Herbert, A. and Shepherd, A. (2000) Spin-off Study: Impact assessment for poverty reduction, School of Public Policy the University of Birmingham, April, Retrieved 29.06.2015, 6:11 AM, from the world wide web:  
<http://www.odi.org/sites/odi.org.uk/files/odi-assets/publications-opinion-files/1782.pdf>
- Hsieh, P. H., Huang, C. S., and Yen, David C. (2013), Assessing Web Services of Emerging Economies in an Eastern Country - Taiwan's e-Government, *Government Information Quarterly*, Vol 30 Iss 3
- IAIA, (1999) Principles Of Environmental Impact Assessment Best Practice, 1999
- Interorganizational Committee (1994), Guidelines and principles for social impact assessment, *Impact Assessment*, 12(2)
- ITU (2010), Monitoring the WSIS Targets: A mid-term Review, World Telecommunication ICT Development Report, Geneva, Switzerland
- ITU (2014), Measuring the Information Society Report, Retrieved May 04, 2015 from the World Wide Web:  
<http://www.itu.int/en/ITUUD/Statistics/Pages/publications/mis2014.aspx>
- Jacob, K., Hertin, J., Hjerp, P., Radaelli, C., Meuwese, A., Wolf, O., Pacchi, C., Rennings, K. (2008) Improving the Practice of Impact Assessment, EVIA (Evaluating Integrated Impact Assessments), Project No: 028889, EC Sixth Framework Programme, European Commission, Brussels.
- Karunasena, K. and Deng, H. (2009) A conceptual Framework for Evaluating the Public Value of e-government: A Case Study from Sri Lanka, *ACIS 2009 Proceedings*, Paper 8.
- Karunasena, K. and Deng, H. (2010) Exploring the Public Value of e-Government: An Empirical study from Sri Lanka. In *eTrust: Implications for the Individual Enterprises and Society*, 23rd Bled eConference, Bled Slovenia
- Karunasena, K., & Deng, H. (2012). Critical factors for evaluating the public value of e-government in Sri Lanka, *Government Information Quarterly*, 29, 76–84.
- Karunasena, K., (2012), An Investigation of the Public Value of e-Government in Sri Lanka, PhD Dissertation, Retrieved 13.03.2015, 9:27 AM, from the world wide web:  
[https://researchbank.rmit.edu.au/eserv/rmit:160100/Thanthri\\_Waththage.pdf](https://researchbank.rmit.edu.au/eserv/rmit:160100/Thanthri_Waththage.pdf)
- Kearns, I., (2004), Public Value and E-Government, Institute for Public Policy Research (ippr). Retrieved February 11, 2015 from the World Wide Web:

[http://www.ippr.org/files/images/media/files/publication/2011/05/public\\_value\\_egovernment\\_1522.pdf?noredirect=1](http://www.ippr.org/files/images/media/files/publication/2011/05/public_value_egovernment_1522.pdf?noredirect=1)

- Kelly, G., Mulgan, G., Muers, S. (2002), *Creating Public Value: An Analytical Framework for Public Service Reform*, Discussion paper prepared by the Cabinet Office Strategy Unit, United Kingdom.
- Kroes, N. (2012). *The digital agenda two years on: Is Europe well-placed?* European Commission Responsible for the Digital Agenda. Brussels, June 21st 2012. Retrieved March 13, 2015 from the World Wide Web: [http://europa.eu/rapid/press-release\\_SPEECH-12-83\\_en.htm?locale=en](http://europa.eu/rapid/press-release_SPEECH-12-83_en.htm?locale=en)
- Kunstelj, M., and Vintar, M. (2004), *Evaluating the progress of e-government development: A critical analysis*. *Information Polity*, 9., Retrieved 29.05.2015, 15:27 AM, from the world wide web [http://www2.fu.uni-lj.si/iu/Clanki/Evaluating\\_the\\_Progress\\_of\\_eGovernment\\_Development\\_A\\_Critical\\_Analysis.pdf](http://www2.fu.uni-lj.si/iu/Clanki/Evaluating_the_Progress_of_eGovernment_Development_A_Critical_Analysis.pdf)
- Lakka, S., Stamati, T., Michalakelis, C. and Martakos, D. (2013), *What drives e-Government growth? An econometric analysis on the impacting factors*. *International Journal of Electronic Governance*, Vol:6, No:1
- Malkia, M., Anttiroiko, A. and Savolainen, R. (2004), *'eTransformation in Governance: New Directions in Government and Politics'*, Idea Group Publishing, Hershey PA, USA
- Maro, P., (2010) *Views of the European Environmental Bureau on the Commission's Impact Assessment Procedure – With a Focus on Environment*, In Bizer, K., Lechner, S. And Führ M. (eds.), *The European Impact Assessment and the Environment*, Chapter 3
- Melo, Cristóvão de, (2007), *The Concept Of Public Value as A Strategic Framework for Brazilian Public Organizations. The Case Of The People Management Directory Of The President's Office In Brazil*. The George Washington University School of Business and Public Management, Retrieved 15.04.2015, 2:15 AM, from the world wide web: <http://www.gwu.edu/~ibi/minerva/Spring2007/Cristovao.de.Melo.pdf>
- Ministry of Development (2013a), *The Renewal Project of Information Society Strategy*, 25 June
- Ministry of Development (2013b), *Information Strategy and Action Plan 2006-2010, Final Evaluation Report*, Information Society Department
- Ministry of Development (2015a), *2015-2018 Information Strategy and Action Plan*, Information Society Department, March 2015
- Ministry of Development (2015b) *Public Sector ICT Investments*, April 2015. Retrieved Jun 24, 2015 from the World Wide Web:

