Reliability of users as a key factor in Pakistan's long-term e-service adoption: An empirical study

Abdul Rahim Chandio, Ahmed Nawaz Kandharo, Sohail Ahmed Chandio

Government Degree College Mehar, Sindh, Pakistan
chandiorahim@gmail.com

Abstract- This study's objective is to examine how people perceive about the technology. Use by public employees via interpreting the intentional approach of users in Pakistan context. The prevailing research inculcates the behavioral constructs such as "perceived usefulness" (PU), " Trust in technology (TIT), "intention to utilize (ITU)," and "perceived ease of use" (PEOU), together with other relevant considerations, affect how an employee feels about their employer's tendency to utilize modern technology in the public sector. TAM and Technology Acceptance Model and the Unified Theory of Acceptance (UTAUT) are to be applied respectively. Use of Technology is to be incorporated into its theoretical underpinnings, both of which are helpful in determining an employee's intent with regard to the usage of e-government services. The proposed conceptual framework model was empirically tested by using a sampling method to collect 243 responses out of a total of 400 survey items that were distributed among public employees. Data were gathered using the suggested survey questions, which analyzed by using SPSS version 24 and included hypothesis tests validated by multiple regressions and pearson's correlation. According to the findings of the research that was conducted, all of the proposed factors have a positive and significant relationship with the dependent construct intention to use (ITU) e-Government.\and the present research also encircled limitation, practical implications and future direction.

Keywords: E-service, Perceived usefulness, Intention to use, Trust in technology

Introduction

In the prevailing study made the focus on the online technological adoption by the workers of the employees sector and it provides an empirical investigating to analyse user behaviour in relation to how they use e-services within the organization. Therefore, the main focus of the entire discussion of this study is to focus on the final constructs of the intention to use (ITU) e-government, which can help to interpret the level of perception of the e-government users. In the current era of globalization, it is a fact that the vitality and scope of technology in the public sector cannot be denied (Chandio et al., 2018: Al-Rashidi, 2013). The trustworthiness of the users can significantly increase the usage of services of e-government to investigate public employees' adoption of online technology. and it can support to chart out the issues regarding the e-government users in days to come. In this way, the world governments took initiatives to investigate the reliability of the online technology users as a chief scientific weapon to sustain the interaction of a wireless nature of interaction with its stakeholders (Bonk, 2002). Utilizing technology to mobilize the provision of efficient service delivery to public personnel, people, and businesses is shown by electronic services of government (Chandio & Haider, 2018,2019). Main purpose of this study was to recognize the constructs that would influence e-service users' decision-making. The domain's theoretical perspective suggests technological adoption constructs that have an impact on user intentions to utilise e-government. According to the majority of researchers, employees' intentions to utilise the system are significantly impacted by their level of trust in the e-government system (Chandio, 2020; Haider, et al., 2019; Abu Shanab, 2014; Paravastu, et al., 2014).The notion of the users' reliability in the use of e-government is an abstract phenomenon and behavioral approach is a hard task to assess the employees'level of perception in the way to use wireless means of service. According to research trust usually became an important and chief agent for the adaptation of e-government (Abu Shanab, 2014; Mahmood, et al., 2014).The degree of satisfaction of user can become easy to adopt the technological use under the rising trust building of the employees. In this manner, numerous researchers consider the violation of the reliability of the technology user as a dilemma that creates obstacles to adopt e-services of government and turns down the intention of employees to use e-Government (Haider, et al., 2019; Albesher, 2016;Dashti, et al., 2010).

On the basis of previous evidence and significance of online technology in the public sector is important to understand the process of technological adoption whether the parameter of the users reliability is to occupy a significant position on the assumption of technological adoption.Likely, numerous researcherssustain the support of the reliability to overcome the confidential advance in the way of technological adoption (Albesher, 2015; Al-Sobhi, 2011).Trust in e-government designs a bridge between users and system and motivate users to involve effectively to use electronic services (Caldwell, and Hansen, 2010; Lind, 2001).The existing study aims to focus reliability of e-services users and associated constructs to examine if employees intend to use NADRA, a novel system used in the public sector. It is a one-of-a-kind study from a Pakistani perspective to evaluate the problems with a lack of trust and gauge how willingly public employees are willing to adopt new technology within the company. Follow pearson's correlation and multiple regression for testing and data analysis to study it empirically, show the relationship between the dependent construct and independent factors, and learn how independent antecedents (PEOU, PU, and TIT) affect the dependent variable (ITU). The extant study encompasses the future direction and allows the coming researchers to extend the discovery of the intentional approach

of users regarding the use of innovative technology. The existing literature is concerned with domain and proposed model, items or questionnaires of the determinants of the hypothesis, data analysis, and research methodology was discussed.

