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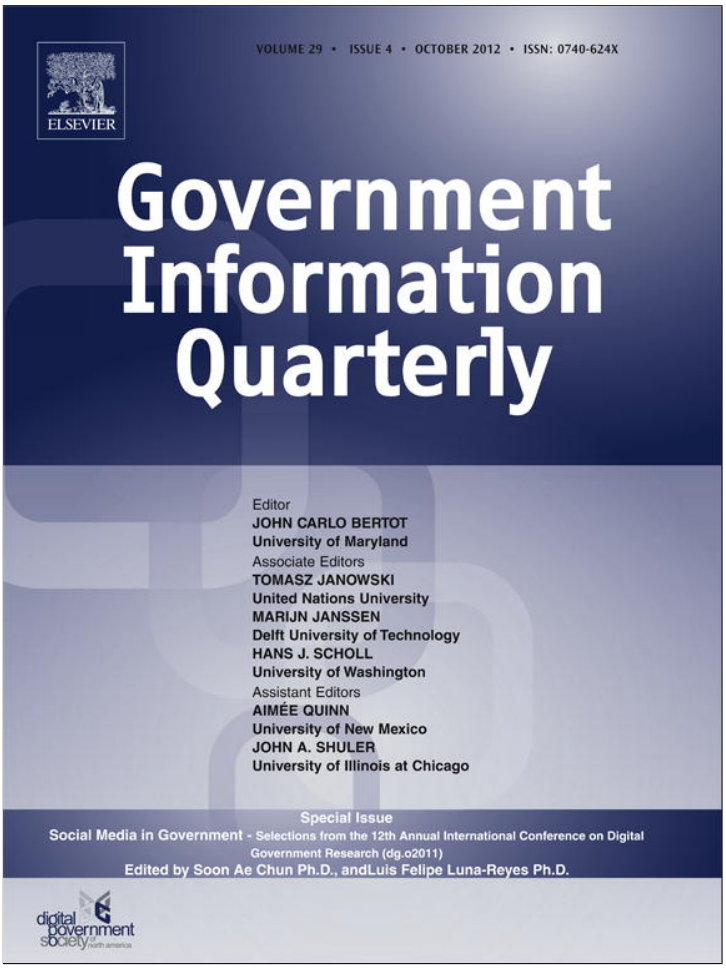

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Digital exclusion in Turkey: A policy perspective

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ABSTRACT

This article explores the patterns of the digital divide in Turkey and analyzes policies related to this issue. Our analysis reveals that the digital disparities are interwoven with other social inequalities. This finding is parallel to the conclusions of previous research which suggests that digital exclusion can have a 'reinforcing' effect on social and/or economic inequalities. Having considered the current range of policies targeting either ICT access or skills, we argue that techno-centric solutions with huge budgets occupy the policy agenda at the expense of more sophisticated programs that take into account the social context of digital exclusion. These policies fail to address the most disadvantaged groups. Those who are old, disabled, female and reside in rural areas are less likely to be internet users and existing policies do not reach out to these groups.

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1. Introduction

Over the last few years, the internet and associated technologies have become an essential part of everyday life, affecting education, employment, and leisure, amongst other activities. More and more government services are becoming available online. Nevertheless, many individuals have not been able to extract any benefit from these technologies. Even with the recent expansion of internet access and usage in Turkey, there are still significant obstacles to be overcome. This article aims to explore the patterns of the digital divide in Turkey and to analyze policies related to it. Descriptive statistics demonstrate that the elderly, the disabled, women, and residents of rural areas are less likely to be internet users.

In the age of the internet, enjoying full citizenship requires new educational competencies as well as technological access and skills. Social problems such as poverty, illiteracy, and other disadvantages prevent many people from fully participating in an increasingly online world. As a developing country with a young population and growing economy, Turkey has demonstrated rapid growth both in internet adoption and governmental use of these technologies. However, there are significant inequality issues which have yet to be addressed by digital inclusion policies.

In Western literature, the digital divide has been an important academic and policy concern over the last two decades. While the first generation of studies of the digital divide focused on internet access, more recent research has considered the importance of the skills and usage gaps, too (Bertot, 2003; Hargittai, 2002; Van Dijk & Hacker, 2003; Warschauer, 2003a). As internet access levels have currently reached almost 70% in developed countries (ITU, 2010; OECD, 2010), the discourse on the digital divide has expanded to include a consideration of other factors that generate digital inequality (Barzilai-Nahon, 2006; DiMaggio & Hargitai, 2001; Ferro, Helbig, & Gil-Garcia, 2011; Warschauer, 2003a). Although the literature has moved in this direction, in developing countries such as Turkey, inequalities of access are still glaring. Despite an increase in the percentage of Turkish households connected to the internet, from a low of 7% in 2004 to a high of 43% in 2011, a large part of society still lags behind in an ever-growing virtual society (TUIK, 2011). In the early stages of internet, only a privileged minority had access to it, with the rest, the vast majority of the population, had no such access. However, they did not lose much because life was still predominantly offline at that time. In contrast, someone who does not have access to the internet today is much worse off than he would have been in those early years. This makes the digital divide a more pressing academic and policy issue today.