[http://www.bilgitoplumu.gov.tr/wpcontent/uploads/2015/04/2015\\_Kamu\\_BIT\\_Yatirimlari\\_Raporu.pdf](http://www.bilgitoplumu.gov.tr/wpcontent/uploads/2015/04/2015_Kamu_BIT_Yatirimlari_Raporu.pdf)

- Moore, M. (1995) *Creating Public Value: strategic management in government*, Cambridge, Mass.: Harvard University Press
- Nenty, H.J. (2009), Writing a quantitative research thesis, *International Journal of Educational Sciences*, Vol: 1, No: 1
- OECD (2001), “Improving Policy Instruments through Impact Assessment”, SIGMA Papers, No. 31, OECD Publishing. Retrieved 13.04.2015, 3:11 AM, from the world wide web: <http://dx.doi.org/10.1787/5kml60vnhc6h-en>
- OECD (2003), “The e-Government Imperative”, *OECD Journal on Budgeting*, Vol:3, No:1
- OECD (2006), Cost-Benefit Analysis And The Environment: Recent Developments, Retrieved February 21, 2015 from the World Wide Web: [http://www.keepeek.com/Digital-Asset-Management/oecd/environment/cost-benefit-analysis-and-the-environment\\_9789264010055-en#page1](http://www.keepeek.com/Digital-Asset-Management/oecd/environment/cost-benefit-analysis-and-the-environment_9789264010055-en#page1)
- OECD. (2010), Guidance on Sustainability Impact Assessment, Paris: OECD, Retrieved 23.04.2015 from the World Wide Web: <http://www.oecd.org/greengrowth/48305527.pdf>
- Osman, İ.H., Anouze, A.L., Irani, Z., Al-Ayoubi, B., Lee, H., Balci, A., Medeni, T.D, Weerakkody, V, (2014) COBRA Framework to Evaluate e-Government Services: A Citizen-Centric Perspective, *Government Information Quarterly*, 31.
- Röthig, P., (2007), WiBe 4.0 Methodology, Recommendations on Economic Efficiency Assessments in the German Federal Administration in Particular with Regard to the Use of Information, Berlin, Germany, Retrieved Jun 21, 2015 from the World Wide Web: [http://wibe-tco.com/wp-content/uploads/2013/12/WiBe41\\_TCBO-EN-Recommendations-on-Economic-Efficiency-Assessments.pdf](http://wibe-tco.com/wp-content/uploads/2013/12/WiBe41_TCBO-EN-Recommendations-on-Economic-Efficiency-Assessments.pdf)
- Röthig, P., (2010), The WiBe Framework (Germany), Overview of an European Measurement Approach to eGovernment Efficiency Assessment and User Satisfaction, Paper presented to Emilia-Romagna Regional Government, Retrieved Jun 21, 2015 from the World Wide Web: [http://wibetco.com/wpcontent/uploads/2013/06/eGovernment\\_MeasurementApproach\\_WiBe\\_Germany2.pdf](http://wibetco.com/wpcontent/uploads/2013/06/eGovernment_MeasurementApproach_WiBe_Germany2.pdf)
- Sampson, James P. Jr. (2012), A Guide to Quantitative and Qualitative Dissertation Research, *Educational Psychology and Learning Systems Faculty Publications*. Paper 1. Retrieved Jun 11, 2015 from the World Wide Web: [http://diginole.lib.fsu.edu/edpsy\\_faculty\\_publications/1/](http://diginole.lib.fsu.edu/edpsy_faculty_publications/1/)
- Savoldelli, A., Misuraca, G. and Codagnone, C. (2013a), Measuring the Public Value of eGovernment: The eGep2.0 Model, *Electronic Journal of eGovernment*, Vol 11 Iss 1

