Factors affecting e-government adoption in Pakistan: a citizen’s perspective

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Abstract

Purpose – The purpose of this paper is to explore the factors that enable end-user adoption of e-government services in Pakistan, where these facilities are at a rudimentary stage.

Design/methodology/approach – Following previous research on e-government services adoption, this study employs the Unified Theory of Acceptance and Use of Technology (UTAUT) model to examine the influential factors of the adoption and use of e-government services in Pakistan from a citizen perspective. An online survey was conducted and a statistical descriptive analysis was performed on the responses received from 115 Pakistani citizens.

Findings – In line with previous research, the findings show that performance expectancy, effort expectancy, facilitating conditions and social influence are the factors that affect the user’s adoption of e-government services in Pakistan. Furthermore, the results show that lack of awareness, user data privacy, lack of appropriate support and assistance hamper the process.

Practical implications – The findings are useful for policy-makers and decision-makers to develop a better understanding of citizens’ needs. The adopted model can be used as a guideline for the implementation of e-government services in Pakistan. This study suggests that government should run extensive advertising campaigns to ensure that people are aware of the services and use them. This implies that government should place emphasis on increasing awareness of the services, show the benefits of citizens, and encouraging confidence in the system.

Originality/value – This study is one of the few to examine what influences citizens adoption of e-government services in South Asia. This paper is the first step exploring end-user adoption of the e-government services of Pakistan using UTAUT model. Corresponding to previous research, this study enforces the significance of particular factors that need to be considered when the goal is to increase e-government services adoption in developing countries, particularly South Asian.

Keywords E-government, Adoption, E-government challenges, User studies, Developing countries, Pakistan, South Asia

Paper type Research paper

1. Introduction

The expansion of the internet and the advancement of information and communication technologies (ICT) offer new channels for governments to reach and serve their citizens. With the emergence of the e-government concept, public organisations around the world are moving away from the conventional form of government administration to electronic forms, because they realise the importance of making services more efficient and accessible (Kamal et al., 2009; Irani et al., 2007; Sarikas and Weerakkody, 2007). According to a United Nation (UN, 2012) survey, 190 governments around the world have web sites and use contemporary ICT for the delivery of services to their citizens. As people have become more internet-savvy, they are expecting higher standards of e-services from government agencies. A number of researchers (Gauld et al., 2010;
Irani et al., 2007) have noted that governments around the world are motivated in promoting interaction with citizens, because of the affordability and accessibility of ICT. E-government offers citizens certain advantages, such as transparency in the process of governance; cost and time savings through efficient services; simplification of procedures; improved office management; and friendly attitudes of personnel (Laudon and Laudon, 2009). While these services have developed internationally, challenges in their deployment and adoption are not uncommon. According to UN (2012) and other studies (Alshehri et al., 2012; Rehman et al., 2012; Gupta et al., 2008; Dwivedi and Irani, 2009; AlAwadhi and Morris, 2008; Carter and Weerakkody, 2008; Irani et al., 2007), the efforts of all countries, especially developing countries, are still affected by a lack of infrastructure, awareness, human resource capacity, technical skills, inexpensive technology, and effective government regulation.

When analysing the existing literature on e-government, two distinct research streams can be identified. The first is viewing e-government from the supply side (e.g. government infrastructure and policies) and the second from the demand side (i.e. citizens’ perspective). The emphasis of e-government research appears to be on the supply side (Reddick, 2005). Supply side research has investigated issues in e-government development and delivery (Gauld et al., 2010; Heeks and Bailur, 2007; Reddick, 2005) categorising countries in terms of technology or policy development (Gauld et al., 2010; Elsheikh et al., 2008), and development progress of national and local e-government services (Morris and Jae Moon, 2005). Furthermore, e-government studies have shown that a large segment of the published research has been conducted in developed countries, such as the USA, the UK, Australia, New Zealand and Korean (Gauld et al., 2010; Il et al., 2010; Schaupp et al., 2010; Wang and Shih, 2009; Carter and Weerakkody, 2008).