The aim of this paper is to bring to light meaningful patterns of digital exclusion and to analyze policies related to it. This will provide policy makers with new perspectives in their attempts to develop improved digital inclusion policies. The article is based on data collected through analysis of the relevant strategy documents and specific digital inclusion projects, as well as interviews and official statistics. The next section will explain why the digital divide is an important policy issue for an increasingly connected world. The third section will explore patterns of digital exclusion in Turkey. The fourth section will briefly summarize existing policies and projects that have been designed to combat the digital divide. The concluding section will highlight the need for more sophisticated programs that take the social context of digital exclusion into consideration and will argue that access and skills-oriented policies should be implemented simultaneously to reach out to the excluded groups.

2. The digital divide as a policy issue

In a developing country like Turkey, where significant social and economic inequalities persist, it may seem a 'luxury' to be concerned

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about the digital divide as a policy issue. It has been argued that the deeper structural inequalities at the heart of widespread social deprivation, poverty, and unemployment are not, and cannot be, addressed by Information and Communication Technology (ICT) policies and that any emphasis on the digital divide diverts attention away from these structural problems (Selywin, 2002). The difficulty with this argument is that it fails to take into account the ways in which existing socio-economic inequalities overlap with the digital divide. Those who are left behind in terms of income, education, and gender roles are the very people who are most likely to be left behind when it comes to taking part in the virtual world (Brännström, 2012). Rather than being a 'luxury' that diverts attention from existing inequalities, a discussion of the digital divide highlights those present in Turkish society and provides an opportunity to develop policies that address them.

It can also be argued that the digital divide should not be given priority as a policy issue since the gap is rapidly closing as Turkey becomes a more prosperous nation. While it is true that the number of people who are being left behind in terms of internet usage has been declining, this does not mean the digital divide is less important as a policy issue. On the contrary, those who are left behind are at a growing disadvantage as many government services, ranging from health and tax information, to school registrations and social security benefit data are now available online. Although the internet is used predominantly for the delivery of services on government websites, there are some examples of its use for democratic purposes, such as for online political participation (Boulianne, 2009; Polat, 2005). Therefore, those excluded from the virtual world are not only deprived of wider access to information, public services, and other economic benefits, but also of an opportunity to pursue their rights as citizens, including political participation. Moreover, even if universal access is achieved, it will not mean the end to the digital divide because the continuous advent of new technologies and applications means that it is always the minority who first adopt and take advantage of such advances. For example, the emergence of the mobile internet, multimedia devices and interactive services has created a phase difference even amongst those who do have access. More significantly, as access increases, other aspects of digital exclusion stemming from inequalities of usage and skills will remain on academic and policy agendas, as can be observed in the literature that focuses on developed countries.

3. The pattern of the digital divide in Turkey

The digital divide has been defined in many different ways since it first emerged as a subject for study in the 2000s. Even a quick perusal of these studies makes clear the multi-faceted nature of the issue (Bertot, 2003; Mossberger, Tolbert, & McNeal, 2008; Van Dijk & Hacker, 2003; Van Doorn & Van Zoonen, 2009). DiMaggio, Hargittai, Neuman, and Robinson (2001, p. 310) define the digital divide broadly: "Inequalities in access to the internet; extent of use; knowledge of search strategies; quality of technical connections and social support; ability to evaluate the quality of information; and, diversity of uses." Although we find this sophisticated approach to the digital divide very useful in understanding its many dimensions, we will focus only on regular usage of the internet. This is not to claim that regular use of the internet is the best way to measure patterns of exclusion from the Information Society. We think, however, that this is an appropriate proxy for two reasons: first of all, the Turkish internet access level is far below that of Western countries, where it is about 70%. Therefore, it is important to identify those groups that are most and least likely to be internet users. Secondly, identifying the inequalities in regular usage is the first step in understanding the more sophisticated forms of inequality, including differences in skills, diversity of use, and the ability to evaluate information.

Research on the digital divide in both developed and developing countries demonstrates significant inequalities based on age, income, education, gender, geography, and race/ethnicity (Brännström, 2012; Eynon, 2009; Mossberger, 2009; Torenli, 2006; Yildiz, 2010). Although an analysis of the descriptive statistics in Turkey discloses similar inequalities, there are also digital divide issues which are particular to Turkey. Before exploring the patterns of the digital divide in Turkey, we need to create an operational definition of internet use in the country. Internet use can be defined in various ways; while earlier studies considered internet use in any location, more recent studies have looked at household access, since using the web at home is more convenient and suitable for different purposes. However, the mere existence of household access is no guarantee of effective and regular use of the facility. In this article, following Mossberger et al. (2008), *daily* use of the internet is taken as the criterion for measuring internet use. Daily use implies sufficient technical competence and information literacy skills for effective use. Although household internet access was judged to be at 43%, the percentage of people who use the web on a daily or almost daily basis in Turkey was measured at only 36% by 2011.[1]

Significant inequalities based on age, gender, and region have become apparent through the examination of the patterns of the digital divide in Turkey. In regard to the variations between the different age groups, Turkey is similar to other cases where younger groups are more likely to be internet users. Sixty-six percent of people between the ages of 16 and 24 are internet users, while the percentage is down to 23% for people 45–54, and only 10% for those 55–64. These figures are not surprising, and are comparable to the age breakdown in other countries. Young people are usually early adopters of new technologies and tend to use more applications (Van Dijk, 2009).

