Original Article

E-Government: Factors Influencing Adoption of E-Services among the Educated Working Class in Pakistan

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ABSTRACT

This study is based on the information integration theory with help of which a model has been formed to examine the behavior and perception of users of e-services in Pakistan. The study analyzes the factors that may have influenced the citizens of Pakistan to increase their reliance on e-services in Pakistan. For that, a survey has been conducted using a questionnaire to collect the responses (N=328). The results indicate that the educated working class holds a positive perception about the e-services and are willing to replace brick and mortar public offices with the e-services. However, when it comes to the actual use, very few people opt for using e-services. The findings further suggests that the factors such as E-culturability and promotion of e services should be kept into consideration in order to increase the awareness which can boost up interest towards ICT integrated services available online by the government of Pakistan.

Keywords: E-Government, Perception and Behavior, Pakistan Citizens, ICT Integration.

Introduction

In the initial 5 years of the internet, the number of its users had mounted to 5 million, making it the speediest growing technological community ever. Whereas, the Radio took 38 years and television took13 years to achieve the same number of users. Today, there are more than 3 billion internet users worldwide. Governments followed the trend and with the use of information and communication technologies, public services were made available online, with the thought that e-services are time saving and faster in procedure (Zahid et al., 2022).

Now it has been more than a decade, e government has emerged as a rising field of interest among the IT/IS researchers. Dramatic changes have sprung in the relationship between the government and citizens (G2C) with rising opportunity of IT adoption. The purpose is to improve the delivery of public service through online means and meet the expectations and needs of the citizens in timely fashion (S. Khan et al., 2021). Today, e government has expanded in fields of budget management, macroeconomic forecasts, but above all it gives room to communicate with the citizens. Despite a wide number of countries that has digitized their public services; the success of online public services depends the most on government initiation of



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provision but also relies heavily on citizen's acceptance to use those e services. The UN estimates 173 countries that have developed and implemented government websites. Research shows that adoption of e services is at a low level worldwide especially in developing countries (Belanger & Carter, 2008; Kumar et al., 2007). It is noted that many of the e government initiatives end up with a notion of failure; the statistics shows that 35% of developing countries failed completely in implementation of e government services in its initiation stage as the citizens abandoned the concept soon after its launch (Malodia et al., 2021).

Even Pakistan was ranked at 146th and 156th positions respectively in surveys 2010 and 2012 conducted by the UN (Ovais Ahmad, Markkula et al. 2013). The Ministry of IT has been funding e government projects at both Federal and Provincial level in Pakistan. During the fiscal years 2000-01 and 2003-04 the total budget of Ministry of IT was 4.82 billion rupees, out of which 370 million rupees were consumed for e government related projects. The key driver in developing online services and investing in heavily is to meet certain demands of the citizens (Minicopoulos, 2004). Seeking a new way forward to connect citizens in order to maintain an interactive communication system, Government of Pakistan turned to provision of e services to have improved government processes, deliver better services and save cost. But, the statistics has fallen below expectations of the e services in Pakistan like most of the developing nations that operate with heavy budget and deliver little comparatively (Arfeen, 2004).

Therefore, it warrants a significant research on the user's behavior and perception of e government services; because the success of any e government venture depends primarily on users' desire to bring e services into use (Gronlund, 2004; A. Khan et al., 2021; Kumar et al., 2007). Studies show that users maintain a repeated behavior pattern to use any information system (Kim & Malhotra, 2005). Several models have been designed using information systems (IS), psychology and sociology to understand the citizens' behavior toward the use of new technology, (Venkatesh et al., 2003). However, this study has proposed factors that might have a positive influence on user's perception and behavior.

This study begins with the introduction to the topic followed by the theoretical background and review of the previous studies. A research model along with the hypothesis has also been developed based on the literature. To assess the user's behavior and perception of e-government services, correlation and regression analysis have been used and their results have been discussed in the analysis section, followed by conclusion and implications.

Literature Review and Hypothesis

Theoretical Base

IT manufactures and mangers around the world are taking essential guidance from the technology adoption research, to better develop applications and handle IT management (Zhang et al., 2011). It is important to understand the behavior of the end-user for whom costly technology is being designed. This study has come up with a conceptual model based on Information Integration theory to examine behaviors and perceptions of e services in developing countries and how to make the implementation more suitable in cultural specific regions (A. Khan et al., 2021).

In this study, the step by step process from intention or attitude to behavior is not the main focus rather the behavioral actions performed on the e government services websites are important. It is a practical evaluation of the perception of citizens towards e services and their activities of e services utilization. Secondly, factors from cultural, marketing and psychological point of view are presented in to a conceptual model that hypothesizes an impact on the perception and behavior of the citizens' adoption of e services (Tuan, 2022).

The information integration theory supports the model of this study so to explore how through addition of new information to the existing knowledge can change perceptions and form behaviors. Perception and behaviors can be modified by mixing and combining the existing information with the contemporary ideas. According to information integration theory, behaviors are modified as people receive stimulus or

persuasive pieces of information regarding concepts that a persuader wants to promote, make an interpretation and evaluate with exiting behaviors.

