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Generations X, Y, Z and their Perception of E-Government Services: Case of Turkey

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ABSTRACT

Technological developments have transformed the forms of communication that can have a major impact on the social structure. All these technological developments cause fundamental changes in the way of life of the individuals and there are serious changes in both the ways of interpreting life and personality structures. The primary aim of this study is to examine the perceptions of online government services amongst different generations. The research of this study was carried out on the perception of e-government services with a questionnaire applied to the X, Y, Z generations to measure the similarities and differences in their understanding of these services. As a result of the research, individual typologies formed by the digital use of governmental services, which are called pre-techno individuals, techno individuals and post-techno individuals and the characteristics of these generations in terms of e-government services usage are revealed.

Keywords: generations, e-government services, digital governance

INTRODUCTION

At the dawn of the third millennium and in the global scale, societies live the Internet revolution engendered by the fusion of computers, satellites and fiber optics. The communication is henceforth competed by a horizontal communication. Every individual can become its own transmitter and be able to communicate directly at real time and at any time with the other interlocutors. The politics and governance are no exception to this. The political parties, government agencies of the countries, other groups and the individuals use more and more Internet to spread their messages among others. At the same time, they establish web pages which supply a variety of tools such as political documents, interactive equipment and links of talk. With the growth of the ICT enabled devices, more activities are driven on-line. The ever developing arrival of digital technologies has created enormous opportunities for new forms of government–citizen communication. Yet one of the aspects of these developments is very promising in terms of enhancing citizen engagement in decision making processes, thus to have a better understanding of political representation, transparency and participation. While on the other hand, enabling advanced engagement with the use of ICT devices might be challenging. Since e-government has different objectives such as information, consultation and decision making or participation (Freeman & Quirke, 2013; UNPAN, 2016), not all the time the main focus of e-government covers citizen engagement. In the current situation, countries are trying to realize e-government with the purpose of advancing government management systems and delivering superior services to the citizens. According to United Nations e-government survey 2016, "90 countries now offer one or more single entry portal on public information or online services, or both and 148 countries provide at least one form of online transactional services". This information from the survey shows us the rise in

countries' efforts in the matter of providing online information via e-government channels. Citizens, who are using e-government for information about the services, might still have difficulties in engaging with public agencies. This might be due to the lack of necessary applications that involve citizens in decision making processes or might be the choice of citizens who only search for information for a goal-directed purpose. Yet different generation groups, because of age differences, have further difficulties in understanding these applications.

A number of studies have explored the contribution of web sites and social media channels to citizen engagement at the municipal level (Agostino & Arnaboldi, 2016; Firmstone & Coleman, 2015; Lidén & Larsson, 2016) while some other studies focus on citizen engagement in e-government services (Haider, Shuwen, & Hyder, 2014; Kang & Gearhart, 2010; Suh, 2005). Nevertheless, the efficiency of e-government efforts to the contribution of citizen engagement is approached with some questions. Trechselet al. (2003) noted down that "e-access is by far the most dominant e-technique being pursed while e-consultation and e-forums are noticeably lagging". This remarked us that the use of websites for information distribution purposes used commonly while the use of ICT's to empower rich forms of engagement and participation were at the beginning phases for relatively early stages of e-government back in 2003. The primary aim of this study is to examine the perceptions of online government information amongst different generations. Consequently, the paper intends to investigate the realities about the engagement possibilities of e-government services for citizens for the case of Turkey. The research of this study was carried out on the perception of e-government services with a questionnaire applied to the X, Y, Z generations to measure the similarities and differences in their understanding of these services. As a result of the research, individual typologies formed by the digital use of governmental services, which are called pre-techno individuals, techno individuals and post-techno individuals and the characteristics of these generations in terms of e-government services usage are revealed.

E-GOVERNMENT AND E-FORM OF CITIZEN PARTICIPATION

E-government is a broad term for web-based services of state and local government. In a more narrow sense, e-government is the short version of electronic government and involves the use of electronic communication devices such as computers, mobile phones and the Internet to deliver public services to citizens.

There has been great amount of studies emphasizing the definition, historical development and stages of e-government studies (Alshehri & Drew, 2010; Haller, Li, & Mossberger, 2011; Holzer & Manoharan). Even though the definitions of e-government may differ in various sources, what is common in these definitions is the use of information technology for a better distribution of government services to citizens, businesses, and other government agencies.

For the primary study aim of this paper, we would like to refer to the definition of e-government in international organizations' researches such as OECD, World Bank and European Commission. Those researches cover many countries situation in terms of e-government in different aspects.