There is also a significant gap between genders in internet usage. Many studies of the digital divide in other countries have demonstrated that the gender gap in internet access and use is closing (Van Dijk, 2009). However, in Turkey only 27% of women, as opposed to 46% of men, are regular internet users. What is more alarming is that the percentage of women using the internet lags behind the percentage of men using internet across all age groups (Table 1). This is in contrast to the expectation that the gender gap would have closed in the younger age groups. It is possible to argue that in the absence of specific policies targeting the divide, the gender gap in Turkey will remain an issue for future generations.

The only group of women having similar levels of internet use to men is the highly educated. Internet usage by females who have a tertiary education is quite close to the levels of males with a similar background (Table 2). It seems that education is a powerful policy tool in combating the gender gap in internet access and use in Turkey. Although there have been several campaigns by civil society and governmental organizations aimed at increasing the enrollment of girls in schools, 12% of Turkey's adult women remain illiterate and 8 out of 10 illiterate individuals are women (Prime Ministry of Turkey (2011a)). The number of men with secondary, university or graduate degrees is higher than women in all these categories.[2] The digital divide between men and women in Turkey is a natural continuation of the general discrepancy in access to education. The level of education has a big impact on income and employment, both of which are strong predictors of internet access and use.

Another significant divide exists between the urban and rural parts of the country. Although internet use has increased amongst residents of both regions in the last few years, there is still a significant and consistent gap. Only 18% of rural residents are regular internet users while the figure is 44% for urban residents. Considering that

[1] A problem with studying the digital divide in Turkey is the lack of sources measuring Internet access and use. The Turkish Statistical Institute (TUIK) collects and publishes data related to Internet access and use in Turkey. Respondents are asked about their frequency of use. There is no category measuring daily use. However, there is a category of daily/almost daily use.

[2] The Status of Women in Turkey, a Report by the Directorate-General of Women's Status at the Prime Ministry of Turkey (2011a) (see figures on page 13).

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Table 1
Internet usage by age and gender by, 2011.
Source: TUIK, 2011.

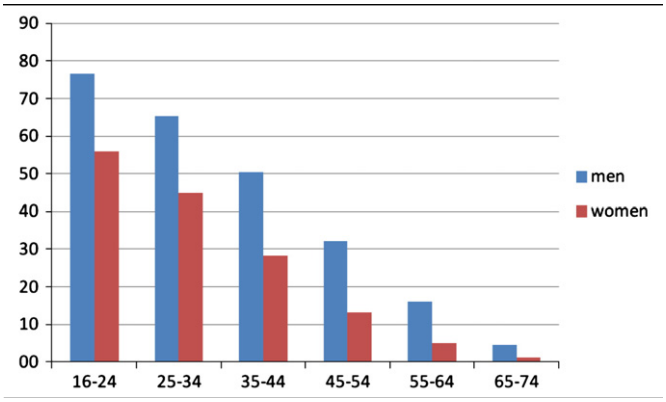
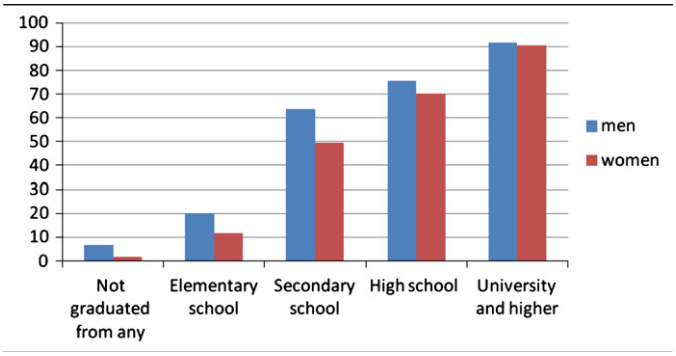


Table 2
Internet usage by education and gender by 2011.
Source: TUIK, 2011.



29% of the population lives in rural areas,[3] the urban–rural divide in access and use is a significant policy issue for Turkey. Moreover, it is rural residents who could most benefit from the internet through its role in ending their geographic isolation and in facilitating access to government services (Akca, Sayili, & Esengun, 2007). The divide between the urban and rural parts of the country deserves closer examination. The possible reasons for the divide may be a lack of the availability of suitable technologies in less populated areas, as well as more structural issues such as differences in educational levels and employment status. Rural areas are also disadvantaged in the provision of broadband access and low connection speeds, both of which affect the quality of people's experiences with the internet. Broadband use is important for full connectivity as the internet has evolved in ways that offer many multimedia features that require higher connection speeds. Research has demonstrated that high-speed connections are associated with both more frequent and more diverse web usage (Mossberger, 2009, p.179). The divide between rural and urban areas is also significant in terms of the ways in which they use the internet, with urban users being more sophisticated. The percentage of those using or writing a computer language or identifying and solving a computer problem is significantly higher in urban areas than in rural ones (DPT, 2011, p. 26). Rural residents are also less likely to use the internet for educational purposes, banking or downloading a program. The rural–urban usage gap disappears when it comes to reading news and downloading entertainment materials (DPT, 2011, p. 27).

A significant step in increasing computer and internet access throughout the country has been the establishment of the ICT infrastructure in schools. For this purpose, items of ICT equipment including computers, printers, scanners and projectors have been provided to Primary and Secondary schools by the Ministry of Education. However, detailed examination of the investment made reveals a number of significant inequalities in terms of the number of students per computer. Somewhat unsurprisingly, the five cities with the highest number of students per computer in secondary education are Diyarbakır, Şanlıurfa, Gaziantep, Batman and Istanbul, cities which, except for Istanbul, are overwhelmingly populated by Kurds.[4]

The rural–urban divide in online access and use should not divert attention away from the lack of connection in the inner-city. As profit-oriented organizations, private companies make investments in locations where they expect a high return. Therefore, poor areas of big cities like Istanbul still lack latest internet technologies. These inner-urban areas are also disadvantaged places where poverty, unemployment and a lack of educational opportunities are concentrated.

