

Gender difference in the continuance intention to e-file income tax returns in Pakistan

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Abstract. This paper investigates the continuous usage intention of an e-government service from the digital divide perspective, particularly the gender differences. To find out whether the gender difference exists, the case of income tax e-filing service of Pakistan was taken, and the data was collected by means of an online survey from citizens who have previously used tax e-filing service (N = 401). The collected data was analyzed using Welch's *t*-test in IBM SPSS v.20. The findings revealed that there is a statistically significant difference between men and women with regards to continuance intention to use income tax e-filing service. Specifically, men are more likely to continue usage than women probably because women are more influenced by their social circle and the ease of use of system while men majorly prefer to use a system for its functional benefits and/or performance. This study contributes to the body of knowledge as the research in the area of gender gap in the e-government usage particularly in a developing country context is scarce. Finally, the results are discussed in the light of the previous research and some practical implications are also provided.

Keywords: e-government, gender gap, digital divide, tax e-filing, Pakistan

Key points for practitioners:

- The government institutions in developing countries like Pakistan can address the existing gender gap in terms of e-government service usage by understanding different needs of both genders.
- The developers of e-government websites and/or applications must incorporate features appealing to both genders to ensure equal participation/usage
- The tax/revenue collecting agencies of developing countries like Pakistan should raise awareness of the benefits of paying taxes to ensure greater usage of tax e-filing services.

1. Introduction

E-governance is being successfully implemented and utilized in various countries around the globe which is not surprising owing to the variety of benefits that it offers to the governments and particularly the citizens (Chatfield & Migdadi, 2015; Floropoulos et al., 2010). However, the success of its implementation has not been as prominently evident in the developing countries as in the developed ones (Chaouali et al., 2016). Many researchers have and are still looking into the factors that act as the obstructions towards

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e-government adoption and usage in the developing world. Among the many identified citizen-level factors, the differences between groups of citizens in terms of demographic attributes such as gender, age, education, and other socioeconomic factors have also been investigated as reasons for low e-government adoption in developing countries (Belanger & Carter, 2009; Gupta et al., 2016; Hung et al., 2006; Kose, 2019; Reddick, 2005). This means that the e-government services are not adopted in a similar way by citizens belonging to different groups of a demographic attribute. The present study focuses on the differences in the usage of e-government services in Pakistan between the two groups of gender as only a few studies have investigated the issue of the existence of gender gap in the developing countries which could impede the acceptance, adoption and growth of e-government services in such countries (Alkhattabi et al., 2012; Gkorezis et al., 2012). Also, the previous studies investigating gender gap in terms of e-government usage have reported mixed findings with some of them reporting no significant difference between gender groups (Belanger & Carter, 2009; Colesca & Dobrica, 2008; Reddick, 2005; Moreno et al., 2013; Taipale, 2013) while others reporting that men are more frequent users of e-government services (Akman et al., 2005; Choudrie & Dwivedi, 2005; Venkatesh et al., 2014). Therefore, it is significant to find out whether the gender gap exists in e-government usage in Pakistan where the research in the area of e-government in general and gender gap in particular is scarce (Akram et al., 2019). To investigate the matter, the case of income tax e-filing service of Federal Board of Revenue (FBR), the main revenue collection agency of Pakistan was selected as it is one of the most important e-government services offered in Pakistan. The number of income tax filers for the last five years (2016–2020) as reported by FBR is presented in Table 1. It shows that the annual increase in the number of filers is quite low and fluctuating. The number has even reduced for the tax year/fiscal year 2020 with 1.8 million income tax return filers which falls short by 1.1 million or 37.93% from the previous year since the number of income tax return filers was 2.9 million in the tax year 2019. When compared with total population in the country i.e. around 220 million people, the situation appears even more dismal. In a news report, Khan (2020) states that “in India, the ratio of return filing to the population is 5 pc, 58 pc in France and 80 pc in Canada. In Pakistan, it stood at nearly 0.02 pc”, which highlights the extremely low turnaround and thus the importance and urgency of the investigation of this matter by both researchers as well as the government entities of Pakistan. The inconsistent and/or negative growth rate in the number of filers in Pakistan means that the FBR’s tax e-filing service is not being used consistently and continuously by citizens of Pakistan. As stated above, overall the number of taxpayers in Pakistan has been quite small compared to the population of the country i.e. less than 1% of the population of Pakistan constitutes the active taxpayer group, and even in that majority are men (FBR, 2020), which indicates towards the gender gap in this field. Therefore, the present study aims to investigate continuance intention of citizens to use FBR’s income tax e-filing service in Pakistan with special reference to the existence of gender difference in the usage.