Even though earlier research focused mostly on the supply side, the demand side issues have begun to gain more attention. Some researchers (Verdegem and Verleye, 2009; Heeks and Bailur, 2007) have pointed out that e-government literature ignores the fact that human beings must to use these systems. According to Carter and Bélanger (2005), the success of e-government depends upon the citizen’s willingness to adopt this innovation. Governments across the world need to investigate and understand the factors that influence e-government services adoption in order to encourage citizens to use them instead of more traditional methods. Researchers (Bélanger and Carter, 2008; Gupta et al., 2008; Kumar et al., 2007) have shown that many governments still face the problem of a low-level of adoption of e-government services by their citizens.

The literature utilizes technology acceptance models (TAMs) and theories. These include those such as theory of reason action, the TAM, the motivational model (MM), the model of PC utilization (MPCU), the diffusion of innovations, the theory of planned behaviour (TPB), social cognitive theory (SCT), and the unified theory of acceptance and use of technology (UTAUT; Venkatesh et al., 2003). The latest UTAUT model was designed by combining constructs from these existing models, in order to overcome the limitations of such. UTAUT has four direct constructs: performance expectancy, effort expectancy, social influence, and facilitating condition. Various researchers (Harby et al., 2012; Venkatesh et al., 2003, 2011; Alhujran and Chatfield, 2008) have argued that these four constructs play a significant role as direct determinants of user acceptance and adoption of technology and services. Therefore, various technology adoption models have been applied to e-government studies by several researchers (Ahmad et al., 2012; Harby et al., 2012; Rehman et al., 2012; Venkatesh et al., 2011;
Schaupp et al., 2010; Carter and Weerakkody, 2008). They have identified and investigated a range of factors that affect the adoption of e-government services, such as ease of use, perceived risk, reliability, relative advantage, trust, image, facilitating conditions, and cultural differences. Some other studies have focused on more specific issues, such as gender differences and technology adoption (Alkhattabi et al., 2012; Panagiotis et al., 2012; Venkatesh et al., 2003), lack of services and security awareness (El-Haddadeh et al., 2012; Rehman et al., 2012), and self-efficacy and computer anxiety (Nysveen et al., 2005).

Earlier studies have covered the issues related to services deployment from the supply side. As previously mentioned, less research has been done on services adoption in developing countries, such as Pakistan, from a citizen perspective (Rehman et al., 2012; Alhujran and Chatfield, 2008).

Consequently, knowledge and understanding of the factors affecting service adoption from the users’ point of view is a vital question for developing countries. Governments are investing huge resources into developing and deploying services for their citizens, but success depends on acceptance by the users. This study addresses this challenge by exploring the factors in Pakistan, where e-government services are at a development stage. The research question can be formulated in the following way:

**RQ1.** What is the current situation in Pakistan concerning the factors affecting e-government services adoption and what are the implications of this to future deployment?

This research question was answered by addressing factors of the UTAUT model and conducting a survey to describe the current situation in Pakistan. The empirical results of this survey were analysed and their implications to e-government service development discussed. This study provides contemporary information and understanding of the current state of e-government services in Pakistan from the viewpoint of its citizens. The results can be used by the decision-makers and service-designers to improve e-government services and their accessibility to citizens. The results can be generalised to other developing countries, especially to South Asian countries in similar circumstances.

The structure of the paper is as follows: at first, it offers a brief summary of previous research, a description of e-government in Pakistan, and an overview of e-government adoption in developing countries (i.e. South Asia). In the next section, the research strategy and methods are discussed. After that, the achieved results are reported in the context of the related research, along with a validity and reliability discussion. Finally, the paper is concluded by examining implications, limitations and suggestions for future research.