Experiencing circumstances similar to those of rural residents, the disabled have also been singled out as a demographic that could benefit from improved access to the internet and its associated e-government services. In the convenience of their own homes, such people could take advantage of abundant information, electronic communities, the latest disability advocacy news, distance-learning classes, and on-line shopping for books, clothes, assistive technologies, and a host of other consumer goods (Ritchie & Blanck, 2003). Internet access has been shown to improve how individuals with disabilities evaluate their levels and quality of communication with others and their sense of independence and self-confidence (Bradley & Poppen, 2003). In Turkey, however, this potential has not been fulfilled as only 5% of the disabled are internet users (DPT, 2011). We need to go beyond mere descriptive statistics to control for other variables such as education and employment to understand what really holds the disabled back from the virtual world. In addition to socio-economic factors, the lack of disabled-friendly web sites and applications may also be reasons that discourage the disabled from being part of the online world. For example, only 17.9% of e-government sites that provide public services have special accessibility tools for the disabled (DPT, 2011, p. 86).

In short, Turkey has significant inequalities in internet use based on age, gender, geography (both rural/urban and ethnic) and disability, and each of these disadvantaged demographic groups deserves special attention and specific policies. Some members of these groups may benefit from simple technical solutions such as the provision of free or cheaper access to the internet, whereas structural inequalities are harder to overcome. The next section reviews extant policies and projects that target digital exclusion in Turkey.

4. Digital divide policies in Turkey

Before discussing digital divide policies in Turkey, it is necessary to understand the development of Turkey's Information Society strategies and developments in regard to e-government. The first Turkish initiatives towards national transformation into an 'Information Society' gained momentum in the early 2000s as part of Turkey's involvement in the 'eEurope+ Initiative,' which was laid out for European Union (EU) candidate countries in 2001. The 'e-Transformation Turkey Project' was launched in 2003 and became the umbrella project under which all the individual studies carried out in the country have been gathered. The

[3] Areas that fall outside settlements with a population of 20 thousand or more are defined as "rural areas."

[4] Istanbul is known to be home to the largest number of Kurds in Turkey. The situation in primary schools is similar and Istanbul, Antalya, Şanlıurfa, Bursa and Gaziantep are the cities with highest number of computer per pupil (DPT, 2011: 39–40). These cities also lag behind the others in terms of number of teachers per computer.

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project aimed to facilitate the transformation of Turkey into an 'Information Society' having a harmonious and integrated structure. The State Planning Organization (particularly the Information Society Department) and the e-Transformation Turkey Executive Board were assigned coordinating roles in the project, with the public and private sectors and NGOs also participating.

Following the inception of the e-Transformation Turkey Project, two action plans covering the periods 2003–2004 and 2005 were launched and implemented. In conjunction with the short-term targets of those plans, an initiative for the preparation of an Information Society Strategy covering the period 2006–2010 began in 2005 in an attempt to enable Turkish people to effectively benefit from ICT and to identify the mid and long-term strategies and targets necessary for the realization of the transformation. The Information Society Strategy and its appended Action Plan became the basic reference documents for the following five-year period. These documents determined the fundamental strategic priorities that ranged from social transformation and ICT adoption by businesses to citizen-focused service transformation and the creation of a globally competitive IT sector. The Information Society Strategy set the target of 70% online delivery of public services by 2010. Another of its aims was enabling citizens and enterprises to access any information needed from an e-government portal. This portal was launched at the end of 2008. Although the target of 70% was not met and the take up of the government portal took a long time, since 2003 various e-government applications, such as the Central Population Management System (MERNIS), the Tax Office Automation Project (VEDOP) and the National Judicial Network Project (UYAP), have been enforced for the electronic delivery of public services. The e-government portal became a popular point of service delivery after the inclusion of a number of high-volume services such as on-line social security and land registry applications. The number of registered users of the e-government services increased to more than seven million by May 2011 (DPT, 2011, p. 77). It is possible to argue that Turkey made some progress not only in internet access and use but also in governmental use of ICTs, which is exemplified by the emergence of various e-government applications. Despite this expansion in the availability and use of on-line government services, significant groups of people remain excluded from the set of those benefiting from these developments. As Helbig, Gil-García, and Ferro (2009) argues using sophisticated information technologies in government has little social value if citizens are not able to use services.

Awareness of this led to the introduction of the digital divide being listed as one of the priority areas and challenges in the Information Society Strategy in 2006. Similar to other developing countries, there has been a strong economic motivation behind Turkey's policies since Information and Communications are considered vital sectors in the goal of achieving global economic competitiveness. Social inclusion has only been mentioned in relevant official documents as a secondary goal, and the fact that Information Society Directorate operates as part of the Ministry of *Development* is illustrative of this attitude. The policies and projects addressing the digital divide in Turkey can be analyzed under two categories: 1 — access-oriented policies and projects aiming at providing free or cheap access to ICTs and 2 — policies and projects focusing on increasing the population's ICT literacy and skills.