Table 1
Number of income tax return filers in Pakistan 2016–2020 (in millions)

Fiscal year (FY)	Number of return filers	% increase/decrease in number of return filers
2016	1.5 m	–
2017	1.9 m	26.67%
2018	2.2 m	15.79%
2019	2.9 m	31.82%
2020	1.8 m	–37.93%

Source: Khan (2020a, b).

2. Literature review

This section provides a review of the past literature regarding the gender gap in the e-government continuous usage intention. Research indicates that despite the efforts by the countries around the globe to introduce e-government services, the acceptance rate has been lower than expected (Urbina & Abe, 2017). One of the reasons for low acceptance highlighted by the past studies is the existence of digital divide. The term digital divide encompasses the inequality between/among different demographic and/or socioeconomic group(s) in terms of access, availability, usage capability, skills, and the actual usage of internet and communication technologies (ICTs) (Fuchs, 2008; Wilson, 2006). Previous research has majorly explored digital divide between countries e.g. developed vs. developing countries (Okunola et al., 2017). Developing countries usually face challenges in the development of the infrastructure of Internet and Communication Technologies (ICTs) (Vu, 2011) and therefore these countries are more prone to digital divide (Banihashemi & Rejaei, 2015). Lately, user preferences and interests have also been recognized as potential sources of digital divide (Choi & Park, 2013). Much of the previous research about digital divide was focused on the differences in general access of internet service and its usage (Hsieh et al., 2008). However, there have been only a few studies discussing the digital divide in the field of e-government services from the gender perspective, particularly from the developing countries context (Antonio & Tuffley, 2014). Gender gap is the difference in the acceptance of ICTs such as e-government services between gender groups. It is generally reported that women are less frequent users of ICTs than men especially in the developing countries (Antonio & Tuffley, 2014). The argument of gender gap in e-government usage is also based on the idea that men and women have different interests and preferences for the overall internet usage i.e. men prefer to use the internet for productive tasks, to search for news, exploring e-commerce websites or for entertainment purposes while women generally prefer to use internet for communication, socialization, or for seeking health related information (Jackson et al., 2001; Kennedy et al., 2003) and thus it applies to the e-government usage behavior as well where men are generally reported to be more frequent users of e-government services than women (Choi & Park, 2013; Goldfarb & Prince, 2008). Based on the grounds of interests and preferences, Choi and Park (2013) argues that for e-government services, women are more likely to be frequent users of services related to healthcare and/or education than men.

There are very few studies which have investigated the e-government adoption and usage intention from gender perspective and even those report mixed findings (Akman et al., 2005; Belanger & Carter, 2009; Choudrie & Dwivedi, 2005; Colesca & Dobrica, 2008; Reddick, 2005; Moreno et al., 2013; Taipale, 2013; Venkatesh et al., 2014). Akman et al. (2005) reported that gender gap in e-government usage was prevalent in Turkey. Similarly, Choudrie and Dwivedi (2005) found that men are more frequent users of e-government services than women in UK. Contrary to this Moreno et al. (2013) reported that e-government usage was similar between both genders in Spain. In the same line, Taipale (2013) also reported that there was no gender difference in the e-government usage in Finland. Similarly, Gupta, Dasgupta, and Gupta (2008) did not find any gender difference in the e-government service usage by citizens in Jordan. Choi and Park (2013) indicate that in Korea there is no gender gap when it comes to the access to e-government services, however gender gap is prevalent in the usage of these services. Owing to the mixed results reported by the studies mentioned above and the prevailing gap in the body of knowledge regarding the existence and nature of digital divide in e-government services context in the developing countries (Al-Shboul et al., 2014; Okunola et al., 2017). Particularly the existence of gender gap (Alkhatabi et al., 2012; Gkorezis et al., 2012), it becomes even more significant to investigate this matter in a developing country like Pakistan, which will contribute to the digital divide (specifically