Definitions of e-government

Definition	**Source**
Use by government agencies of information technologies (such as Wide Area Networks, the Internet, and mobile computing) that have the ability to transform relations with citizens, businesses and other arms of government. These technologies can serve a variety of different ends: better delivery of government services to citizens, improved interactions with business and industry, citizen empowerment through access to information, or more efficient government management. The resulting benefits can be less corruption, increased transparency, greater convenience, revenue growth, and/ or cost reductions.	World Bank (2011)
Use of new information and communication technologies (ICTs) by governments as applied to the full range of government functions. In particular, the networking potential offered by the Internet and related technologies has the potential to transform the structures and operation of government.	OECD (2009)
E-government is about using the tools and systems made possible by information and communication technologies to provide better public services to citizens and businesses	European Commission (EC, 2011)

Source: Partnership on Measuring ICT for Development and the United Nations Economic Commission for Africa (2012), "Framework for a set of e-government core indicators"

For larger scale researches, it would be effective to categorize e-government web sites according to their types and functions. International Telecommunication Union, the leading United Nations agency for information and communication, on its e-government report made a distinction among the various e-government applications which was listed as national entry points, citizen or business-centric portals, ministry websites and provincial, local, and municipal websites (infoDev/World Bank, 2009). Based on these categorizations, we found it useful to mention two large scale ongoing projects since 2003.

One of these projects has been held by United Nations Public Administration Network on e-government. E-government is defined by United Nations Public Administration Network, UNPAN, as "utilizing the Internet and the world-wide-web for delivering government information and services to citizens" (UNPAN, 2016). UNPAN has been conducting bi-annual e-government surveys since 2003, focusing on e-government readiness of the member states. In other terms, UNPAN's e-government surveys are based on a quantitative composite index of e-government readiness constructed on website assessment and trying to measure "how willing and ready are the government around the world in employing the vast opportunities offered by e government to improve the access, and quality, of basic economic and social services to the people and involve them in public policy making via e participation" (UN Report, 2004).

E-government surveys of UNPAN measures countries' e-government services according to web presence model starting from stage 1 emerging presence to stage 5 networked presence. Examples vary from the presence of an official website, a national portal or an official home page to an integrated network of public agencies for the provision of information, knowledge and services. Apart from the e-government surveys of UNPAN, another continuous project entitled Digital Governance in Municipalities Worldwide Survey has been conducting in collaboration with E-Governance Institute at Rutgers University-Newark (Holzer & Manoharan). Within this project, evaluation of websites of municipalities in terms of digital governance has been analyzed and ranked the cities on a global scale according to privacy/security, usability, and content of websites, the type of online services currently being offered, and citizen engagement and participation through websites of municipal governments. This ongoing survey on digital governance in municipality scale takes citizen engagement as a criterion and analyzed the situation in different municipalities worldwide in terms of social and citizen engagement.

Citizen engagement and citizen participation are two core elements to be mentioned in order to talk about participatory e-government. These concepts are the important dimensions of e-government that relates the effects of ICT's between government-citizens relations. Yet the term e-participation is missing an inclusionary definition and the connection between e-participation and citizen engagement are subject to diverse researches, it would be more appropriate to define these terms according to UN and OECD's large scale projects' definitions. E-participation index developed by UN has classified the term under three sections which are e-information, e-participation and e-decision making. Similarly OECD, without a specific index, has defined three categories to enhance the relations between citizens and governments including information, consultation and active participation (OECD Report, 2007). Both classifications suggest various ways in which e-government may contribute in the transformation of governance, not only through service delivery but also through more informed and engaged citizenship. E-government initiatives can increase participation in the processes of government through information and interactive services, and by linking people across geographic boundaries. Social media tools as well as mobile applications of e-government services provide opportunities and challenges for governments to include stakeholders in dynamic policy development, service design, co-production and feedback processes.

E-GOVERNMENT IN TURKEY

In looking at the Internet's brief history in Turkey, the country has got public Internet access since 1993. The first available connections were dialup. Cable Internet has been available since 1998 and ADSL since 2003. For today's statistics, according to Turkish Statistical Institute study of ICT usage in households, 8 out of 10 households have Internet access and Internet usage of individuals was 61.2% by August 2016. As of August 2016 social networks took first place among the activities for Turkish Internet users, while 61.8% of Internet users used e-government services (Sæbø, Rose, and Skiftenes Flak, 2008). These statistics are showing us the

growing interest of Turkish citizens are not only concentrated on Internet use in general but on e-government services in particular.