### 2. E-government and Pakistan

Pakistan is a developing country located in the southern region of the Asian continent. E-government in Pakistan was initiated in October 2002; the Electronic Government Directorate (EGD) was established as a unit within the Ministry of Science and Technology in order to employ different projects correlated to e-government, to make available technical recommendations and guidelines for the implementation of such projects, and to set standards for software and infrastructure in the field. The aim of e-government is to help public sector organisations to increasing efficiency, effectiveness, and responsiveness through the use of ICT to better serve the citizens.
The ICT sector is currently the main focus of the Pakistani Government. The Government of Pakistan is at an early stage of ICT development, creating a dynamic and practical approach to drive it into every aspect of the daily lives of all its citizens. With this in mind, various actions were undertaken by the government to modernise economic and social life, developing a more competitive ICT sector at the regional and international level, and focusing on improved ICT services for all citizens (UN, 2012; PTA, 2011). According to PTA (2011) and National Database and Registration Authority (NADRA) some of the major programs, projects and initiatives of the Pakistani national ICT sector include-sahulat, cellular village connections, National Rabta information portal, NADRA kiosk, and e-Pakistan vision 2020. It is reported that teledensity has experienced 6.7 percent expansion and mobile subscriber numbers have increase by 10 percent, double 2010 figures. Additional mobile penetration rose to 65.4 percent from 60.4 percent, while broadband user numbers had increased by 66 percent at the end of FY2011.

Like other developing countries, Pakistan has challenges, such as poor IT infrastructure, low literacy rates, slow e-government services development, and adoption. South of Pakistan, the Arabian Sea, and Gulf states are similar in culture and IT infrastructure. According to Almakki (2009), Arab countries have challenges, such as the lack of IT infrastructure, as well as cultural issues. E-government is in its infancy in the developing world, where countries share common challenges in the implementation of such services. Literature shows that e-government projects implementation requires top level management commitment and smooth execution of related huge investment. In the case of Pakistan, Qaiser and Khan (2010) reported that there is resistance in releasing funds from top level management, which hinder the development process. The funding issue and implementation of e-government projects is also affected by unstable political situation. In some cases projects are stopped or changed when new government takes over, which results in delays or complete abandoning of the projects (Rehman et al., 2012). The development of ICT infrastructure is a major issue in Pakistan, similarly to other developing countries. The government provides many extensive services to citizens, but the lack of countrywide ICT facilities makes integration even with other organisation difficult. Additionally Kayani et al. (2011) reported that in Pakistan there is insufficient access to internet as well as limited security and lack of IT policies implementation. Although e-government initiatives in Pakistan began in 2005, little progress has been made since then. This is further explained in Section 3.

3. E-government adoption literature
The success of e-government initiatives is dependent on government support as well as citizens acceptance. According to Kumar et al. (2007), adoption is “a simple decision of using, or not using, online services”. According to Heeks (2008), only 15 percent of e-government projects are successful, while 35 percent totally fail and 50 percent of are partially failed. It is also evident that a major portion of these failed projects are from developing countries. Research also suggests that worldwide there is a low level of e-government adoption (Bélanger and Carter, 2008; Kumar et al., 2007). According to Kumar et al. (2007), overall adoption of e-government services is low in many countries, such as in Ireland, Poland, and Kuwait at less than 30 percent, and in Australia, Canada, and Finland at around 50 percent. On the other hand, in the USA, Singapore, and Korea the proportion of citizens adopting e-government services is slightly higher as compared to other developed countries (UN, 2012). There appears to be problems with the
adoption of these services by citizens. Even though governments are improving e-services, citizens are still more likely to use traditional ways of communication (Belanger and Carter, 2008; Kumar et al., 2007). Moreover, UN (2012) and Kumar et al. (2007) have emphasized this dilemma, finding that the rate of adoption of e-government is low around the world, although some countries are doing better than others.

Most of the developed countries have experienced benefits from e-government services, but there is still much room for improvement globally. Like any other innovation, e-government services create a number of challenges for citizens, as well as for governments. These challenges include lack of access to e-government services, trust, security concerns, and the digital divide (Harby et al., 2012; UN, 2012; Venkatesh et al., 2011; Schaupp et al., 2010). In developing countries, one of the most important reasons for the low-level of adoption of e-government services is that the needs and requirements of citizens are ignored. In the South Asian region, most portals and government web sites remained dormant in 2010 (UN, 2012). In 2010 and 2012, UN e-government world surveys ranked Pakistan 146th and 156th, respectively. However, as a whole the South Asian region regressed in the 2012 survey and remains far below the world average. The rankings of South Asian countries in UN (2012) e-government survey are as shown in Table I.