gender gap) literature in e-government context from the perspective of developing countries. The Global Gender Gap Report 2020 issued by World Economic Forum (WEF) states that Pakistan ranks the lowest (7th) within the South Asian region and third last (151st) among 153 total countries with a gender gap index score of 0.564. According to subindex rankings of 153 countries, Pakistan stands at 150th rank in terms of gender gap in economic participation and opportunity with an index score of 0.327, 143rd rank in terms of gender gap in educational attainment with an index score of 0.823, 149th rank in terms of gender gap in health and survival with an index score of 0.946, 93rd rank in terms of gender gap in political empowerment with an index score of 0.159. This means that millions of women in Pakistan still lag behind men in terms of economic empowerment including labor force participation and employment in leadership roles, access to health facilities, and attainment of primary, secondary and higher education (WEF, 2020) clearly indicating towards the generally prevailing gender gap in the country. Moreover, out of the total population of the developing countries like Pakistan, the proportion of women who are part of the labor force and earn income above the minimum threshold amount liable to income tax is generally very low (Joshi, 2017) since they do not get equal opportunities to get education and high-paying employment and are thus economically dependent on their male counterparts (Choudhry et al., 2019). Joshi (2017) also mentions that “women tend to perceive tax rates and administration as a greater burden than men do, and are usually less confident in dealing with tax officials. Combined with low levels of economic literacy prevalent in the informal economy, this impacts their ability to understand, engage with and benefit from revenue systems”. Therefore, owing to discussion about gender gap above the present study while taking the case of tax e-filing service in Pakistan, aims to find out the gender difference in the continuance usage intention and thus proposes the hypothesis stated below.

H1: There is a significant difference in the continuance usage intention of income tax e-filing between men and women in Pakistan

3. Methods

This section provides details about the research design and methods employed in the study. The present study is an empirical investigation employing the cross-sectional survey method. The survey data was collected from a total of 401 citizens of Pakistan who had experience of using FBR’s income tax e-filing service. The sample included professionals from government sector, academia and business professionals from multiple chambers of commerce and industry of Pakistan. The final sample included more males i.e. 76.1% (N = 305) than females i.e. 23.9% (N = 96) which is consistent with the gender gap found in the population i.e. in the active taxpayers list of FBR which constituted of 83.57% men and 16.43% women.¹ The descriptive analysis of the study sample by gender has been provided in Table 2 which shows that majority of the female participants of the study belonged to the age range of 28 to 39 years (60.4%) whereas the majority of the male participants belonged to the age range of 34 and above (73.8%). Also, majority of both male and female respondents had an education level of masters/post-graduation and above (84.6% and 74.9% respectively). The data collection was conducted by the researchers via WhatsApp on convenience sampling basis during the time duration of June to August 2020 by means

¹The population gender data was extracted with the help of National Identity Card (CNIC) number given in the Active Taxpayer List (ATL) found on FBR website as per February 2021. The odd CNIC numbers are assigned to males and the even ones are assigned to females which helped in calculating the total number as well as the percentages of the male vs. female taxpayers.