Behavior

One of the main causes in technology advancement is an individual's willful behavior to utilize and their continuous craving for betterment in the existing technology. It is essential to develop an understanding of how would people behave towards a certain technology undertaken in a different social and cultural environment (Tuan, 2022). It is most likely that people from developing and developed countries might not embrace technology in the same manner especially imported from western or developed countries where technology is embedded in the society quite deeply (Asgarova; Tassabehji et al., 2019). So a better comprehension of the behavioral patterns is required in order to gauge how that users' behavior can be positively influenced by the social and cultural factors at the intervention of new technology (Intille et al., 2003; Zahid et al., 2022).

Some studies suggest that initially users are fast to accept a new technology in the beginning, to get the experience, as enforced or promoted by the government, but then a swift fade in use is observed soon after. The success of e government rely on the citizens' adoption despite the planning and development put into variety of government services to make them available online (Malodia et al., 2021). As suggested by Davis (1989), that the users only accept a technology that has a user-friendly interface. Any technological system would suffer if it lacks positive influence in its purpose and usefulness since the end user of any technology always has convenience and simplicity on their minds.

In this study 'behavior' is a dependent variable and is defined as a citizen's use of e services and what they do when visiting the e services websites. This variable is used to measure the actions of the citizens that they perform while using e services.

Perception

Perception is the most primary form of the conceptual knowledge and awareness of one's surroundings (Efron, 1969; Taherdoost, 2018). Since the early 1990's the influence of information and technology communication has been immense on the way society developed and interacted. Citizens not only recognized the dependence on the internet but also understood the advantages it has that fits their demands (Zhou et al., 2019). Perception is based on an individual's assessment that relies on their experience of e services. It is the internal views of an individual about the particular information and is developed with the use of the sensory data collected.

However, human perception doesn't remain constant and varies with the passage of time as more information floats around (Efron, 1969; Taherdoost, 2018). Perceptions about a concept may change depending upon the provided context, increasing knowledge of the domain and individual's intuitions to grasp the sense of the concept (Zhou et al., 2019).

This construct is the second dependent variable in this study, and is used to measure the citizen's perception about the e services.

E-Culturalbility

It has been widely discussed in the literature that national culture plays a pivotal role to influence the adoption of technology as well as selection of mode to present it in various parts of the world (S. Khan et al., 2021). Although, e government has become and has widely spread as a global phenomenon, there has been a share of studies found in the literature that compare the e government diffusion from country to country. The context of culture varies from its global formation to micro (country/region based) culture (Steenkamp, 2001). The results show cultural differences toward technological adoption varying from country to another, as the access and skill to adopt e government may vary (Carter & Weerakkody, 2008).

The factor, e-culturability is defined as the measure to know the extent to which the public perceives the e services provided to be cultural-friendly. Many challenges have also emerged with the arrival of e government; one of the utmost importance is how well introduction of new technology has embedded in the local culture. The governments should be able to find ways to acquire the facilities and potential opportunities provided by ICT and incorporate them with the local culture to have greater citizenry acceptance of e government services as cultures plays a significant role in the fruitful execution and use of technology (Ujjan et al., 2022).

Pakistan being the developing country is enhancing its production, promotion and sales in the telecom industry. During 2003 to 2008, Pakistan broke all world records for covering networks. And the cellular companies achieved 100 percent growth rates year after year. This shows that Pakistani citizens are aware of the dynamics and advantages of ICT. Most of the Pakistanis use Romanized Urdu and other local languages for the text messages sent across (Afzal et al., 2015).

However, the tell-tales show that despite of planning and implementation there is a bitter truth that e government projects fail in most of the developing countries (Dada, 2006). As the dispersion of technology across cultures takes place, lack of cultural sensitivity by the developers and implementers can cause failures in executing e services (Wilson & Mergel, 2022).

In most of the developing countries, the term e government or e services are still entirely novice terms even though the governments have begun to partake in e government projects in order to facilitate citizens with online services in the early years of e government immergence. But the act of facilitation needs to be promoted, as governments are facing low level of citizen adoption of e government services (Belanger & Carter, 2008; Choudrie & Dwivedi, 2005; Fu et al., 2006; Gupta et al., 2008; Kumar et al., 2007). On the other hand, people find it difficult to switch from traditional methods of acquiring government services then to opt more techno based ways to interact with government. This technophobia can be reduced with easy websites interface and the way information is aligned on e-government websites, where online services are provided keeping cultural sensitivity in check. This way, citizens might be attracted to use e services, once they find familiar effects that are closer to the surrounding environment they interact on daily basis (Saeed, 2015; Zahid et al., 2022).

Moreover, to develop a universally accepted website that might match international standards of e government website interface while leaving the end users full of anxiety and pressure does not do justice to the objective of online public services. It is important to use cultural values while developing e services interface webpage as the goal of the government is to make ICT practical and serviceable for the user friendly online services (Akman et al., 2005). A UNs e government survey published in 2010 confirms that users prefer localized yet personalized if they are using e services, it calls for a collaborative effort at an interdepartmental level.

'E culturability' factor is formed to measure the extent to which Pakistani government has made an effort to incorporate cultural values yet use-friendly interface to attract user's intention.