Hence, low rates of service adoption and usage are continuing problems for most governments. The Pakistani Government must improve e-services by determining the influential factors in existing e-government services to attract potential users. The above discussion shows that governments across the globe still face problems in e-government services adoption. This also demonstrates the need for greater attention and more research to investigate the adoption of e-government services from the citizen’s perspective, especially in developing countries like Pakistan.

4. Research strategy and methods
The objective of the research presented in this paper was to study e-government services in Pakistan from the user’s point of view. The chosen strategy was to use the appropriate technology adoption model as a basis for the designing the empirical research. The empirical data was collected through an online survey. The overall research process is shown in Figure 1. The study began with a literature review and analysis. In this phase, relevant literature on e-government and related research was collected and analysed. Along with that, the various technology acceptance theories and models were reviewed.

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<td>Maldives</td>
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<td>Sri Lanka</td>
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<td>101</td>
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<td>87</td>
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<td>Bhutan</td>
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<td>Bangladesh</td>
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<td>142</td>
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<td>150</td>
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<tr>
<td>Nepal</td>
<td>126</td>
<td>150</td>
<td>153</td>
<td>164</td>
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<td>Afghanistan</td>
<td>168</td>
<td>167</td>
<td>168</td>
<td>184</td>
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</table>

Source: UN (2012)

Table I. E-government rankings in South Asia
4.1 Research model

So far various models were developed and used to understand acceptance of users of information technologies. Among these models, UTAUT is the newest model accepted to predict and explain usage intention (Venkatesh et al., 2003, 2011; Wang and Shih, 2009). This model consolidates eight TAMs (theory of reasoned action (TRA), TAM, MM, TPB, C-TAMTPB, MPCU, innovation diffusion theory (IDT), and SCT). According to Venkatesh et al. (2003) UTAUT provides 70 percent of the variance in intention to use technology, which is more effective than previously known models. Also in number of studies (Alshehri et al., 2012; Harby et al., 2012; AlAwadhi and Morris, 2008; Kumar et al., 2007) various factors were identified during the investigation of e-government services and were conceptually integrated into UTAUT. For the purpose of this study, UTAUT is shown in Figure 2, which was simplified to offer a complete picture of the influential factors for the adoption of Pakistani e-government services from a citizen perspective. The three constructs that are specified as direct determinants of behavioural intention in UTAUT, i.e. performance expectancy, effort expectancy and social influence, were utilized for measuring the experiences of the e-government services by the current users. The fourth construct, i.e. facilitating conditions, which is a direct determinant of use behaviour, was used to explore both service user and non-users’ perceptions of challenges in facilitating conditions affecting the usage and adoption of the e-government services. In addition, only the relationships between the constructs, without the moderators in the original model, were used, corresponding to the research of Il et al. (2010). The model holds the following four key constructs to determine the usage intention and behaviour.

4.1.1 Performance expectancy. This is “the degree to which an individual believes that using the system will help him or her to attain gains in job performance” (Venkatesh et al., 2003). A common misunderstanding of many electronic users is that the new electronic systems are troublesome and not helpful in improving performance.
UTAUT suggests that this construct is the strongest predictor of individual behaviour. The construct is derived from the concepts: perceived usefulness (TAM/TAM2 and C-TAM-TAB), extrinsic motivation (MM), job-fit (MPCU), relative advantage (IDT), and outcome expectations (SCT). In the context of e-government performance, expectancy enables citizens to access information quickly, at a time and place of their convenience. The e-government literature in developing countries shows that performance expectancy strongly influences users’ intention (AlAwadhi and Morris, 2008; Alhujran and Chatfield, 2008).