Development of e-government in Turkey started in early 1990's with the purpose of increasing Turkey's competitiveness focusing on innovation, science and technology and strengthening ICT capacities and capabilities in Turkey (OECD Report, 2007). Starting from 2002, the process of modernization of public administration by implementing e-government as a tool has started. By February 2016, 216 public institutions provide 1.411 e-services to 26.546.787 registered users of the e-government gateway (portal) "https://www.turkiye.gov.tr/" that is the single contact point for many public institutions' e-services besides the institutions own website (Turkish Statistical Institute, 2016). Since 2011, Ministry of Transportation, Maritime Affairs and Communications is tasked with the coordination and supervision of the objectives and strategies of the relevant public authorities such as Ministry of Development and Information Society Department in the field of e-government.

Effective use of e-government can expand the efficiency and success of the public sector and links between government agencies. E-government development in countries is at different stages. Developed economies are relatively advanced in their use of ICT for advanced functioning of the public sector and service delivery.

Methodologies range from country-level surveys of government organizations to highly complex web-based surveys. On the global stage, UN's e-Government Survey 2016 that scores Turkey high on the e-participation index which measures three-level model of participation that includes e-information, e-consultation and e-decision-making. Turkey's e-participation index score is 0.6271 and is positioned on the 60th out of 193 countries with 73.5% of readiness for e-information, 68.4% of readiness for e-consultation and 0% of readiness for e-decision making stages and overall 63.3 % of readiness for e-participation. Another ranking criterion of the survey is on online service index according to which Turkey scores amongst the high level countries with the position of 68 (UNPAN report, 2016).

United Nations e-Government Survey is the most comprehensive survey that is being done in this domain. The important matter of this survey is that it covers 193 countries worldwide and is giving all the measurements according to regions as well. Europe wise, Turkey has been also analyzed under the ongoing projects of European Commission on e-government benchmarking of member states of European Union and Iceland, Montenegro, Norway, Serbia, Switzerland and Turkey for a number of years (Joinup Europa, 2016). The country performance is evaluated in terms of penetration and digitization. There has been noted two important outcomes of the project about Turkey. One of these was the country's progressive trend both on penetration and digitization within the years and the second was Turkey's high mobile users' profile but the lack of mobile friendly versions of public services. This second has been a general problem in all countries analyzed where only 1 in 3 public websites is easy to read and allow navigation on a mobile device (Joinup Europa, 2016).

E-GOVERNMENT AND E-CITIZEN RELATIONS: THE CASE OF TURKEY

E-Government services have been established to fasten the expansion of government in terms of quality, cost and distribution. Technology driven developments in every aspect of the social life, including the developments in e-government issues, continue to affect the life of citizens. Nevertheless, not all the citizens' reaction about managing technology and digital improvements is the same. This could be explained by the ability of technology usage amongst different generations. There are no definite dates for the starting and ending of generations according to different sources, yet generational differences, especially the differences between generations described as the Baby Boom Generation, Generation X, Y and Z are widely discussed in the popular press as well as in some scholarly publications.

As shown in **Table 1**, Reeves and Oh (2008, p. 296) briefly summarized the generational differences according to different scholars. The uncertainty about the dates and the denomination of the generations is quite visible. For example, some experts indicate that Generation Y workers were born in 1978 (Martin & Tulgan, 2002), while others (Howe & Strauss, 2000) have selected a starting date of 1982.

Table 1. Generational Labels and Dates Reported in Different Sources

Source	Labels				
Howe and Strauss (2000)	Silent Generation (1925–1943)	Boom Generation (1943–1960)	13th Generation (1961–1981)	Millennial Generation (1982–2000)	-
Lancaster and Stillman (2002)	Traditionalists (1900–1945)	Baby Boomers (1946–1964)	Generation Xers (1965–1980)	Millennial Generation; Echo Boomer; Generation Y; Baby Busters; Generation Next (1981–1999)	-
Martin and Tulgan (2002)	Silent Generation (1925–1942)	Baby Boomers (1946–1960)	Generation X (1965–1977)	Millennials (1978–2000)	-
Oblinger and Oblinger (2005)	Matures (<1946)	Baby Boomers (1947–1964)	Gen-Xers (1965–1980)	Gen-Y; NetGen; Millennials (1981–1995)	Post-Millennials (1995–present)
Tapscott (1998)	-	Baby Boom Generation (1946–1964)	Generation X (1965–1975)	Digital Generation (1976–2000)	-
Zemke et al. (2000)	Veterans (1922–1943)	Baby Boomers (1943–1960)	Gen-Xers (1960–1980)	Nexters (1980–1999)	-

Source: (Reeves & Oh, 2008, p. 296)

Table 2. Adaptation of Age Groups according to generations

Generations	Age Group	Population	%
X	57-40	22603338	22.63
Y	39-20	25416508	31.86
Z	19-17	5623319	7.30

Source: (Turkish Statistical Institute Report, 2017)