The E-Government Directorate, Ministry of IT, Pakistan, has issued e government standards and objectives that declared to maintain a reference for clarity in terminologies and vocabulary used for the development of e services projects in order to help public use those e service with ease. The purpose is to establish clear expectation between execution body and the end-users; also to enhance interoperability and interconnectivity.

The literature suggest that cultural factors hold greater significance over technological factors when it comes to e government success (Sabri et al., 2012). In Pakistan language and culture are strongly interwoven with each other to an extent that to bring certain technological evolutions such as e services, the developers must keep in mind the cultural background, significance of language (Parveen, 2015). Although English language is taught in schools, not many people are efficient in reading or writing skills. Therefore,

demographic differences, literacy and language could become serious barriers in designing the interface of the online services (Ghayur, 2006).

The National Language Promotion Department is established to promote and give recommendations for adoption and accelerating use of Urdu language. This department works in collaboration with research and educational institutions to find ways to minimize the digital gaps in Pakistan. NLPD has also translated Microsoft applications and Windows in Urdu language.

This study suggests that e services influence the perception and behavior of the citizens using positive cultural approaches. It also gives a deeper understanding from a cultural perspective for the developers and implementers of e services in Pakistan. The following hypotheses are, therefore, formulated in the light of anticipated framework and the literature reviewed:

H1: *E Culturability has a positive effect on perception about e services.* **H2:** *E Culturability has a positive effect on behavior towards e services.*

Promotion

The idea of e services is quite favorable for the citizens to extract information and avail public services through internet as compare to paying a visit to a public office, standing in lines and filling in the paper work (Zahid et al., 2022). There are certain advantages attached to e service usage than the conventional way, as it provides transparent process, save costs and time, and provide improved and efficient procedures of getting transactions done through online services. (Ovais Ahmad et al., 2013). In most of the developing countries, the adoption rate of e services by the citizens is notified lower than expected in the literature (El Baradei et al., 2012). The E-government Survey conducted by United Nations in 2012 emphasized that efforts to deploy e services in the developing countries are not paying off because of the lack of awareness.

Lack of awareness about e government services points in the direction to deliver, create and communicate the value of the e services especially in developing countries like Pakistan. There is a need to build a process of communication to create a bridge between the citizens and use of e services in Pakistan (Sadik-Zada et al., 2022).

In recent years, governments have utilized social media to interact with citizens. Social media can be used as a platform for promotional campaign and interventions for adoption of e services online. Such interventions may strengthen the government-citizens relationship, and may enhance citizen's participation (S. Khan et al., 2021).

Social media is a new marketplace on internet that gives a platform to create communities of consumers to generate content in such a way to influence their perception and behavior. The citizens are referred as customers of their governments. The governments in order to provide automated services must build connections and interrelations to recognize, administer and empower the potential opportunities attached with the use of ICT (S. Khan et al., 2021).

There are a multiple channels that could be used to reach the target citizens, to promote adoption of eservices and engage the citizens to use e services. Promotion through social media could be used in creating behavioral change among the citizens regarding their active role and responsibility towards public affairs. Most of the behavioral change initiatives regarding health promotion in Pakistan are channeled through the use of media since almost two decades now (Ronis & Nishtar, 2007). To have the behavioral change initiative possible for the adoption of e-services it is one way to incorporate promotion intervention through education starting from an early school and taking it along up to universities.

In year 2014, the Ministry of IT has formulated E Government Master Action Plan. The purpose of this plan is to make sure of a successful implementation of e government programs in order to promote digitization of traditional socio-economic sectors and to device the E Services Deployment Strategy that will cover all programs including e learning, e education, e health, e agriculture, e commerce etc. (Siddiqui, 2014).

Another project namely, E-Office Suite has been launched in the Federal Ministries/Divisions in 2014. Trained IT professionals and consultants delivered specialized training for orientation of E-office application including E-filling to more than 3000 Federal Government employees. Presently, E-office is being implemented in 13 Ministries/Divisions and will be roll-out to the rest of the Ministries/Divisions in step by step manner.

E-office application is the prerequisite of the IT infrastructure to accomplish the E Government's vision to have a transparent, accountable delivery of cost-effective and efficient public services to the citizens of Pakistan. According to the Pakistan Press Foundation ("IT Ministry plans e-office forum," 2014) main objective of E Office Suite is to have less paper administration and move towards digital government. This is a step forward to change the public services practices and overall performance of the social systems that have a widespread effect on the growth of the Pakistani society.

Through effective social interventions the public policy sector improve the negative circumstances of the society and change the perception and behavior to bring fruitful results (Phipps & Brace-Govan, 2011). Previous research has shown that behavioral-change interventions produce environmental benefits. Following the success stories of health promotion in health sector, large scale and long-term interventions and action plans can bring irreversible changes in the adoption of e services in Pakistan.

The following hypotheses are, therefore, formulated in the light of anticipated framework and the literature reviewed:

H3: *Promotion has a positive effect on perception about e services* **H4:** *Promotion has a positive effect on behavior towards e services*

Research Model

Following is the diagram of the theoretical framework employed in this study.