4.1.2 Effort expectancy. This is “the degree of ease associated with the use of the system” (Venkatesh et al., 2003). Effort expectancy captures the concepts from existing models: perceived ease of use (TAM/TAM2), complexity (MPCU) and ease of use (IDT; Venkatesh et al., 2003). It explains whether e-government services are easy to use or not, how the user interacts with the interface, and if it is cost effective or not. UTAUT shows that effort expectancy affects user attitude towards usage.

4.1.3 Social influence. This is “the degree to which an individual perceives that important others believe he or she should use the new system” (Venkatesh et al., 2003). This construct is derived from existing models to capture the concept of social influence: subjective norm (TRA, TAM2, TPB, and C-TAM-TPB), social factors (MPCU) and image (IDT; Venkatesh et al., 2003). It plays an important role in the usage of any technology. In this study, social influence is investigated in terms of peer influence, because the peers spend most of the time together and easily influence each other.

4.1.4 Facilitating conditions. This is “the degree to which an individual believes that an organisational and technical infrastructure exists to support the use of the system” (Venkatesh et al., 2003). The facilitating condition to use a technology or service is very important, so that with the required environment, equipment and assistance it is easy to use. It is a direct predictor of the actual usage of the technology (Venkatesh et al., 2003).

4.2 Survey design and data collection
After the research model specification, the survey was designed and data collection carried out. The first task in this phase was to design the survey questionnaire and
to specify the questions to the variables forming the four factor constructs of the model. The specification of the construct variables was done based on the previous studies (Venkatesh et al., 2003; Venkatesh and Davis, 2000; Davis et al., 1989) but adapted to the particular context of this study. The first factor, performance expectancy, indicates in this study that the user believes that e-government services will help him or her to attain gains in job performance. It was constructed using three variables in the questionnaire: quick task completion, time saver, and easier contact. The second factor, effort expectancy, measures the perception of usefulness, and ease of learning and use of e-government services. It was constructed using five variables: useful, cost effective, easy to learn, easy to use, and clear interaction. Social influence is the degree to which peers influence the use of a system, either positively or negatively. Sources of such influence may come from a citizen’s family, colleagues or friends, and may have an influence on the citizen’s decisions to use e-government services. This question was constructed with two variables: more prestige by using e-government services; and people who are important to me suggest using it. All of the variables related to these three factors were measured using five-point Likert scale, ranging from 1 (strongly disagree) to 5 (strongly agree). Furthermore, these questions were asked only of e-government adopters, the persons who have experience of e-government service usage. The fourth factor, facilitating conditions, is related to the necessary environment as well as availability of help for the usage of e-government services. This factor was measured with a question presenting a number of issues in the facilitating conditions that can potentially affect to usage, allowing an open answer. The respondents were requested to identify all of those issues that they are experiencing as major problems.

In addition to the questions related to the factors of the research model, the questionnaire contained a number of other questions that were used for collecting background information, such as demographic information and familiarity with internet usage. The survey was implemented as an online form in order to reach the respondents in the target population more efficiently.

The target population of the study was chosen to be Pakistani university students. These were selected as the survey population because they are the section of the adult population for whom internet use has become a part of their daily lives. They will be the main users when e-government services are more extensively implemented. Therefore, knowing and understanding their attitudes and perceptions is vital for improving e-government services in the future.

The data collection plan was based on convenience sampling. The survey, including a link to the online form, was advertised to the target population through different communication channels, such as personal e-mail, various groups on social media websites for Pakistani students, and university mailing lists. The survey was open for one month, May 2011. During that time 121 responses were received. Six these responses were discarded because of incorrect and missing information. This equaled a total of 115 responses, which formed the data for the analysis. The analysis of the data was done through descriptive statistics. Before the analysis the reliability of the measurement of the factor constructs were analysed with Cronbach’s $\alpha$. In the analysis, the empirical results were also compared with the results of the previous studies.