Literature Review

E-government is a broad discussion in the contemporary scientific age of wireless technology that makes an atmosphere to interlink the online means of services and ensure the provision of digital adaptation. It provides a digital service and represent an innovative technology which applies interlinks the communication by means of wireless technology and e- The government makes sure that users can access online services. 2014 (Abu-Shanab). E-government alludes to the idea of a digital government that gives users access to information electronically in place of the traditional job (Abu-Shanab 2014; Alshehri, et al., 2012). The willingness of users to employ the cutting-edge technology depends on the use of electronic government services. The purpose of using e-services in the public sector under NADRA is to support citizen privacy, which calls for more confidentiality to establish a satisfied population (Ahmad, et al 2012). The use of e-government is in the diverse form which can be categorized into three segments in Pakistan society. Government to citizens (G2C) implies the provision and operation of online service in which citizen interlinks withgovernment departments, and agencies relating to government by means of a wireless technology.

- Government to citizens (G2C): It highlights the interconnectivity of government and citizen by an online means.
- Government to government (G2G); It denotes of an interconnectivity of a public sector to another through a wireless technology.
- Government to business (G2B); It refers to a wireless technology to ensure the provision service delivery in a business sector.
- Government to employee (G2E); It meets to mobilize the transaction of business between public employees and the government.

E-government plays a significant role to assure provision of a useful service of delivery and it is important to comprehend the expectations of the users' demand and supply and requires an a sound plan concerning the online services as provided to stakeholders (Colesca 2009). Demand and supply from users in relation to e-government is applied in two dimensions, where the supply side highlights the pre-requisite for government procedures & User acceptability is relevant to demand (Lim et al., 2012). E-government in the public sector denotes a wireless means of service delivery provided by the government to its public or official servants by means to interconnect and transmit the government instruction. It facilitates the worker to save time, energy, avoidance of a delayed administration and convert man into a digital human capital in a work environment. There is number of concepts of the use of e-government relating to present study as enumerated below:

- The use of e-government can encourage the facilitation and interconnectivity to employees concerning the public sector in Pakistan;
- It can promote the capabilities of the public workers in order to enlighten themselves with innovative technology;
- The use of e-technology can give birth to a digital man and human capital;
- The e-office atmosphere can be promoted and e-participation of the public workers can make a wireless culture in the society;
- The development of e-office depends on the reliability of the users of the technology that requires an investigation to comprehend the perception of the employees;

The multidimensional feature of the relevance of e-government use comes in the varied forms as e-democracy, e-voting, and e-assistant, e-administration, (Wimmer, and Bredow, 2001). (Wimmer, and Bredow, 2001). The previous researchers debate the importance of the trust in government to assimilate with the adoption of electronic service of government (Albesher, 2015; Mahmood, et al., 2014).In this regard, reliability of the e-government users influences employees to adopt e-services (Albesher, 2015; Caldwell, and Hansen, 2010).

Pakistan and e-government

The trustworthiness of the e-service users in the public office in Pakistan can energize the adoption of e-government services. Henceforth it is a perquisite to discover the perceptional stage of the user' reliability pertaining the use of online technologies used in Pakistan's public sector (Chandio, et al., 2018; Siddique 2016). A belief in e-government entails the reliability level and satisfactory approach of the e-service users that is motivates the public employees to adopt the innovative technology in the public sector. the lack of technological adoption in the number of sectors the speedy accessibility and transparency have been violated and administrative accountability ceased to meet the criteria. It is critical timing for government to produce a relationship based on the reliability with the user before introducing the innovative technology in the working atmosphere (Siddique 2016; Naimat et al., 2012).

There are numerous researchers argue that government must produce trust building within departments, business sector , agencies as well as nonprofit organisations. In this perceptive inquiry, the purpose of public employees towards the use of technology is a crucial component in meeting the demand. and supply of technology in the public sector.The existing study borrowed the proposed factors (PU, PEOU, TIT and ITU) to meet the criteria in order to discover the intentional level of the employees in the way to adopt

e-government services. The literature provided the proposed constructs concerning the trust in e-government in Pakistan perspective, which were adopted by the earlier researchers uses as PEOU, PU, and ITU) (Anwer, 2016; Albesher, 2015; Abu-shanab, 2014; Rehman,. et al., 2012).