Fig 1: Theoretical Model for E-Government Perception and Behavior influenced by Promotion and E-Culturability

The independent variables of the study include promotion, e-culturability and social demographic variables. With the dawn of internet, it shows that cultures have evolved and reshaped much faster than ever before. The ever-existing state of flux in cultures could be used to re-invent, and the mentality of the citizens which is a direct outcome of broad collection of social behaviors and outcomes, could be altered faster and in a much effective way than before. Nonetheless, it is important to understand the thinking pattern and the way

of doing things online, in cultural context at an individual level; in order to relate to the language, perceptions and expectations that shape up people's actions towards acceptance of a newer concept.

In order to potentially reinforce or even stimulate the changes in behaviors and cognitive structures of an individual to adopt e services in a developing country, a variable: E culturability has been extracted from the IS management literature addressing the cultural issues in developing countries. Moreover, due to the complex and multi-dimensional nature of e services adoption, it is important not only to address it from technological perspective but also to look upon it using other perspectives like, social and cultural. Promotional campaigns also contribute to the key activities in e government. It enhances citizen oriented public services delivery and development of e government program through capacity building.

Methods

Sample

The target population for this study is educated, working citizens of Lahore who have used some kind of e services and therefore have built a perception and hold a behavior towards e services in Pakistan. And the unit of analysis is adoption of e services in Pakistan. Stratified sampling is chosen for the study. Stratified sampling is a probability sampling method and is commonly used for surveys when the researcher has to divide the population into stratum and then use a specific number of samples from each strata to make it fair and square. This way each sampling unit in the chosen stratum has equal chance of occurrence. In this study, these characteristics could involve place where the respondent's live (rural or urban), specific knowledge (for example, computer literate, internet users).

Therefore, a sufficient size of sample is planned to be selected from banking, manufacturing, telecommunication, education, health care, information and technology, and business consultants in order to draw generalized research conclusions. A sample size of 328 is sized up on the basis of internet users who are not only literate but have gained experience of e government use.

Measures

A five Likert scale paper questionnaire has been developed. These questions have been taken up from the already formulated questionnaires found in the studies through literature review. All the instruments selected and used in gathering the data were adapted from the literature. Parts of the measurement instrument is somewhat tailor-made that would help draw a clearer picture of E government services usage, perception and behavior in the developing countries like Pakistan.

Results

Demographic Characteristics of the Sample

According to the demographic characteristics, 37 respondents (11.3%) were e government information and services workers whereas remaining 291 of the respondents were from other chosen industries. 163 respondents (49.7%) fell under the age group of 25 to 35, which shows that most of the managerial positions are filled in by young educated personnel. The second largest age group is 18 to 25, and 115 respondents (35.1%) from a number of reputable companies. 209 (63.7%) of the respondents were male and 119 (36.3%) were female. This shows that the managerial working class segregation has a male dominance in Pakistan as its percentage of participation is higher than the percentage of females.

The following table describes the findings of this analysis; it provides the general overview of the respondents in terms of their demographic information, such as gender, age, income, education and profession.

Gender Female 119 36.3% Male 209 63.7% Age 18-25 115 35.1% 26-35 163 49.7% 36-45 36 11.0% 46-55 13 4.0% 56-65 1 0.3% Education Intermediate 17 5.2% Bachelors 131 39.9% Master 170 51.8% Phd 10 3.0% Industry/profession Arts and Recreational 24 7.3 Health care 49 14.9 Manufacturing 7 2.1 Consultant 41 14.3 Telecommunication 47 14.9 Colleg or University 50 15.2% professors	Variable		Frequency	Percent
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Phd 10 3.0% Industry/profession Arts and Recreational 24 7.3 Health care 49 14.9 Manufacturing 7 2.1 Consultant 41 14.3 Telecommunication 47 14.9 College or University 50 15.2% professors		Master	170	51.8%
Industry/profession Arts and Recreational 24 7.3 Health care 49 14.9 Manufacturing 7 2.1 Consultant 41 14.3 Telecommunication 47 14.9 College or University 50 15.2% professors		Phd	10	3.0%
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91,000 PKR and above 55 16.8%		71,000 PKR to 90,000 PKR	41	12.5%
		91,000 PKR and above	55	16.8%

Table 2: Demographic and ICT characteristics of all respondents

Correlations Coefficients

The dependent variables in this study will be the behavior and perception toward usage of e government services. The independent variables include E-culturability and promotion. Correlation models are used to study how impressions, attitudes, perceptions and behaviors are affected by varied factors; therefore, this model is being used to derive the factors affecting the behavior and perception of e-government facilities provided online.

Correlation coefficients are tested for significance. So, a positive value reflects a direct association between the variables and a negative value reflects a negative or inverse relationship (Cohen et al., 2013). Whereas the strength of the relationship between the variables is indicated by the absolute value of the correlations; for example, the values -0.70 and 0.70 represent equal number of strong relationships. Zero is the weakest correlation; however, values falling between 1 and -1 are the strongest. Values falling between .01 and .30 are considered to be exhibiting weak relationships; and those between .31 and .60 are considered moderate and those greater than .60 represent strong associations.