5. Results
The collected data set of 115 responses consisted of two distinct groups of citizens: 32 (28 percent) e-government services adopters and 83 (72 percent) non-adopters.
In other respects, the sample was characterised by the following demographics and other background variables. The respondents were from various departments; studying Bachelor (42 percent), Master (51 percent), and PhD (7 percent) degrees. 78 percent of them were male and 22 percent female. Almost all respondents (91 percent) had an internet connection and their internet proficiency was generally very good. Most respondents spent more than 10 hours a week on the internet for information retrieval, transactions, and social networking. Three quarters of the respondents prefer e-services when communicating with government agencies and believe that existing e-government services are useful for them. Some participants still prefer traditional methods of communication (e.g. 20 percent prefer direct office visit) because e-government is not fully implemented in Pakistan and is still in the developing stage.

According the research setting, the first three factors of the research model affecting the intention of use of e-government services measured the adopters group. These results, including averages and standard deviation of the variables as well as reliability statistics of the constructs, are presented in Table II.

The reliability of measurement of the constructs was analysed with Cronbach's $\alpha$, which measures the internal consistency of the factor measured by different variables. From Table II, it is seen that the reliability of the factor measurement is relatively high, the value of Cronbach's $\alpha$ varying between 0.717 in social influence and 0.851 in effort expectancy. This indicates that the constructs are internally consistent and reliably measured. The weakest value of reliability was in social influence (0.717), which can be following from the fact that only two variables were used for measuring this construct; but according to Nunnally (1978) this value is at an acceptable level.

The results in Table II show that, in general, the attitude towards e-government is quite positive among those who have been using the services; the average is around 4 (of maximum 5) in all variables related to performance expectancy and effort expectancy. The perception of social influence appears to be somehow lower, with average around 3.5. The high average of the performance expectancy variables indicates that users have a positive attitude towards using Pakistani e-government services.

<table>
<thead>
<tr>
<th>Constructs (n = 32)</th>
<th>Variables</th>
<th>Mean</th>
<th>Median</th>
<th>SD</th>
<th>Cronbach’s $\alpha$</th>
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<tbody>
<tr>
<td>Performance expectancy</td>
<td>Quick task completion</td>
<td>4.09</td>
<td>4.00</td>
<td>0.96</td>
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<td></td>
<td>Time saver</td>
<td>3.88</td>
<td>4.00</td>
<td>0.97</td>
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<td></td>
<td>Easier contact</td>
<td>3.75</td>
<td>4.00</td>
<td>1.07</td>
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<td>Effort expectancy</td>
<td>Useful</td>
<td>4.00</td>
<td>4.00</td>
<td>1.03</td>
<td>0.851</td>
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<td></td>
<td>Cost effective</td>
<td>3.88</td>
<td>4.00</td>
<td>0.91</td>
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<td></td>
<td>Easy to learn</td>
<td>3.84</td>
<td>4.00</td>
<td>1.05</td>
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<td></td>
<td>Easy to use</td>
<td>3.81</td>
<td>4.00</td>
<td>0.89</td>
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<td></td>
<td>Clear interaction</td>
<td>3.59</td>
<td>4.00</td>
<td>1.18</td>
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<tr>
<td>Social influence</td>
<td>More prestige by using e-government services</td>
<td>3.41</td>
<td>3.50</td>
<td>0.91</td>
<td>0.717</td>
</tr>
<tr>
<td></td>
<td>People who are important to me suggest using it</td>
<td>3.31</td>
<td>3.50</td>
<td>1.06</td>
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Table II. Results of the factors affecting intention to use e-government services.
because they are more efficient. This shows that high performance expectancy is more likely to use such services. Thus, e-government services planner should consider ways to increase performance expectancy in term of saving time and cost, regarding these services. Planners could make use of the value-adding properties of services in cultivating citizens’ performance expectancy. For instance, advertise that it can help users’ access up-to-date information and carry out transactions more efficiently. Similar results were found by various researchers (Alshehri et al., 2012; Rehman et al., 2012; Verdegem and Verleye, 2009; AlAwadhi and Morris, 2008; Venkatesh et al., 2003).