Table 3. World Values Survey Wave 6: 2010-2014, Important in life: Politics -Turkey

	TOTAL	Age		
		Up to 29	30-49	50 and more
Very important	16.1	14.3	15.5	19.2
Rather important	31.3	35.9	30.5	28
Not very important	32.3	33.8	33	29.3
Not at all important	19.2	15.3	19.5	22.7
No answer	0.2	0.2	0.3	0
Don't know	0.9	0.5	1.2	0.9
(N)	**1.605**	**450**	**735**	**420**

Source: World Values Survey

On the other hand, the generation studies may vary from one society to another, especially if we count on life perceptions and expectations of these different generation groups. For this reason we have divided the so defined as millennial generation into two different groups as Y and Z. For the Z generation we have only considered the age groups 17-19 as the research part of this study would be concentrating on perception of e-government services. Normally Z generation consists of wider age groups but given the research aim, we have selected 17-19 ages for Z generation due to the fact that only those age groups from Z generation might consider using e-government services.

Since our research would be consisting of Turkish citizens, we referred to Turkish Statistical Institute's population data from 2016 and adopted the generation studies from the literature to Turkish population.

According to the address-based population registration data of TÜİK in 2016, population of generations were determined to be 5,6 million for Generation Z (7.30%), 25.4 million for Generation Y (31.86%), 22 million (22.63%) for Generation X.

The focus of this study is on the three generations (X, Y, Z), because members of these three generations considered to be using e-governmental services more than other generation groups. For the purposes of this study, instead of mentioning the overall differences of these three generations, it would be more significant to emphasize the attitudes about politics and use of technology. According to World Values Survey, the importance given to politics by Turkish citizens of different age groups can be seen on **Table 3**.

A World Value's survey shows that 16% of the population finds politics very important in life; 31.3% finds it rather important in life and 19.2% finds politics not important at all in life. This clearly demonstrates that there is divided interested in politics; while half of the population surveyed found it relatively important, the other half did not. Nonetheless, this survey only has measured the interest in politics but excludes the perception of e-government services.

Another aspect of generational difference for this study, is related to use of technology. According to Pew Research Center's report on generations, millennial generations (Y, Z) have a positive attitude towards technological devices of any sort while generation X does not. Although elder generation groups own the technological devices such as mobile phone, tablets and laptops, the usage aim and objective usually orients to less complicated activities in those older generations. Consequently, this can be interpreted as a divide not in terms of possession the devices but in terms of usage habits and knowledge (Pew Research Center, 2010).

A recently published press release of Turkish Statistical Institute dated August 2017 gave us some additional information about the practice of e-government services by citizens: "During the twelve months (April 2016-March 2017), 42.4% of Internet users among the individuals aged 16-74 interacted with public authorities over the Internet for private purposes. This proportion was 36.7% for the period of April 2015-March 2016. Obtaining information from public authorities' web sites was at the first rank with 37.6%" (Turkish Statistical Institute, 2017).

Method of the Research

A questionnaire consisting of 18 questions was conducted as data collection method in this research. The use of the e-government system is addressed and the benefits and confidence gained in this use are addressed. The question types used in the questionnaires are multiple choice questions, 5 questions Likert, approval questions as linear scale question. In the confirmation questions, there are more than one choice of option. In the multiple choice questions, the 'other' option was added to the questionnaire using the open-ended question type. Using the 5-point Likert Scale, participants were asked to choose between "absolutely disagree", "disagree", "undecided", "agree", "strongly agree".

It is summarized with table and graphical methods of descriptive statistical methods, then analyzed with procedural statistical methods and further analyzes are made. In addition to the Internet environment, individual surveys have provided the deepening of the work in the qualitative aspect, and comments on numerical analysis have been made.

Assumptions and Limitations of the Research

A total of 355 people has been reached in this study. These individuals, chosen by random sample method, adequately represent the population. These quantities have been tested with the KMO Barlett test. The scales used in this study were found to be in accordance with factor analysis. The two-stage questionnaire was consisted of 150 participants in the online survey and 205 participants in the individual interviews.

Responses to research questions are rational. These responses were analyzed by Mann Whitney and Kruskal Wallis methods. Limitations of the research are also listed below:

- The population in this research was identified as Internet users.
- In an individual survey study, among the people born between 1960-1977, 1978-1997, 1998-2000, individuals who actively use the Internet were selected.
- The online part of the research was done by using the snowball sampling method over the social media users.