Table 2
Descriptive analysis of the study sample (by gender)

Characteristic	Gender		Total
	Female	Male	
Age			
18–22	5 (5.2%)	7 (2.3%)	12 (3%)
23–27	16 (16.7%)	18 (5.9%)	34 (8.5%)
28–33	25 (26%)	55 (18%)	8 (20%)
34–39	33 (34.4%)	70 (23%)	103 (25.7%)
40–45	10 (10.4%)	60 (19.7%)	70 (17.5%)
46 and above	7 (7.3%)	95 (31.1%)	102 (25.4%)
Education level			
High school	3 (3.1%)	6 (1.9%)	9 (2.2%)
Bachelors/graduate	24 (25%)	41 (13.4%)	65 (16.2%)
Masters/post-graduate and above	69 (71.9%)	258 (84.6%)	327 (81.5%)
Total	96 (100%)	305 (100%)	401 (100%)

Table 3
Measurement items and factor loadings

Items	Loadings
1. I intend to continue using FBR's tax e-filing system for my income tax returns.	0.860
2. My intention is to continue with FBR's tax e-filing rather than to stop e-filing.	0.851
3. I do not intend to use FBR's tax e-filing method for my income tax return next year.	0.758
4. I will continue using FBR's tax e-filing method for my income tax return in future.	0.878
5. I would like to recommend FBR's tax e-filing system to my relatives and friends.	0.780

of an online channel (Google Forms)² and it was then analyzed using IBM SPSS version 20. The items measuring the construct of continuance intention of citizens to use income tax e-filing service were adapted from Veeramootoo et al. (2018) and Akram et al. (2019) and were modified to match the context e.g. in all statements the words “FBR's tax e-filing system/method” was added to specify the context. Also, since there are no alternative means to file income tax returns in Pakistan the statements from the original sources asking about the preference/choice to e-file income tax returns over the alternative means were not added. Moreover, one of the items was negatively phrased (item no. 3 in Table 3) to reduce the response set bias i.e. acquiescence bias (Cronbach, 1950). Table 3 presents the statements of the items. To measure the items, a five-point Likert scale was used which was coded in SPSS from 1 = “strongly disagree” to 5 = “strongly agree”. Gender was coded as 1 = “female” and 2 = “male”.

The gender difference for continuance intention of citizens to use income tax e-filing service was tested by employing Welch's t-test as it has no strict assumptions regarding the existence of homogeneity of variance and the equality of sample sizes across groups (Delacre et al., 2017) which were absent in the data of present study.

4. Analysis

This section provides the results of the test of gender difference in continuance intention of citizens to

²The survey was originally sent to 1200 citizens of Pakistan yielding a response rate of 33.41%. All questions were marked as compulsory/required in the Google Form which did not allow the respondent to submit the survey response unless all questions were answered, thus leading to no missing values in the data. The link to the online survey is as follows: <https://forms.gle/smYTtrUeZ3YQrwQK8>.

use income tax e-filing service. However, before proceeding the reliability and validity of the adapted measurement tool was assessed.

4.1. Reliability and validity of the measurement tool

To check the reliability of the five items measuring the continuance intention of citizens to use income tax e-filing service, the test of internal consistency i.e. Cronbach's alpha was used. The results in Table 4 shows that the value of Cronbach's alpha (α) is greater than 0.7 which is the generally accepted threshold value (Hair et al., 2019), thus confirming that the tool is internally consistent and reliable. The face and content validity of the tool was assessed prior to the collection of data by consulting with and taking suggestions from academics of public administration. Moreover, as can be seen in Table 3, the factor loadings of all five items were significant and above the threshold value of 0.70 which ensures the convergent validity of the tool (Anderson & Gerbing, 1988).

Table 4
Reliability analysis

Construct	Cronbach's alpha (no. of items)
Continuance intention to e-file income tax returns	0.858 (5)

4.2. Data analysis

As mentioned above, Welch's t-test was used to test the gender difference for continuance intention of using income tax e-filing due to its lenient assumptions. The results of t-test revealed that there was a statistically significant difference between males and females in terms of their continuance intention ($t = -3.727$, $df = 166.96$, $p < 0.01$). The male taxpayers showed a higher mean value ($M = 3.91$) for continuance intention to e-file income tax returns as compared to female taxpayers ($M = 3.64$) which supports the hypothesis of the study. The results are presented in Table 5.