4.1. Policies and projects emphasizing access to ICTs

Inequalities in access to the internet have been perceived as the most important dimensions of the digital divide by policy makers and academics alike, despite counter arguments highlighting the significance of deeper social inequalities (Kvasny & Keil, 2006; Mossberger, Tolbert, & Stansbury, 2003; Servon, 2002; Stevenson, 2009). As a result, projects aiming at the provision of cheaper or free access to the internet have been popular policy approaches in many countries (for analysis of these projects, see Bar & Park, 2006; Kvasny & Keil, 2006; Strover, 2005; Yildiz, Kaya Bensghir, & Cankaya, 2005). An analysis of the cost of internet access in OECD countries demonstrates that internet access is more expensive in Turkey than other countries with similar purchasing power (OECD, 2011). Cost as an important barrier to internet access had been acknowledged by the State Planning Organization, and one of the goals stated in the subsequent Information Society Strategy document (published in 2006) was reducing the monthly broadband access costs as a percent of per capital income from 5.4% in 2006 to 2% by the end of 2010. Although this target was almost realized (2.2% by the end of 2010), the monthly cost of broadband access is still higher than the OECD average. Of course, monthly payments are only one aspect of total connectivity costs, which include computer hardware and software.[5]

Despite recognition that high costs are an important barrier to the internet, in particular, and the information society, in general, the Turkish government did not resort to interventionist policies in reducing prices. In fact, it is expected that increased competition would cause broadband access to naturally fall. Several steps have been taken to liberalize the Telecommunications sector, especially since the establishment of the Telecommunications Authority in 2000, and the opening of the sector to competition at the beginning of 2004. Despite these efforts, effective competition has not yet established in many service and infrastructure areas, and prices remain high. This is partly due to the relatively high tax imposed on all telecoms services, including the internet. With the introduction of the 2005 Universal Service Law, telecommunications companies were required to contribute to a fund which is used to provide universal service, including that of the internet, throughout the country irrespective of profitability. However, there has been criticism that the Universal Service Fund has not been used appropriately and the collected funds are spent for other purposes (Atalay, 2011; Aydin, Okcu, & Aydin, 2006; Salman, 2010; Yildiz, 2010).[6] Establishing a more competitive market may have contributed to a reduction in prices, yet it has not led to universal access and the digital divide continues to be a significant problem.

The current Justice and Development Party government has focused on increasing access to ICTs, especially via schools and other public access points. The emphasis on increasing access to ICTs is clearly visible in the program of the current government, which has pledged to reach the target of 15 million broadband subscribers by 2015, up from 8.5 million in 2010 (Prime Ministry of Turkey, 2011b). The same document also tells us that 844,000 computers have been installed in schools around the country since 2002, and that 97% of schools have high-speed connections. The main ongoing ICT project directed towards Primary and Secondary education is called the 'Movement for Enhancing Opportunities and Improving Technology' (the FATIH Project) and aims to install touch-screen smart boards in the nation's classrooms and to equip every student with a Tablet computer. Largely as a consequence of this project, 43% of all public ICT investment in 2011 is channeled through the Ministry of Education (DPT, 2011, p. 75).

It is possible to argue that, so far, national policy in Turkey has emphasized internet connections for schools and public access points, such as libraries, over provision of more affordable access in homes. As a result of this, at least 1850 Public Internet Access Points (PIAP),

[5] Pardus, a Linux-based open source software in Turkish was developed under the Scientific and Technological Research Council of Turkey (TÜBİTAK) with the aim of reducing costs and dependency on multinational software corporations. Although there were suggestions about making Pardus the main software of the Fatih Project, this was not realized and it is expected that Microsoft will provide the software infrastructure of this project. As an unexpected move, the Pardus project team announced the end of its 2011 version after many of the team members left the project. The future of the project is currently not clear.

[6] According to news, the taxes have been used for other purposes rather than building universal service infrastructure in rural areas (Radikal, 2010). There are claims that some of the budget was spent to build computer infrastructure in schools or for other purposes which are out of the scope of the Fund (Salman, 2010). Recently, three mobile operators of Turkey have been involved in a project to provide service to areas with a population less than 500 with the support of this Fund.

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designed to provide ICT access and competency to citizens, have been installed by the Ministry of Education, partly with funding from the Universal Service Fund. In addition, around 150 access points have been provided by local authorities, and 950 'Internet Houses' (outlined below) have been opened by Turk Telecom (DPT, 2011). Nearly twenty thousand private internet cafes are spread all across the country, providing online services for a small fee (Binark, Bayraktutan Sutcu, & Bucakci, 2009; Yildiz et al., 2005). Since the turn of the century, internet cafes have also enabled many Turkish people to have their first encounters with the internet and to have some kind of online experience.

Among the initiatives providing free internet access, the Turk Telecom's 'Internet Houses' Project has provided an Internet House in every local district in the country. Each House has approximately 20 computers with a free broadband internet service. Another form of PIAP is provided by local councils, with the largest number being supplied by the Istanbul Metropolitan Municipality (the Belnet project). PIAPs built and managed by the Ministry of Education constitute by far the greatest number of public access points, yet they have experienced significant effectiveness issues. The PIAPs established in schools have not been effectively utilized due to factors including the limited hours schools are open, a lack of staff to provide training to potential users and, a lack of public notices making people aware of their existence. PIAPs have also been installed at some military barracks to provide basic ICT skills to those who are fulfilling their compulsory military service duties.