Collection and Analysis of data

After the conceptual part of the work was created by literature review, 18-question questionnaire form was created by Google Forms for the research part of the study. The obtained data were obtained with SPSS 23 program and the 95% confidence level was used. Nonparametric test techniques Mann Whitney and Kruskal Wallis were used in the study. Mann Whitney is a test technique used to compare two independent groups in terms of a quantitative variable, Kruskal Wallis' independent group k (k> 2) in terms of a quantitative variable. The nonparametric Kruskal-Wallis test is used to determine whether 3 or more groups / samples come from the same phase for a number of K groups. The Kruskal-Wallis test is used when the assumptions required for one-factor variance analysis that is parametric to this test cannot be met. The hypotheses of the research are listed below:

H1a: I see the e-government services as a system to facilitate bureaucratic operations

H1b: Actively use the e-government services

Table 4. Information for E-Government Use

		n	%
Do you have an e-government system use password?	Yes	333	82.2
	No	72	17.8
Purpose of using the e-government system; electronic payroll	Yes	60	14.8
	No	346	85.2
Purpose of using the e-government system; judicial proceedings	Yes	77	19.0
	No	329	81.0
Purpose of using the e-government system; debt inquiry	Yes	108	26.6
	No	298	73.4
Purpose of using the e-government system; getting information	Yes	277	68.2
	No	129	31.8
Purpose of using the e-government system; other	Yes	40	9.9
	No	366	90.1

Table 5. Relation Analysis of Generation Groups' Level of Involvement with Scale Exceptions

Generation			I see the e-government system as a system to facilitate bureaucratic operations	Through e-government system, I am notified to the official institutions of desire, complaints and requests
1960-1977	Actively use the e-government system	r	-.064	.002
		p	.458	.982
		n	135	135
	I see the e-government system as a system to facilitate bureaucratic operations	r	1	.396**
		p		.000
		n	135	135
1978-1997	Actively use the e-government system	r	.149	.119
		p	.085	.167
		n	135	135
	I see the e-government system as a system to facilitate bureaucratic operations	r	1	.319**
		p		.000
		n	135	135
1998-2000	Actively use the e-government system	r	-.022	-.103
		p	.796	.233
		n	135	135
	I see the e-government system as a system to facilitate bureaucratic operations	r	1	.304**
		p		.000
		n	135	135

H1c: Using e-government services and notifying official institutions of complaints and requests

Based on the above hypotheses, generation typology has been realized according to the obtained data. According to the rate of influence of the generations from the digital culture (by analyzing with the questions), the characteristics of the individuals and typologies are formed.

Table 4 shows the e-government usage information of the participants. The majority of participants have e-government ciphers (82.2%). The purpose of e-government use; the ratio of those who have payroll is 14.8%; the proportion of those with judicial proceedings is 19.0%; the proportion of those who have debt questioning is 26.6%; the rate of acquiring information is 68.2%; the rate of those with other causes is 9.9%.

The results of the relationship test of the participation level and generation groups in scale expressions are seen in the above **Table 5**.

Generation of 1960-1977

There is a positive and weak relationship between the level of participation in the expression "I see the e-government services as a system facilitating bureaucratic operations" and the level of participation in the expression of "complaints and requests to inform official institutions via the e-government system".

Generation of 1978-1997

There is a positive and weak relationship between the level of participation in the expression "I see the e-government services as a system facilitating bureaucratic operations" and the level of participation in the expression of "complaints and requests to inform official institutions via the e-government system".

Table 6. Comparison of Generation Groups in Terms of Scale Expressions Participation Level

What is your age range?		n	Rank average	X^2	p
Actively use the e-government system	1960-1977	135	201.90	**6.302**	**0.043***
	1978-1997	135	220.97		
	1998-2000	135	186.13		
I see the e-government system as a system to facilitate bureaucratic operations	1960-1977	135	194.93	**1.026**	**0.599**
	1978-1997	135	207.06		
	1998-2000	135	207.01		
Through e-government system, I am notified to the official institutions of desire, complaints and requests	1960-1977	135	224.99	**8.657**	**0.013***
	1978-1997	135	197.94		
	1998-2000	135	186.07		

Table 7. Comparison of Gender Groups in Terms of Scale Expressions Participation Level Between 1960-1977

Gender		n	Rank average	U	p
Actively use the e-government system	Female	62	62.02	**1892.0**	**0.092**
	Male	73	73.08		
I see the e-government system as a system to facilitate bureaucratic operations	Female	62	66.35	**2161.0**	**0.643**
	Male	73	69.40		
Through e-government system, I am notified to the official institutions of desire, complaints and requests	Female	62	75.06	**1825.5**	**0.047***
	Male	73	62.01		

Table 8. Comparison of Gender Groups in 1978-1997 in terms of Scale Grades Participation Level