- Savoldelli, A., Codagnone, C., and Misuraca, G. (2013b), Assessing the Impacts of ICT-enabled Services in the Public Sector: A Participatory Evaluation Process to Overcome the eGovernment Paradox, Paper presented at the EIBURS – TAIPS, University of Urbino
- Savoldelli, A., Codagnone, C. and Misuraca, G. (2014) Understanding the e-government paradox: Learning from literature and practice on barriers to adoption, *Government Information Quarterly*, Vol: 31, Iss: 1
- Schelin, S. H. (2003), E-Government: An overview, Idea Group Publishing, Hershey, USA.
- Scott, M. DeLone, W. and Golden, W., (2011) "It Quality And E-government Net Benefits: A Citizen Perspective". *ECIS 2011 Proceedings, Paper 87*.
- Smith, L.G. (2014), *Impact Assessment and Sustainable Resource Management*, Routledge, New York, USA
- Stanimirovic, D., Vintar, M. (2013), A critical insight into the evaluation of e-government policies: Reflections on the concept of public interest. *International Journal of Advances in Life Sciences* 5 (1 and 2).
- SUSTRA, (2003) ‘Sustainability Impact Assessment’, Policy Brief Paper, Trade Societies and Sustainable Development SUSTRA Network, based on the conclusions of the SUSTRA seminar on ‘Sustainability Impact Assessment, Centre for Philosophy of Law, Université catholique de Louvain, Louvain-la-Neuve, Belgium, 26-27 March, Retrieved April 18, 2015 from the World Wide Web : [http://www.agromontpellier.fr/sustra/publications/policy\\_briefs/policy-brief-sia-eng.pdf](http://www.agromontpellier.fr/sustra/publications/policy_briefs/policy-brief-sia-eng.pdf)
- Thowfeek, M. H., and Arulanantham, A. (2013), An Investigation of the Perception and Fulfillment of E-government Services, *Paper presented at the 3rd International Symposium of South Eastern University of Sri Lanka*, Oluvil, Sri Lanka.
- Turkstat (2014) Information and Communication Technology (ICT) Usage Survey on Households and Individuals, August 22. Retrieved April 18, 2015 from the World Wide Web: <http://tuik.gov.tr/Start.do>
- Turnley, J.G. (2002), Social, Cultural, Economic Impact Assessments: A Literature Review. Prepared for the Office of Emergency and Remedial Response, US Environmental Protection Agency. Retrieved April 13, 2015 from the World Wide Web: <http://www.epa.gov/superfund/policy/pdfs/SILitRevFinal.pdf>
- UN E-Government Surveys (2014), e-Government For the Future We Want, United Nations, New York
- United Nations (2003), UN Global eGovernment Survey, New York.

United Nations (2014), e-government Survey, e-government for the Future We Want, Retrieved May 23, 2015 from the World Wide Web: <http://unpan3.un.org/egovkb/en-us/Reports/UN-E-Government-Survey-2014>

Wang, Yi-S., and Liao, Yi-W. (2008) Assessing eGovernment Systems Success: A Validation of the DeLone and McLean model of Information Systems Success, *Government Information Quarterly*, Vol 25 Iss 4

White, S. (2010), Impact Assessment – Experience from the European Commission, In Bizer, K., Lechner, S. And Führ M. (eds.), *The European Impact Assessment and the Environment*, Chapter 2

Yildiz, M. (2007), E-government research: Reviewing the literature, limitations, and ways forward, *Government Information Quarterly*, Vol:24, Issue:3