An analysis of user profiles of PIAPs shows that these access points have been more successful in attracting some groups than others. A study of Belnet users, for example, reveals that 95% are between the ages of 10 and 18 (Edmer, 2009 91). PIAPs installed by the Ministry of Education naturally target children and youth since they are generally located on school grounds. There is a clear bias towards the young and so the elderly are almost completely excluded from such access projects. Likewise, female use of PIAPs is also very limited and the Belnet survey in Istanbul demonstrates that 70% of users are men. Private internet cafes are also places where males predominate (Binark et al., 2009). These figures point to the need to make the PIAPs more accessible to women, who are clearly more disadvantaged in terms of regular use of the internet. While PIAPs are regarded as a useful way of combating the digital divide in the rural areas of many countries, almost all the PIAPs in Turkey are located in urban settings (Edmer, 2009, p. 121). Only internet cafes operate as public access points in both urban and rural areas. This undermines Turkey's efforts at reducing the digital divide and transforming itself into an 'Information Society.' It is rural residents who are most disadvantaged with respect to income, educational opportunities and, technological infrastructure, as well as by cultural barriers to technology usage. The current PIAP policy favoring urban areas can only deepen this divide.

From an examination of the services offered at the PIAPs, it is clear that only a very limited set of services is available. These include e-mail and internet services, support for school work, basic ICT education, and specific programs for women (Edmer, 2009). More advanced services such as e-government and e-trade applications are not accessible. Internet cafes and Belnet houses also offer quite basic office services such as copying, printing and scanning. Families without a computer or the internet at home can and do benefit from these access points to help their children keep up with homework, so it seems that PIAPs do perform their function in delivering some basic IT needs such as school work or e-mailing. However, they are far from a substitute for home access, which would provide for a larger set of uses such as e-government applications or online participation in political processes. The installation of PIAPs as part of various projects has contributed to an increasing number of people who have had some experience online, but most frequent internet usage occurs at home and use in places other than home or work is often intermittent (Mossberger et al., 2008).

As seen from a quick survey of these projects, PIAPs in Turkey are fragmented in their management, purpose and target demographics. Due to a lack of coordination between their managing institutions, even their exact number is not known (Aydin, 2011). A new program is being prepared by the Information Society Directorate, which is designed to address these points more effectively through better coordination.[7] There are also suggestions that a coordinating body be established to plan the creation of a network of PIAPs by the institutions charged with PIAP management and operations (Arifoglu, Er, Afacan, & Asik, 2009, p. 8). The difficulties with the effectiveness of the PIAPs point to the critical role of social structures in shaping how technology is diffused and the corresponding importance of social analysis and goals in the planning of ICT development projects (Warschauer, 2003b, p. 210).

Obviously, digital exclusion is not only about the lack of access due to cost; some segments of society, such as the disabled, are excluded for other reasons. Their inclusion will require the development of a different set of policies and projects. Increasing, the accessibility of e-government applications, including basic web services, may be a good starting point. In an e-government survey of 2950 Turkish municipalities, 85% of the responses indicated that those councils have no specific measures in place to contribute to the wider accessibility of e-government applications. Less than 10%, for example, have specific applications provided for disabled residents (Ministry of the Interior, 2011, p: 24). Two notable applications targeting the ICT needs of the disabled are worth mentioning at this point. The first one is the internet cafe for the Disabled in Ankara, managed by the metropolitan municipality. The second is a regulation passed at the beginning of 2012 enabling disabled Turk Telekom customers to receive internet services with 25% discount. The Ankara Metropolitan Municipality has also been offering internet services for the elderly at a special information center since 2007.

Although there are several projects targeting increased physical access to the internet, there is a lack of those that specifically target the most disadvantaged groups in Turkish society, such as women, the elderly, rural residents, and the disabled. Therefore, the user profile of PIAPs consists of what would be expected. While the problem of high costs is something that can be tackled relatively quickly through the development of infrastructure and measures such as tax reduction and increased public access points, developing more inclusive policies requires a more innovative approach and a mindset change by the policy makers. It is possible to argue that certain disparities will not simply be erased by cheaper or even free access to technology since they involve more fundamental educational gaps than mere affordability. The next section of this paper considers the policies and projects that could address these gaps.

4.2. Policies and projects targeting ICT literacy and skills

The digital divide literature and policies increasingly focus on inequality concerns and factors other than access (Barzilai-Nahon, 2006; DiMaggio & Hargitai, 2001; Warschauer, 2003a). As more people start using the internet for communication and information retrieval, it becomes less useful to maintain a narrow focus on binary classifications of who is online when discussing questions of inequality on the internet (DiMaggio & Hargittai, 2001). Therefore, a second generation of digital divide literature that focuses on inequalities in ICT skills and literacy has arisen. The ability to find different forms of information online allows people to use the medium to maximize their benefit. If users give up surfing in frustration and confusion, then the mere fact of having web access does not mean that the digital divide has been resolved because a division remains for many in their capacity to effectively utilize the internet (Hargittai, 2002). In developed countries, policy initiatives have addressed issues related to skills and literacy once a significant improvement in access is achieved. In developing countries, like Turkey, this does not need to be the case; access and skills-oriented policies can

[7] The Integrated Program to Facilitate Social Transformation.

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be simultaneously designed and implemented to produce a leapfrog effect.