Gender		n	Rank average	U	p
Actively use the e-government system	Female	61	63.03	**1954.0**	**0.167**
	Male	74	72.09		
I see the e-government system as a system to facilitate bureaucratic operations	Female	61	73.25	**1937.0**	**0.142**
	Male	74	63.68		
Through e-government system, I am notified to the official institutions of desire, complaints and requests	Female	61	65.46	**2102.0**	**0.467**
	Male	74	70.09		

Table 9. Comparison of Gender Groups in the scale of 1998-2000 in terms of Scale Grades Participation Level

Gender		n	Rank average	U	p
Actively use the e-government system	Female	80	65.18	**1974.0**	**0.298**
	Male	55	72.11		
I see the e-government system as a system to facilitate bureaucratic operations	Female	80	71.38	**1929.5**	**0.210**
	Male	55	63.08		
Through e-government system, I am notified to the official institutions of desire, complaints and requests	Female	80	69.51	**2079.0**	**0.558**
	Male	55	65.80		

Generation of 1998-2000

"I see the e-government services as a system to facilitate bureaucratic operations" statement provokes weak positive relationship between the level of participation in the phrase "complaints, and requests to make statements to government agencies via the e-government system".

In **Tables 6** and **7**, there is a comparative test in terms of scale expressions participation scores among gender groups according to generations. According to Mann Whitney test for men and women in different generation groups; there is a statistically significant difference between women and men between 1960-1977 in terms of participation level in the statement "complaints and requests to inform official institutions via e-government system" ($U = 1825.5$, $p < 0.05$). The average score of women is 75.06, while that of men is 62.01. Accordingly, the level of participation of women in the expression is higher.

In **Table 10**, there is a comparative test in terms of scale grades participation level. According to Mann Whitney test for working status in different generation groups; there is a statistically significant difference in the level of participation in the phrase "actively use of the e-government services" among the working conditions of the 1960-1977 bourse. ($U = 1001.0$, $p < 0.05$). The average score of those who work is 76.68, while those who are not working are 45.84. Accordingly, those who are working have a higher level of participation in the expression.

Table 10. Comparing Working Status in the 1960-1977 Circle in Terms of Scale Expressions Participation Level

Working status		n	Rank average	U	p
Actively use the e-government system	Employed	97	76.68	**1001.0**	**0.000***
	Unemployed	38	45.84		
I see the e-government system as a system to facilitate bureaucratic operations	Employed	97	69.10	**1736.0**	**0.591**
	Unemployed	38	65.18		
Through e-government system, I am notified to the official institutions of desire, complaints and requests	Employed	97	64.42	**1495.5**	**0.080**
	Unemployed	38	77.14		

Table 11. Comparison of Working Status in 1978-1997 in terms of Scale Expressions Participation Level

Working status (1978-1998)		n	Rank average	U	p
Actively use the e-government system	Employed	75	74.45	**1766.5**	**0.027***
	Unemployed	60	59.94		
I see the e-government system as a system to facilitate bureaucratic operations	Employed	75	67.12	**2184.0**	**0.762**
	Unemployed	60	69.10		
Through e-government system, I am notified to the official institutions of desire, complaints and requests	Employed	75	73.92	**1806.0**	**0.037***
	Unemployed	60	60.60		

Table 12. Comparison of Working Status in 1998-2000 in terms of Scale Expressions Participation Level

Working status (1998-2000)		n	Rank average	U	p
Actively use the e-government system	Employed	27	85.93	**974.0**	**0.006***
	Unemployed	108	63.52		
I see the e-government system as a system to facilitate bureaucratic operations	Employed	27	54.24	**1086.5**	**0.035***
	Unemployed	108	71.44		
Through e-government system, I am notified to the official institutions of desire, complaints and requests	Employed	27	50.98	**998.5**	**0.006***
	Unemployed	108	72.25		

In **Table 11**, there is a comparative test in terms of score expression participation level scores among the study groups according to generation groups. According to Mann Whitney test for working status in different generation groups; there is a statistically significant difference in the level of participation level in the phrase "active use of the e-government system" among the working status of the circles between 1978-1997 (U = 1766,5, p <0,05). The average score of those who work is 74.45, while those who are not working are 59.94. Accordingly, those who are working have a higher level of participation in the expression.

There is a statistically significant difference in the level of participation in the expression of "complaints and requests to inform the official institutions via the e-government system" among the working status of the circles between 1978-1997 (U = 1806.0, p <0.05). The average score of those who work is 73.92, while those who are not working are 60.60. Accordingly, those who are working have a higher level of participation in the expression.