The effect of the independent variables on the rate of usage and perception of e-government services in Pakistan is measured using Pearson's Correlation Analysis. The Statistical Package for Social Sciences (SPSS) statistical application program has been used in the derivation of Pearson's Correlation. The relationship between behavior and e-culturability was investigated using Pearson product-moment

correlation coefficient. Preliminary analyses were performed to ensure no violation of the assumptions of normality, linearity and homoscedasticity took place.

The result shows that the relationship between e-culturability and behavior of people is r = -0.09, which indicates negative relationship with behavior and e-culturability. Whereas Promotion has a positive relationship with behavior of people $r = .069^{**}$, results demonstrate a strong positive relationship between Promotion and Behavior of the e-services users.

The correlation between perception of people and e-culturability is $r = 0.252^{**}$; it shows a positive relationship with significant support; the relationship between perception of people and promotion is $r = 0.234^{**}$ it shoes a positive relationship between perception and promotion.

Regression Analysis

Regression analysis results illustrate the model summary and effect of variable; whether identified variables Promotion and E-Culturability have any influence on the perception and behavior toward e-services usage as proposed in the research model.

Model I:

Actual dependency between Promotion and E-Culturablity, Behavior and Perception of e-services usage in Pakistan was investigated as to whether there is any potential relationship by considering the correlation between each of the variable. Since correlation analysis demonstrated a relationship between the variables, a multiple linear regression analysis was performed to investigate whether any of the variables actually predict the use of online public services and see which variables have the greatest effect.

In Model I, the value of R Square is .088 which is expressed as percentage multiply by 100. It means that model of this study which includes independent variables Promotion and E-Culturability as well as control variables gender, age, education, income and profession; explain 8.8 % percent of the variance in Behavior of the e-services' users. Regarding H2, E-Culturability has not significantly affected users' behavior about the online public services, ($\beta = -.043^{**}$, p >.001). Also, Promotion has no impact on users' behavior regarding the use of online public service ($\beta = .117^{**}$, p >.001) and therefore would not support H4.

According to results it can be said that even if the culture to use internet is advancing more and more in Pakistani educated community, and no matter how much the Pakistani government tries to promote its services online and compel the users to rely on e-services to do any kind of transaction with the government in order to utilize online services provided by the government of Pakistan; there is little to no effect on the behavior of the internet users to choose e-services over going to brick and mortar public service offices for their work to be done.

Variables	Model I	T-Values	Model II	T-Values	Chronbach's Alphas
E-Cultutrability	043	783	.225***	4.158	.660
Promotion	.117**	2.105	.208***	3.812	.538
Gender	.136**	2.500	081	-1.511	
Age	.028	.495	011	205	
Education	119**	-2.116	067	-1.201	
Profession	094**	-1.695	056	-1.023	
Income	189***	-3.362	.013	.231	

Table 3: Regression Results for Perception and Behavior of E-Government

Model I: DV= Behavior; Model II: DV= Perception

(** p < .01; *** p < .001)

Model II:

In Model II, the value of R Square is .116 which is expressed as percentage multiply by 100. It means that model of this study which includes the independent variables Promotion E-Culturability as well as control variables gender, age, profession, income and education; explain 11.6 % percent of the variance in Perception of the e-services' users. In this study the H1 assumes that E-Culturability has a positive effect on the perception of the users about e-services. Study regressed e-culturability on perception and result demonstrate that perception ($\beta = .218^{**}$, p < .001) is positively related to e-culturability. Regarding H3, the effects of Promotion on the perception of users about online public services is significant ($\beta = .273^{**}$, p < .001) therefore it can be said that H3 is supported and is consistent. The change R Square shows 7.3% variance in perception of people.

Findings of the model shows that with the passage of time as the internet community grows stronger in Pakistan and as the culture of using internet would develop more not only to hang out on social media but also to utilize it for more business-oriented purposes the perception about use of online public services will grow stronger with it. Moreover, as the government would use better marketing strategies to reach out to Pakistani educated community the more likely it is that the perception of internet users would change.

Discussion

The present study identified two variables: promotion and e-culturability that may affect the perception of and behavior to use e-services in Pakistan. According to the results, promotion and e-culturability has a negative effect on the behavior of the use of e-services among the educated Pakistanis who have the know-how of internet usage. They are aware of increase in ease and reduced cost is using e services. The previous researches focused on the benefits of e services usage and has taken negative aspects little into account; whereas the results of this study have compelled us to discuss the barriers of adoption of e-services in Pakistan (Zahid et al., 2022).

The process of making governments into e-governments is neither quick nor simple. Even then, amazing democratization of ICT around the world leads to a discussion on how the developing nations as Pakistan will become a resilient smart country and stand up in the row with developed, western countries having sustainable economic development so to enjoy the subsequent related benefits (S. Khan et al., 2021). According to the UN Global E-government Survey (2016), Pakistan secured 159th rank among the bottom 30 countries of the world including Afghanistan, Myanmar and Timor. The position of Pakistan has been worsening with the passing years as she ranked 158th in 2014 and 156th in the year 2012, whereas the neighboring country has shown a steady upward growth in ranking from 125th in 2015 to 107 in 2016.