In Turkey, there is an emerging awareness of the multi-faceted nature of the digital divide and the current government's program pledges that "ICT literacy will be widened and the e-transformation of individuals will be encouraged through various programs" (Prime Ministry of Turkey, 2011b). Among these programs, the Fatih Project is most significant in terms of its budget and targets. As part of the project, it is proposed that 620,000 classes be equipped with projectors and laptops, and that these be connected to the internet. Each school will have at least one IT class equipped with touch-screen smart boards, a multi-purpose copier/printer, a camera, as well as a projector, a laptop and an internet connection. The project has five components, including provision of infrastructure for hardware and software, IT training for teachers, development of new digital content and effective use of ICT in the classroom. The overseer of the project is the Ministry of Education, with the Ministry of Transport also involved in matters related to technological infrastructure. The whole project is planned for completion by the end of 2013 and the first phase of the project was marked by giving out of 12,000 Tablets to 52 schools across the country in February 2012. It is estimated that 12 million students will be provided with Tablet computers as part of the project, which is regarded as not only an educational project, but also an opportunity for boosting economic growth and employment. The government has made it clear that the suppliers of IT equipment to the project are required to source their products in Turkey. This is not surprising when we take into consideration the development-oriented policies of the governing Justice and Development Party.

Largely as a result of the Fatih project, 43% of Turkey's 2011 ICT budget came through the Ministry of Education. Moreover, Education, which had ranked second after Defense in budget allocations in previous years, overtook Defense to take the prime position in 2010. A project as huge as Fatih in terms of budget and targets inevitably has many risks, and the literature is strewn with examples of million-dollar projects which failed in their objectives due to a lack of planning (Warschauer, 2003b). A technology-oriented approach that neglects teacher perspectives and the organizational barriers within schools may put the project at risk (Kayaduman, Sirakaya, & Seferoglu, 2011). There is also the danger of the project being manipulated by major IT corporations excited by the scale of the plan and the potential profit they may extract from it. The rapid and continuous pace of ICT innovations, which makes today's technologies obsolete tomorrow, is another challenge facing policy makers. A measure already taken against such potential risks is to develop and test pilot applications in selected schools before their release for wider use in the general education system. Despite the potential risks, the Fatih Project may prove to be an important step in increasing both ICT access and literacy in Turkish society. In order to make the project work, sufficient attention must be paid to the human social systems surrounding the technologies (Warschauer, 2003b).

Incorporating ICTs into the formal education system may be useful in creating a new ICT-literate generation. Most school-age children will use a computer at school and, increasingly, the internet will be embedded in the curriculum. However, there is also a need to provide an ICT education to those who are outside the formal education system, either because they have completed their educations or because they are not enrolled in a school. The existence of ICT skills programs beyond formal education is vital in reaching out to disadvantaged groups, such as non-working women, the elderly, the disabled and those living in remote parts of the country. The PIAPs discussed in the previous section as internet access points are also supposed to provide basic ICT education. However, there are no available statistics concerning how many people have received training through PIAPs operated by the Ministry of Education, the local authorities and various civil society organizations. The most definite information about the training courses provided in the PIAPs established by the Ministry of Education is on the PIAPs set up in military barracks. From this, it seems that basic ICT courses are being incorporated into Turkey's compulsory military service (DPT, 2010, p. 24).

There have also been initiatives mounted by civil society organizations, municipalities and businesses to develop and implement programs for building ICT literacy. A significant example is the "Everyone Will Have Computer Skills" project, which aims to increase the ICT skills of young people through the European Computer Driving License training program (ECDL). The primary demographic targeted by the project is disadvantaged young people under the age of 30. Women are also given special emphasis by the project. It not only aims to close the digital gap, but also hopes to fill the employment gap created by the increasing use of ICTs. By 2011, more than 800 young people had volunteered to provide training in basic computing and internet skills to their peers. This enabled the program to reach out to 87,000 people. This particular project brought together the UNDP, Youth for Habitat, the State Planning Organization, a multinational software company and several municipalities, and has also been a model of working in partnership to disseminate ICT skills and capacity building.

ICT skills cannot be considered separately from general competencies. Educational discrepancies in other fields are also barriers to the effective use of ICT skills. For example, those who are fluent in English have an advantage in searching for and identifying a broader spectrum of content than those who solely speak Turkish. Consequently, the digital divide policies implemented need to be supported by the development of useful digital content in Turkish. At this point, it is necessary to point out the linguistic divide that is effecting the Kurdish population negatively. In Turkey, the use of languages other than Turkish (mainly Kurdish) has been allowed recently with a change in law, but this change has not been reflected in governmental websites.

The quality of education varies considerably across Turkey's regions due to local conditions that range from inhospitable geography to a lack of physical security. In impoverished regions, fewer resources are devoted to education, and these parts of the country are already disadvantaged by a shortage of teachers, inflated class sizes and poor infrastructure. Even if the Fatih Project equips these schools with the latest technologies, it is doubtful that students will gain the targeted ICT skills while they labor in the shadow of these more general problems.