In **Table 12**, there is a comparative test in terms of score expression participation level scores among the study groups according to generation groups. According to Mann Whitney test for working status in different generation groups; there is a statistically significant difference in the level of participation level in the phrase "actively use of the e-government services" between the working status of the 1998-2000 level (U = 974.0, p <0.05). The average score of those who are working is 85.93, while those who are not working are 63.52. Accordingly, those who are working have a higher level of participation in the expression.

There is a statistically significant difference (U = 1086.5, p <0.05) in terms of participation level score in the expression of "I see the e-government system as a system facilitating bureaucratic operations" among the working status of the circles of 1998-2000. The average score of those who work is 54.24, while those who are not working are 71.44. Accordingly, those who are not working have a higher level of participation in the expression. There is a statistically significant difference (U = 1086.5, p <0.05) in terms of participation level score in the expression of "I see the e-government system as a system facilitating bureaucratic operations" among the working status of the circles of 1998-2000. The average score of those who work is 54.24, while those who are not working are 71.44. Accordingly, those who are not working have a higher level of participation in the expression.

Table 13. Comparison of Educational Status Groups of 1960-1977 in terms of Scale Expression Participation Level

Education Status		n	rank average	X2	p
Actively use the e-government system	Primary school	19	35.68	**25.732**	**0.000***
	Middle School	20	59.10		
	High School	34	63.47		
	Vocational school	17	80.59		
	University	30	81.83		
	Graduate – PHD	15	89.13		
I see the e-government system as a system to facilitate bureaucratic operations	Primary school	19	73.58	**6.802**	**0.236**
	Middle School	20	61.35		
	High School	34	73.82		
	Vocational school	17	81.00		
	University	30	56.07		
	Graduate – PHD	15	65.73		
Through e-government system, I am notified to the official institutions of desire, complaints and requests	Primary school	19	67.47	**4.453**	**0.486**
	Middle School	20	63.40		
	High School	34	76.75		
	Vocational school	17	65.97		
	University	30	58.88		
	Graduate – PHD	15	75.50		

Table 14. Comparison of Educational Status Groups of 1978-1997 in terms of Scale Expression Participation Level

Education Status		n	rank average	X2	p
Actively use the e-government system	High school and under	23	64.41	**6.398**	**0.094**
	Vocational school	24	64.48		
	University	69	64.80		
	Graduate – PHD	19	88.39		
I see the e-government system as a system to facilitate bureaucratic operations	High school and under	23	48.61	**7.368**	**0.061**
	Vocational school	24	72.96		
	University	69	71.49		
	Graduate – PHD	19	72.53		
Through e-government system, I am notified to the official institutions of desire, complaints and requests	High school and under	23	69.74	**1.981**	**0.576**
	Vocational school	24	67.25		
	University	69	64.90		
	Graduate – PHD	19	78.11		

Table 15. Comparison of Educational Status Groups of 1998-2000 in terms of Scale Expression Participation Level

Education Status		n	rank average	X2	p
Actively use the e-government system	High school and under	98	64.86	**8.001**	**0.018***
	Vocational school	24	87.17		
	University	13	56.31		
I see the e-government system as a system to facilitate bureaucratic operations	High school and under	98	68.06	**1.600**	**0.449**
	Vocational school	24	73.63		
	University	13	57.15		
Through e-government system, I am notified to the official institutions of desire, complaints and requests	High school and under	98	73.09	**7.074**	**0.029***
	Vocational school	24	54.52		
	University	13	54.54		

In **Table 13**, there is a comparative test in terms of scores of participation levels among the educational status groups according to generation groups. According to Kruskal Wallis test for educational status groups in different generation groups; there is a statistically significant difference (¼ 25.732, p <0.05) in terms of participation level in the expression of "actively use of e-government system" among educational status groups between 1960-1977. The average score of primary school graduates is 35.68, 59.10 for middle school graduates, 63.47 for high school graduates, 80.59 for college graduates, 81.83 for university graduates and 89.13 for graduate and doctoral graduates. According to this, graduates of masters and doctorates have a higher level of participation in the expression.

Table 16. Comparison of having an e-government cipher in terms of scale expressions participation level

Generation	Do you have e-government encryption?		n	Rank average	U	p
1960-1977	I see the e-government system as a system to facilitate bureaucratic operations	Yes	111	68.55	1271.0	0.718
		No	24	65.46		
	Actively use the e-government system	Yes	111	75.63	485.0	0.000*
		No	24	32.71		
	Through e-government system, I am notified to the official institutions of desire, complaints and requests	Yes	111	69.37	1179.5	0.367
		No	24	61.65		
1978-1997	I see the e-government system as a system to facilitate bureaucratic operations	Yes	124	67.81	659.0	0.848
		No	11	70.09		
	Actively use the e-government system	Yes	124	71.98	189.0	0.000*
		No	11	23.18		
	Through e-government system, I am notified to the official institutions of desire, complaints and requests	Yes	124	68.31	644.0	0.745
		No	11	64.55		
1998-2000	I see the e-government system as a system to facilitate bureaucratic operations	Yes	98	69.67	1649.5	0.404
		No	37	63.58		
	Actively use the e-government system	Yes	98	83.62	282.0	0.000*
		No	37	26.62		
	Through e-government system, I am notified to the official institutions of desire, complaints and requests	Yes	98	64.65	1484.5	0.080
		No	37	76.88		