Correspondingly, the respondents share favourable views concerning effort expectancy. The overall perception of effort expectancy of the participants was that e-government services are easy to learn easy to use, useful, cost-effective, and provide clear interaction. This means that user effort expectancy is an important factor in such services adoption. In order to attract more citizens to use e-government services, the complexity of the hardware and software should be hidden and provide easier-to-use user interfaces and it is important to find methods to reduce the steps users take to obtain needed information or making transaction. These results indicate that citizens are willing to adopt e-government services as they are experiencing value in them considering expected performance and effort in using them. These findings are similar to the results of several researchers (Alshehri et al., 2012; Rehman et al., 2012; AlAwadhi and Morris, 2008; Verdegem and Verleye, 2009).

The results of the survey revealed that nearly half (46 percent) of the users of considered obtaining more prestige when using e-government services and that their peers and families prefer them to use these services. The literature shows that social influence is an important factor for the acceptance and adoption of new technology. The averages of the social influence variables was approximately around 3.5, which shows that service users experience a positive social influence in using Pakistani e-government services, even if this effect is lower than performance expectancy and effort expectancy.

This means that a citizen will tend to use e-government services if his/her important others use such services. Thus, e-government authorities can take advantage of social influence in promoting the use of such services. Once users become familiar with e-government services, they may persuade their colleagues and friends to adopt these services. The findings support the view that the adoption of e-government services is socially influenced in Pakistan. This corresponds with previous research (Ahmad et al., 2012; Panagiotis et al., 2012; Venkatesh et al., 2003), which indicates social influence as a key factor in the acceptance and adoption of technology.

As the users who are adopting e-government services can face a number of challenges when using the services, the personal experiences of challenges in facilitating conditions were also explored in the study. These results, for both service adopters and non-adopters groups, are presented in Table III.

The results show that the citizens see the lack of awareness of the services the most significant problem, restricting the usage of e-government services in Pakistan. That lack of awareness was considered as a major problem by a higher number of non-users (79 percent) than current users (65 percent). This is natural as the actual users are evidently more aware of the services than those who are not using them. Furthermore, although the government of Pakistan has put more effort into e-government services, the majority of the respondents, 78 percent of the current users and 54 percent of the
non-users, indicate that there is a lack of adequate assistance in using the e-government services. The respondents also brought up that government personnel and media are not informing citizens well enough about the dozens of existing services along with their benefits. One respondent stated that “if you ask a lay man, they even don’t know about e-government; what it is?” The findings of the study show that lack of awareness, adequate help, and poor guidelines influence the acceptance and adoption of e-government services by Pakistani citizens. Therefore, the government should run extensive advertising campaigns to ensure that people are aware of and use the services.

Citizens are also concerned with the privacy and confidentiality (42 percent) of their personal data. Privacy and confidentiality has to be highly valued in establishing and maintaining e-government services. Furthermore, the findings revealed that half of the respondents (50 percent) were worried about internet and related technical infrastructure problems, such as network and server break-downs and access problems, which might interrupt service transactions and cause delays. These results suggest that technical problems might cause annoyance to users if they find it difficult to conduct their transactions successfully. Adequate facilitating condition provide better access along with improve connectivity at any time and place which can increase the users’ intention to use the e-government services (Lean et al., 2009; Venkatesh et al., 2003). Similar findings have been reported by other researchers (Ahmad et al., 2012; Alshehri et al., 2012; El-Haddadeh et al., 2012; Verdegem and Verleye, 2009; AlAwadhi and Morris, 2008).

6. Conclusion
This research was carried out to explore the factors that influence the adoption of Pakistani e-government services from the end-user point of view. E-government adoption has been investigated more extensively in developed countries compared to developing countries. In South Asian countries few studies have been carried out on e-government adoption. Thus, this study can serve as a starting point for e-government adoption research in Pakistan from the end-user point of view, which is important and necessary for fostering its adoption and use.