The situation however is not all doom and gloom; as it all depends on the nation's political will, regulatory environment and ability of the population to make use of internet. The research states that the adoption of e-government is determined by many factors among which user's familiarity is not that well researched (Abu-Shanab, 2017). Our neighboring country India has already recognized the global shift from e-governance to smart-governance as articulated in the technology vision "Digital India – Road to Smart Governance (Kavta & Yadav, 2017; Mishra et al., 2017; Varghese, 2017).

The test results show that perception of the use of e-services is effected by the gradual cultural development of internet usage along with promotions and marketing of e-services. Even though the perception is being influenced by promotions about e-services, on the other hand, usage of e-services by even the educated public is low and is not being affected by promotional strategies if any or even by the increase in the internet usage culture (S. Khan et al., 2021).

These results show that the perception of e-services usage is being developed as a whole but not the desire for the e-service usage provided by the Government of Pakistan. Whilst the respondents showed general support of e-services on a number of measure, the study shows that the majority of the respondents did not use e-services. It is yet to be found out if it is the general reluctance to use e-services or are the potential users of e-services in Pakistan unaware of such facility as public services available online. Furthermore, the results differ from some of the publish literature; as e-culturability and promotion has no relationship with the behavior of e-services users. This may be because the previous studies applied these factors were applied in for employees' ease of use in relation to technologies in public sector rather than to educated population using e-services (Davis, 1989; Intille et al., 2003). The results indicate some major areas of concerns that need to be addressed. Government should focus on minimizing the barriers to adoption by developing trust relationships and encouraging individuals to e-services.

Firstly, e-government initiatives in Pakistan requires to grow from ambitious ideas into fruitful outcomes (Franke et al., 2015).

E government transformation process in Pakistan depends on how government plans a coherent citizen centric approach and strategizes use of technology to involve businesses, trade associations, scientists, academics and NGOs. Without exploration of new partnerships among government agencies and private sectors, furthermore the input of the above mentioned stakeholders e government is unlikely to succeed. The current design of e-government lack practical implications (Heidemann et al., 2013).

No matter how far the citizens of Pakistan progress in internet usage they will not use online public services that do not respond to their needs. The limited web access, inferior technological infrastructure, limited email capacities and absence of intranet all needs to be addressed at provincial as well as district level (Arfeen & Khan, 2009). Furthermore, most of the e-government projects have failed to meet its deadlines.

Cultures can affect the use of e-government. Holding certain religious beliefs or being of certain background can influence the use of e government (Chen et al., 2006). Load shedding and lack of energy is holding the government back to make the use of e-services time and cost effective. Above the use of ICT is seen as not only a cost-effective and convenient way to access government for information and transaction, but it also has an element of being more open and transparent with the public.

This act automatically kills corruption. However, in Pakistan the corruption is embedded in the core of governance body which is a direct clash with the implementation and enhancement of E-Services in Pakistan. Many nations pursued transparency after World War I as it was a prominent issue worldwide. Transparency is considered as a one of the most essential function of democratic participation and anti-corruption; that is only possible through giving right to access government information to the public of Pakistan (Bertot et al., 2010).

According to a statistical report generated by Pakistan Telecommunication Association (PTA) in February 2017; a total number of social media accounts in Pakistan have crossed about 44 million. Facebook being ahead of the rest at 30 million users across Pakistan, according to PTA in November 2016, Line application stood second with a 7.1 million total number of accounts and Instagram with 3.9 million active users (source: Business Manager Dashboard, 2014).

Twitter and Snapchat trailed behind others with 3.1 million Pakistani account holders as of July 2016 and around 0.4 million users as January 2017, respectively. Moreover, there are about 37 million mobile broadband (MBB) subscribers according to the info given on Phoneworld.com. The use of social media to promote e –government services is a highly interactive tool to reach out to all age groups. Since the use of these applications is drastically changing; hence the policy makers must soften strategies to promote e-services through social media (Zhou et al., 2019).

As per the statistic shared above shows that Pakistan is not lagging behind in technology development, therefore the government of Pakistan need to scale up its investment in promotion and marketing and make use of social media platforms to promote e-services and also to look into how the citizens are being served online in the more developed neighboring countries.

Theoretical Contribution

This study has contributed to an improved understanding of behavior (use of e-services) in Pakistan; such behaviors have been already studied in work settings by information system (IS).

This study attempts to take up the first step towards evaluation of design-oriented concrete action to increase public e-services usage by the citizens of Pakistan; also to find out the factors to fill in the huge gap between e-services availability and usage. Further this study analyze the citizens' interaction with e-government, which focuses on the demand side of e-services; another area that has become a priority issue in scientific research of this field (Gauld et al., 2010).

According to Reddick (2005), the citizen research on e-government needs attention in the literature and mentions the requirement for study to investigate about how to increase usage of e-services among the public.

Conclusion

This study reports on empirical research into the citizen adoption of e-government services in Pakistan. The results show that Pakistan is somehow lagging behind in the adoption of e-government. The analysis reveals that most of the educated citizens are aware of e-government services but do not choose to use them. One main reason is the lack of political stability and transparency in the governance due to which citizens do not have much confidence to switch to the electronic version of services.