The prevailing study investigates the employees' level of intention regard NADRA's utilisation of e-government services in the public sector.The conceptual framework model of this contains the proposed determinants to assist in investigating employee behaviorrelating the adopting e-government in Pakistan.The emergence of the ministry of technology in Pakistan in 2000 mobilized the use of e-services under the supervision of the ministry (Chandio, et al., 2018; and Rahman 2010).The adoption of e-government in Pakistan faces the number of challenges that requires an effective campaign and efforts in order to make it adoptable in the country. therefore, Pakistan's government brought certain efforts in use and created a sense of the realizing the regarding the importance of the technology use in order to make the system able to be utilized to operate technology in an standard criteria (Chandio, et al., 2018; Haider et al., 2016).In addition, number of initiatives have been taken and awareness materialized by the Government of Pakistan at some extant to launch e-government projects. Likely, research argue that government is creating various e-government schemes with its five-year plans and it encourages to ensure the provision of electronic services to become a cost effective for citizens (Chandio, et al., 2018; Haider et al. 2016).

Adoption of E-government and Technology adoption theory

The current study assists to investigate the perceptional approach of employees of the government workers particularly in NADRA to adopt the use of e-government technology. The proposed constructs were applied by the researcher in order to explore the intention of the use of innovative technology (Albesher, 2015; Abu-shanab, 2014).The researcher like (Albesher, 2015; Gilbert, et al., 2004) support the argument that user confidence and satisfactory can help to adopt the e-government services and it results to achieve the triumphant of e-government schemes. The literature of the existing study is concerned the related factors of the intention and behavior of employees to use e-government and it can highlight the trust building of the e-government users in order to build quality management in the public sector.

In this scenario, the failing of the public assuranceturns down user trustworthiness from the government that could allow the rise of a contradictory approach (Albesher, 2015; Caldwell, and Hansen, 2010). The construct perceived ease (PEOU) deeply impact the perception of employees and highlight the intentional level regarding the easiness of the technology use. The researcher give the definition of the construct perceived ease of use (PEOU) that implies it as a degree of reliability of the users' to perceive the system effortless and useful to use (Warkentin, et al., 2002).There are a number of earlier of works in which trust has been recognized as a significant construct affecting the intention to use e-government (ITU) (Albesher, 2015; Mahmood et al., 2014). The factors (PEOU, PU) have been measured with ITU by the researchers in developed countries to give the significant relationship between these determinants(Phang, et al., 2005).Theresearch proposedin the TAM model is to encompass the well-known model constructs as (PEOU and PU) in anticipation with intention to use e-Government (ITU) (Davis, et al. 1989).Likely, in the model of TAM the determinants PEOU and PU manipulate an individual's attitude toward using the system, which influences the individual's behavioral intentions to use the innovative technology, and in turn it reveals the actual use of the system.

The hypothesis proposed is that the cultivation of reliability, (PEOU, PU, and SI) affects the intention to use e-services (Albesher, 2015; Phang, et al., 2005). In addition, it has been argued that the use of intention (ITU) of e-government connects user perceptions with e-government, and it is influenced by determinants as (PU and PEOU) (Warkentin, et al., 2002).Perceived usefulness (PU) is an attitude of user of information technology in the public sector to considerthe systema fruitful in terms of performance of the function.In the context of e-government adoption numerous researcher follow the behavioral construct asPU to indicat the intentional level of users (Abu- Shanab, 2010). Moreover, various researchers measure the factor PU with PEOU with intention to use (ITU) in order to discover the affect on the users' attitude to use e-government technology (Abu- Shanab, 2014; Al-Omari, et al., 2012). The Factor intention to use (ITU) suggests that the purpose and social viewpointregarding to use electronic services of government by a consumer, customer and customer. Intention to use refers to a perception of user to adopt the website over the next few days. The term "intention" refers to perceptions that relate to people in a way that employs e-government.