In this study, UTAUT model was used, as it was identified as a suitable model based on the literature on e-government adoption. By using UTAUT, four constructs (i.e. performance expectancy, effort expectancy, social influence, and facilitating condition) were applied. The results indicate that these constructs have influence on users’ adoption of e-government services in Pakistan. The more users perceive e-government services as being useful and easy to understand, the more they will intend to use such services. The results show that citizens will be more willing to adopt

<table>
<thead>
<tr>
<th>Challenges</th>
<th>Adopter (n = 32)</th>
<th>Non-adopter (n = 83)</th>
<th>Total (n = 115)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n</td>
<td>Percentage</td>
<td>n</td>
</tr>
<tr>
<td>Lack of awareness</td>
<td>21</td>
<td>65.6</td>
<td>66</td>
</tr>
<tr>
<td>Proper help and assistance</td>
<td>22</td>
<td>78.7</td>
<td>45</td>
</tr>
<tr>
<td>Lack of internet infrastructure</td>
<td>16</td>
<td>50.0</td>
<td>42</td>
</tr>
<tr>
<td>Lack of proper user interface</td>
<td>15</td>
<td>46.8</td>
<td>40</td>
</tr>
<tr>
<td>Data privacy</td>
<td>14</td>
<td>43.7</td>
<td>35</td>
</tr>
<tr>
<td>Other</td>
<td>2</td>
<td>6.25</td>
<td>12</td>
</tr>
</tbody>
</table>

Table III. Results of facilitating condition factor
e-government services when the effectiveness and efficiency of such services increase. Furthermore, government should provide e-services with adequate information and well-organised design and content. Being at the earlier stage of e-government services in Pakistan, the government should focus on improving IT infrastructure. The results also indicate that citizens are not fully aware of e-government services and are mainly concerned with the facilitating condition such as adequate help and the lack of infrastructure. These empirical results support the findings of previous research on e-governance adoption (Alkhattabi et al., 2012; Alshehri et al., 2012; El-Haddadeh et al., 2012; Panagiotis et al., 2012; Rehman et al., 2012; Kayani et al., 2011; Schaupp et al., 2010).

This study has implications for both researchers and practitioners. The government of Pakistan should implement policies and strategies that emphasise the usefulness, the efficiency, awareness, infrastructure issues, adequate help and guidance, address user privacy issues and convenient access to e-government services. Additionally, the promotional campaigns should be increased regarding the importance of internet and e-government services utilization in citizens’ daily life. In addition, to increase the usage of e-government services, the government should bring operational excellence to its services and improve their quality. The results of this study also indicate also that the facilitating condition is one of the biggest hurdles in the usage and adoption of e-government services. The citizens are unable to access these services due to poor infrastructure and a lack of awareness about the availability of e-government services in Pakistan. The government should implement cyber laws to in still confidence in services, which would lead to the adoption of e-government services. In this respect, it can be concluded that in order to successfully diffuse e-government services, governments must understand citizen needs.

The theoretical implication is that, it could be helpful in bridging the gap between theoretical design of e-government and actual deployment. It provides an insight into the issues that are influencing e-government’s effective functioning, particularly in Pakistan. The used amended UTAUT model serves as a practical model for examining the factors that influence citizens’ intention to use e-government services. The findings of this study would help and provide useful information to the researchers and practitioners, such as government policy decision-makers. This would allow to design and implement policies and strategies for increasing the adoption of e-government services in Pakistan as well as in other developing countries, particularly South Asian. The used research model appeared to be suitable for the purpose, and therefore it can also be used in further e-government services adoption studies in other South Asian countries.

The validity and reliability of the results of this study may be affected by some factor in the research design. At first, the online survey was conducted targeting university students. The sample is not representative with respect to the whole population of Pakistan, as most of the respondents in this sample are university students having reliable internet access and more experience. Therefore, due to the bias, it is possible that the respondents’ intention to use or adopt e-government services will be higher as compared with less frequent internet users. Second, in the study, the challenges and factors affecting e-government services adoption were explored, relying on the well-known UTAUT model. However, the actual strength of the factors influencing services adoption in Pakistan was not measured. Finally, this research focused mainly on obtaining a general perception of e-government services, instead of focusing on a specific service. Hence, future studies are needed in order to overcome these limitations.
References
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Further reading


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