E-culturability factor can be enhanced by educating masses about the e-government. Furthermore, social marketing of the services through social media would pave the way for younger generation to opt for it. Moreover, it is important for the government agencies to provide trustworthy services to the public and demonstrate public value that the citizens may gain by using e-government services.

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Conflict of Interest

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References

- Abu-Shanab, E. A. (2017). E-government familiarity influence on Jordanians' perceptions. *Telematics and Informatics*, 34(1), 103-113.
- Afzal, S., Paras, G., & Gangwani, S. (2015). An Examination of Determinants Influencing Consumer Adoption of SMS: A Perspective from Youth of Pakistan. *World*, 6(1).
- Akman, I., Yazici, A., Mishra, A., & Arifoglu, A. (2005). E-Government: A global view and an empirical evaluation of some attributes of citizens. *Government Information Quarterly*, 22(2), 239-257.
- Arfeen, M. I. (2004). Impact of E-Governance on the Economy of Pakistan–The Revolutionary Plan. Nineteenth Annual General Meeting of Pakistan Society of Development Economists, held on,

- Arfeen, M. I., & Khan, N. (2009). Public sector innovation: Case study of e-government projects in Pakistan. *The Pakistan Development Review*, 439-457.
- Asgarova, B. E-Government Technology Transfer Project from Developed to Developing Countries. A Case Study of the Implementation of the ASAN Imza (Mobile ID) in Azerbaijan.
- Belanger, F., & Carter, L. (2008). Trust and risk in e-government adoption. *The Journal of Strategic Information Systems*, 17(2), 165-176.
- Bertot, J. C., Jaeger, P. T., & Grimes, J. M. (2010). Using ICTs to create a culture of transparency: Egovernment and social media as openness and anti-corruption tools for societies. *Government Information Quarterly*, 27(3), 264-271.
- Carter, L., & Weerakkody, V. (2008). E-government adoption: A cultural comparison. *Information Systems Frontiers*, *10*(4), 473-482.
- Chen, Y., Chen, H., Huang, W., & Ching, R. K. (2006). E-government strategies in developed and developing countries: An implementation framework and case study. *Journal of Global Information Management*, 14(1), 23.
- Choudrie, J., & Dwivedi, Y. (2005). A survey of citizensâ€TM awareness and adoption of e-government initiatives, the â€[~]Government Gatewayâ€TM: A United Kingdom perspective. Proceedings of,
- Cohen, J., Cohen, P., West, S. G., & Aiken, L. S. (2013). *Applied multiple regression/correlation analysis* for the behavioral sciences. Routledge.
- Dada, D. (2006). The failure of e-government in developing countries: A literature review. *The Electronic Journal of Information Systems in Developing Countries*, 26.
- Davis, F. D. (1989). Perceived usefulness, perceived ease of use, and user acceptance of information technology. *MIS quarterly*, 319-340.
- Efron, R. (1969). What is perception? Proceedings of the Boston Colloquium for the Philosophy of Science 1966/1968,
- El Baradei, L., Shamma, H. M., & Saada, N. (2012). Examining the marketing of e-Government services in Egypt.
- Franke, R., Krönung, J., Born, F., & Eckhardt, A. (2015). Influential factors for e-government success in the Middle East: Case study evidence from Saudi Arabia. *International Journal of Electronic Government Research (IJEGR)*, 11(1), 39-62.
- Fu, J.-R., Farn, C.-K., & Chao, W.-P. (2006). Acceptance of electronic tax filing: A study of taxpayer intentions. *Information & Management*, 43(1), 109-126.
- Gauld, R., Goldfinch, S., & Horsburgh, S. (2010). Do they want it? Do they use it? The 'Demand-Side' of e-Government in Australia and New Zealand. *Government Information Quarterly*, 27(2), 177-186.
- Ghayur, A. (2006). Towards good governance: developing an e-government. *The Pakistan Development Review*, 1011-1025.
- Gronlund, Ã. k. (2004). State of the art in e-Gov research–a survey. In *Electronic government* (pp. 178-185). Springer.
- Gupta, B., Dasgupta, S., & Gupta, A. (2008). Adoption of ICT in a government organization in a developing country: An empirical study. *The Journal of Strategic Information Systems*, *17*(2), 140-154.
- Heidemann, J., Muschter, S., & Rauch, C. (2013). How To Increase Public E-Services Usage In Governments-A Case Study Of The German Federal Employment Agency. ECIS,