*p<0.05 there is a significant difference; p>0.05 no significant difference

In **Table 15**, there is a comparative test in terms of scores of participation levels among the educational status groups according to generation groups. There is a statistically significant difference between the groups of education status in the 1998-2000 period (-7.074, p <0.05) in terms of the level of involvement in the expression of "complaint and request to notify official institutions via e-government services". The average score of high school and six graduates is 73.09, 54.52 for associate degree graduates and 54.54 for university graduates. According to this, those who have high school and six graduates have a higher level of participation in the expression.

In **Table 16**, there is a comparative test in terms of scale expressions participation level scores between having an e-government cipher according to generation groups. According to Mann Whitney test for e-government password in different generation groups; there is a statistically significant difference in the level of participation level in the phrase "actively use of the e-government services" between the 1960-1977 levels of e-government cipher (U = 485.0, p <0.05). The average score of those who actively use the e-government system is 75.63, and those who do not use it actively are 32.71. According to this, those who actively use the e-government system have a higher level of participation in the expression.

There is a statistically significant difference between the 1978-1997 levels of e-state passwords (U = 189.0, p <0.05) in terms of participation level in the expression "actively use of e-government services". Those who actively use the e-government system have a score of 71.98 points, and those who do not actively use it are 23.18. According to this, those who actively use the e-government system have a higher level of participation in the expression.

There is a statistically significant difference in terms of participation level score in the expression of "actively use of e-government services" between the 1998-2000 level of e-state passwords (U = 282.0, p <0.05). The average score of those who actively use the e-government system is 83.62, and those who do not actively use the system are 26.62. According to this, those who actively use the e-government system have a higher level of participation in the expression.

CONCLUSION

Information society and e-government applications transformed the way citizens are interacting with the government and its services. Today, as a part of information society, the development of communication technologies and the widespread use of these technologies is converting our traditional understanding of governmental services. Individuals within these e-governmental services are able to track bureaucratic tasks and make transactions faster in their daily lives. The research of this study was carried out on the perception of e-government services with a questionnaire applied to the X, Y, Z generations to measure the similarities

Table 17. The characteristics of different generations in terms of e-government services usage

Pre-techno individual	- The usage of e-government services is more active than post-techno individuals. Second rank in terms of active usage. - The lowest rate of seeing the e-government services as a system facilitating bureaucratic work.
Techno individual	- The most active users of e-government services. - The rate of seeing the e-government services as facilitator in bureaucratic work is higher than the others.
Post-techno individual	- The lowest group with active use of e-government services. - The level of seeing the e-government services facilitating bureaucratic operations is moderate. - The lowest level of reporting complaints and requests to government agencies via the e-government system.

and differences in their understanding of these services. According to this study on generations, three types of individuals was revealed. These individuals are classified according to their age groups and characteristics. The relationship between technology and the development process of technology, the pre-techno individual is born before Internet technology and come across with these technologies after certain age. The techno individual is partnered with Internet technology in a timely manner and use Internet technology during the childhood and youth and also able to capture and actively use this technology in many areas of social life. Finally, a post-techno individual is born after the development of Internet technology or even after its widespread use.

Digital culture has the power reshape the social life and the citizens from different generations, even unconsciously, are going through the effects of this newly constructed social life. For example, the use of e-government portal in pre-techno individuals is more common than post-techno individuals since bureaucratic procedures must be carried out through this system, pre-techno group uses it more often. Contrary to the expected, post-technological individuals are less digital than techno individuals. The reason for this situation is that this age group does not need to use governmental services as much as the others. In this case, techno-individuals are the most affected generation as these individuals grow up with technology, they have been subjected to all reflections of digital culture.

According to the results of the research, the findings about the perception of e-government services amongst different generations could be summarized as **Table 17**.

The typology constructed from the research yet has to be improved by involving different perception aspects of the digital life such as online shopping and online gaming. This study might be considered as a starting point for future researches. The differences between generations' understanding of digital life and culture can be analyzed from point of views of other countries' citizens. This might be beneficial to reveal the connection between digital cultures, generation cultures and socio cultural aspects of governments.

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