There are also concerns related to potential filtering and censorship practices in relation to access and content of this education project. Recent literature on democracy in Turkey raises concerns about emerging authoritarian tendencies, pointing to recent practices against journalists as well as internet censorship, filtering and surveillance mechanisms (Akdeniz, 2011; Akdeniz & Altiparmak, 2008; Cengiz & Hoffman, 2012). In 2011, the Information and Communication Technologies Authority (BTK) decided to subject internet users to a filtering system to protect children and families from harmful digital content. Following strong criticisms, the scheme became voluntary. However critics claim that this may not only lead to systematic censorship but it also leads to the imposition of an unvarying model of the family and a homogeneous set of moral values. Regardless of the "optional nature of the system," the BTK will be controlling the criteria for filtering and ISPs are compelled to offer the system to their users (Akdeniz, 2011). This kind of practice creates a trust gap and raises concerns about potential similar applications with regard to the Fatih Project.

The fact that the Tablets are not equipped with 3G internet connection (they are connected to the internet through Wi-Fi at schools), contrary to expectations, has also attracted criticisms from students and teachers at the initial phase of the project. In this way, many students miss the opportunity of using the Tablets in innovative ways and getting their full benefits in home settings. The distribution of Tablet computers with internet connections could have had a particularly revolutionary impact by bringing thousands of households and families on board along with the students.

In short, despite the existence of several projects addressing the issues surrounding ICT skills, many of the resulting policies have failed to target the specifically disadvantaged citizen groups in ways that take some of the important differences between them into consideration. The main policy objective seems to be developing projects for

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school children through the formal education system. This policy approach fails to reach out to significantly excluded groups, particularly women, the elderly, rural residents, and the disabled. The ICT skills programs that offered to these groups are often rather narrowly conceived, and represent short-term, technology-centric solutions to a much deeper problem. Research from other countries has demonstrated that although such programs are beneficial in providing access and basic ICT skills, there is no mechanism for people to go on to the next step (Kvasny & Keil, 2006). This is probably the greatest challenge in redressing the digital divide in Turkey.

At present, the digital divide as a social and political issue is not a priority for the Turkish Government, as indicated by the lack of a national strategy on digital exclusion. This is not to say that all digital divide projects should be implemented by the central government. In fact, analysis of the policies and projects addressing digital divide in Turkey reveals a shortage of local initiatives, except for some IT literacy courses and access opportunities provided by municipalities. Local authorities have the advantage of recognizing local needs and opportunities and they can mobilize local resources in a better way. Local digital divide projects are also less risky due to their smaller scale. These authorities should be empowered financially and administratively to develop their own innovative projects to address exclusion of specific groups in their locality within the framework of a national strategy.

Finally, the use of mobile devices should also be employed to overcome digital inequalities. The high ratio of mobile phone ownership throughout the country (90.5%), and the relatively small difference between urban and rural areas (92.8% and 85%, respectively) is indicative of the prevalence of mobile phone ownership throughout the country, which offers a great opportunity for offering more services to citizens over mobile phones (DPT, 2011, p. 37). Taking into consideration their more equal distribution and relatively lower skills requirements and the inception of 3G mobile services in 2009, mobile phones can be used to reach out to certain disadvantaged groups, especially those in rural areas and among the less educated.

5. Conclusion

An analysis of digital exclusion in Turkey shows that digital disparities are interwoven with other social inequalities. This finding parallels the conclusions of previous research which suggests that digital exclusion can have a 'reinforcing' effect on social and/or economic inequalities, as those most in need of services and information online may well be the least likely to have access to them (Margetts, 2010). Our analysis also reveals that Turkey suffers patterns of digital exclusion similar to other countries with respect to age, gender, the urban–rural division and disability. However, the gender gap seems to be a more stubborn factor in Turkey, where women lag behind men across all age groups in terms of internet use. The divide between urban and rural residents is also a greater issue than it initially seems when it is combined with ethnicity. Large groups of people are excluded from having access to valuable information on health, education and other services in their own language since governmental websites are designed solely in Turkish. This linguistic divide reflects the heated debate on mother-tongue education, which occupies a large part of the constitutional change agenda in Turkey.

In developed countries, policy initiatives addressing issues related to skills and literacy were taken once a significant improvement in access was obtained. In developing countries like Turkey, this does not have to be the case, since access and skills-oriented policies can be coordinated to create a leapfrog effect. However, this opportunity is not being taken. Having considered the current range of policies targeting either ICT access or skills, it is possible to argue that techno-centric solutions with huge budgets monopolize the policy agenda at the expense of more sophisticated programs that take into account the social context of digital exclusion. At present, ICTs are perceived as central to Turkey's economic development and competitiveness in the global economy. The digital divide as a social and political issue is not a priority for the Turkish Government, as indicated by the lack of a national strategy on digital exclusion.

In a developing country like Turkey, where significant social and economic inequalities persist, it may seem like a 'luxury' to be concerned about the digital divide as a policy issue. We argue that internet use is integral to citizenship in the Information Age and this deserves special academic and policy attention. Rather than being a 'frill' that diverts attention from existing inequalities in society, the digital divide highlights and provides an opportunity for the development of policies that address them. Having said that, we should not lose sight of the fundamental issues of inequality and exclusion, which technology may not be capable of addressing.

Future research on the digital divide in Turkey would benefit from the collection of more comprehensive statistics on internet use that take into consideration other important variables such as income. More sophisticated multivariate regression analysis is needed in order to go beyond descriptive statistics to uncover the most important predictors of internet use. Likewise, in order to base studies of the digital divide within a more theoretical framework, future research may also need to explore the role of micro, meso and macro level factors that influence the digital divide. It is hoped that the preliminary analysis offered by this article will be a useful starting point for the design of both more effective and sophisticated digital inclusion policies and future academic research on digital divide in Turkey.

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