- Intille, S. S., Tapia, E. M., Rondoni, J., Beaudin, J., Kukla, C., Agarwal, S., Bao, L., & Larson, K. (2003). Tools for studying behavior and technology in natural settings. UbiComp 2003: Ubiquitous Computing,
- IT Ministry plans e-office forum. (2014). *Pakistan Press Foundation*. <u>http://www.pakistanpressfoundation.org/2014/05/ministry-plans-e-office-forum/</u>
- Kavta, K., & Yadav, P. K. (2017). Indian Smart Cities and Their Financing: A First Look. In *From Poverty, Inequality to Smart City* (pp. 123-141). Springer.
- Khan, A., Krishnan, S., & Dhir, A. (2021). Electronic government and corruption: Systematic literature review, framework, and agenda for future research. *Technological forecasting and social change*, *167*, 120737.
- Khan, S., Umer, R., Umer, S., & Naqvi, S. (2021). Antecedents of trust in using social media for Egovernment services: An empirical study in Pakistan. *Technology in Society*, 64, 101400.
- Kim, S. S., & Malhotra, N. K. (2005). A longitudinal model of continued IS use: An integrative view of four mechanisms underlying postadoption phenomena. *Management science*, *51*(5), 741-755.
- Kumar, V., Mukerji, B., Butt, I., & Persaud, A. (2007). Factors for Successful e-Government Adoption: a Conceptual Framework. *Electronic Journal of E-government*, *5*(1), 63-76.
- Malodia, S., Dhir, A., Mishra, M., & Bhatti, Z. A. (2021). Future of e-Government: An integrated conceptual framework. *Technological forecasting and social change*, *173*, 121102.
- Mimicopoulos, M. G. (2004). E-Government funding activities and strategies. *United Nations New York*, 19.
- Mishra, A. P., Sen, A., & Kumar, A. (2017). Exploring Potentials and Challenges in Making Smart Cities in India: A Case Study of Allahabad City, Uttar Pradesh. In *Sustainable Smart Cities in India* (pp. 123-142). Springer.
- Ovais Ahmad, M., Markkula, J., & Oivo, M. (2013). Factors affecting e-government adoption in Pakistan: a citizen's perspective. *Transforming Government: People, Process and Policy*, 7(2), 225-239.
- Parveen, S. (2015). Cultural Identity in Pakistani Fiction: A Case Study in Pakistani Culture. *Journal of Literature, Languages and Linguistics*, 8, 82-84.
- Phipps, M., & Brace-Govan, J. (2011). From right to responsibility: Sustainable change in water consumption. *Journal of Public Policy & Marketing*, 30(2), 203-219.
- Reddick, C. G. (2005). Citizen interaction with e-government: From the streets to servers? *Government Information Quarterly*, 22(1), 38-57.
- Ronis, K., & Nishtar, S. (2007). Community health promotion in Pakistan: a policy development perspective. *Promotion & education*, 14(2), 98-99.
- Sabri, A., Sabri, O., & Al-Shargabi, B. (2012). A cultural e-government readiness model. *Intelligent Information Management*, 4(05), 212.
- Sadik-Zada, E. R., Gatto, A., & Niftiyev, I. (2022). E-government and petty corruption in public sector service delivery. *Technology Analysis & Strategic Management*, 1-17.
- Saeed, S. A. M. (2015). Factors Influencing Customer Acceptance of Online Banking in Pakistan and the Moderating Effect of Technophobia. *Journal of Marketing and Consumer Research*, 12, 55-66.
- Siddiqui, S.-u.-R. (2014). E-Government master plan to promote new emerging technologies: Anusha. *Business Recorder*. http://www.brecorder.com/pakistan/industries-a-sectors/191416-e government-master-plan-to-promote-new-emerging-technologies-anusha.html

- Steenkamp, J.-B. E. (2001). The role of national culture in international marketing research. *International Marketing Review*, *18*(1), 30-44.
- Taherdoost, H. (2018). Development of an adoption model to assess user acceptance of e-service technology: E-Service Technology Acceptance Model. *Behaviour & Information Technology*, 37(2), 173-197.
- Tassabehji, R., Hackney, R., & Maruyama, T. (2019). Evaluating digital public services: A contingency value approach within three exemplar developing countries. *Information Technology & People*.
- Tuan, N. M. (2022). Customer readiness–customer participation link in e-services. *The Service Industries Journal*, 42(9-10), 738-769.
- Ujjan, R. M. A., Hussain, K., & Brohi, S. N. (2022). The Impact of Blockchain Technology on Advanced Security Measures for E-Government. In *Cybersecurity Measures for E-Government Frameworks* (pp. 157-174). IGI Global.
- Varghese, P. (2017). Smart-Cities for India: Why not Open-Source Villages? International Conference on Research into Design,
- Venkatesh, V., Morris, M. G., Davis, G. B., & Davis, F. D. (2003). User acceptance of information technology: Toward a unified view. *MIS quarterly*, 425-478.
- Wilson, C., & Mergel, I. (2022). Overcoming barriers to digital government: mapping the strategies of digital champions. *Government Information Quarterly*, 39(2), 101681.
- Zahid, H., Ali, S., Abu-Shanab, E., & Javed, H. M. U. (2022). Determinants of intention to use egovernment services: An integrated marketing relation view. *Telematics and Informatics*, 68, 101778.
- Zhang, N., Guo, X., & Chen, G. (2011). Why adoption and use behavior of IT/IS cannot last?â€"two studies in China. *Information Systems Frontiers*, 13(3), 381-395.
- Zhou, R., Wang, X., Shi, Y., Zhang, R., Zhang, L., & Guo, H. (2019). Measuring e-service quality and its importance to customer satisfaction and loyalty: an empirical study in a telecom setting. *Electronic Commerce Research*, 19(3), 477-499.