Table 5
Welch's ttest

<i>t</i>	df	Sig. (<i>p</i> value)	Mean difference	Group statistics			
				Gender	N	Mean	Standard deviation
-3.727	166.965	0.000	-0.26433	Female	96	3.6458	0.59788
				Male	305	3.9102	0.63136

5. Discussion and conclusion

This section provides the discussion of the findings in the light of prior literature and it also points out some of the limitations of the present study and directions for future studies.

5.1. Discussion of findings

The findings show that the gender gap exists in Pakistan in terms of usage intention of e-government service such as tax e-filing. Even if the service is used at least once by the female citizens, they are still reluctant to continue its usage in the future. This may possibly be due to a number of factors such as accessibility to the internet, complexity of website layout and design, low economic literacy, or the general

cultural tendency of women in Pakistan to leave the legal matters such as taxation to male members of the household due to patriarchal culture (Mustafa et al., 2019; Roomi & Parrott, 2008). Moreover, as Venkatesh et al. (2000) indicate the adoption and usage intention of women are more likely to be influenced by their social circle and the ease of the system usage. In contrast, men are generally more concerned with the output and performance of the service. Therefore, to attain equal adoption and usage of e-government services like tax e-filing, the government of Pakistan must ensure that the system is both efficient in terms of its performance as well as easy to navigate and use so that the preferences of both groups of gender are catered.

This study contributes to the literature regarding the existence of gender digital gap in developing countries like Pakistan by providing an empirical evidence which can be considered a stepping stone to further investigate the matter to find out the actual reasons and concerns which hinders women in countries like Pakistan to adopt and continue using e-government services like e-filing of income tax returns. Further, the government institutions in developing countries like Pakistan e.g. FBR should also take heed from the findings of studies like this to improve their e-service quality and to incorporate the features in their system in consideration to the gender gap prevalent in the country.

5.2. Limitations and future directions

The present study has studied the gender difference for continuance usage intention only. Future studies can investigate the difference in actual usage behavior or in the general attitude towards payment of taxes. The future studies can also explore the underlying reasons for the existence of the differences in the usage intention. Secondly, the sample in the present study was unequal in terms of gender which puts limitation to the use of statistical tests having strict assumptions. The future studies can investigate the gender difference by taking equal data from both groups of gender. Another limitation is that the sample of this study includes well-educated professionals only having the capability to complete online survey. Therefore, the sample of this study is not representative of all citizens of Pakistan. The digital divide (or the gender gap) may be even more evident in groups of citizens who belong to lower socio-economic bracket, are less educated or reside in rural areas of Pakistan, the sectors of population which are underrepresented in the present study. Also the future studies can look into gender gap by investigating and comparing the use of different e-government services such as those related to health and education. The study of this kind can provide evidence if the gender gap is greater/lower for different e-government services.

5.3. Conclusion

The present study provides empirical evidence regarding the existence of gender gap in the continuance usage intention of an e-government service i.e. income tax e-filing service in Pakistan. The findings show that men in Pakistan are more likely to continue the usage of tax e-filing service than women. This indicates that government of Pakistan needs to improve and upgrade the e-government services like tax e-filing by incorporating the preferences of both genders so that greater adoption and continuous usage of the service can be ensured. In Pakistan, the rate of tax e-filing in general is very low, and even from the small group of citizens who e-file their income tax returns the majority are men. Moreover, as per the findings of this study it is again men who are more likely to continue usage of this service. Therefore, government needs to encourage and attract more women to use tax e-filing service by means of awareness campaigns and/or making the system more convenient and easy to use (Venkatesh et al., 2000). The study contributes to the literature as research in the field of digital divide, particularly gender gap, in the e-government context is scarce especially in the developing countries like Pakistan.

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Conflict of interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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