The numerous theories help to investigate the user's intentions concerning the adoption of technology. In the previous studies paid attention on the perception and trust of user to use innovative technology and the supportive theories like TAM models, TRA, Diffusion of Innovation (DOI) and UTAUT model meet the criteria and shown valuable implications for individual intentions to use technical services (Huang and Bwoma, 2003; Venkatesh, 2003; Davis 1989; Fishbein and Ajzen,1975). The construct intention to use (ITU) is a influential determinant to generate the users' perception to adopt electronic services and it is an dependent factor to highlight user's intentions can support trust and outcome will be positive in the hypothesis.

The model of the conceptual framework

The current study's proposed model is based on a few theories about the subject matter, specifically the TAM and UTAUT models (primary theories around the topic). The PEOU and PU theory as in (TAM) and behavioural intention as in the UTAUT model served as the foundation for the recommendations made in this study. The hypothesised determinants of independent (PEOU, PU, and TIT) have an impact on the dependent factor intention to use and have been taken from the theories mentioned above. By determining the

degree of perception of the technology user, the study offered a number of hypotheses that could influence the confidence in e-government.
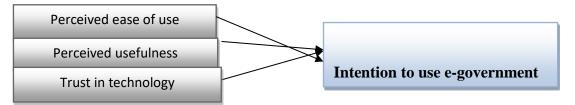

Figure 1. Model for a conceptual proposal
H1. The relationship between the PEOU and ITU is in a positive and significant manner.

The current study demonstrates the significant and positive relationship with thevariable in independent and dependent factor such as PEOU and ITU. Moreover, the current study emerge in the line of the earlier researcher studies (Chandio, 2020; Albesher, , 2015; Abu Shanab, 2014).

H2. The relationship between the PU and ITU is in a positive and significant manner.

The construct PU is a powerful factor has been applied in the number of research works and theories with slightly modification in its nomenclature (Albesher, 2015; Thompson et al. , 1991).The construct perceived usefulness applied as an indicator in a study of the researcher and it is to be used to measure the PU,and PEOU with the intention to use (ITU) directly as well (Chandio, 2020; Abu shanab 2014; Hung, et al., 2013; Al-Omari, et al., 2012).

H3: The TIT and ITU have a considerable positive association.

In previous studies, it is termed TIEG due to the influence of the construction: TIG and TIT (Abu Shanab 2014; Shajari andIsmail, 2012; Schwab, 2010). The present study focuses on building faith in technology & ignores the intention point of online technology users in the public sector of Pakistan.

Results and discussions

Quantitative methods and survey research are incorporated into this study. Though, theexisting method has already been used by other researchers in the field (Al-Bashir, 2015; Abu-Shanab, 2014; Thompson, 2014). In the first step, the proposed elements are checked to suit and match the study.A five-point scale has been followed in thestudy in which it encompass the ingredients as (1 for Strongly Disagree, 2 for Disagree, 3 for Neutral, 4 for Agree, 5 for Strongly Agree) that assist to collect the data and researcher distributed a package of the survey questionnaire. In the table 3 highlights the means and the standard deviation of the proposed variables' elements. The current study possesses the sixteen items to be used to discover the intention of users to use system. Three percentages above average are appropriate, while all proposed items exceed three. He explains that innovative technology is gradually being adopted in the public sector due to the risingimportance of globalization and use of information technology in Pakistan.

Variables	Description	Frequency	Percentage
Gender	Male	197	81.1
	Female	46	18.9
Age	21-30	36	14.8
	31-40	153	63.0
	41-50	39	16.0
	51-60	15	6.2
Marital Status	Single	67	27.6
	Married	162	66.7
	Divorced/widow	14	5.8
Education	Bachelor	100	41.2
	Master	137	56.4
	M.Phil/ P.hd	6	2.5
Job Experience	Less than 1 year	93	38.3
	1-5 years	128	52.7
	6-10 years	18	7.4

	11-15 years	4	1.6
Number of dependents	1-2	83	34.2
	3-4	68	28.0
	5-6	15	6.2
	7+	2	.8
	NONE	75	30.9

Table 2: Demographic Characteristics

Item statement (short description in English)	Mean	SD
Q1: I make intention regarding the use of e-government (ITU) system in the public sector.	3.675	.9563
Q2: I is to be expected to apply the use of electronic government systems (ITU)	3.7325	.84700
Q3: I make a plan for using the electronic government systems (ITU)	3.6996	.86021
Q4: it will become easy for me to use e-government system in the public sector NADRA (PEOU)	3.6543	.83558
Q5: It becomes an effortless for me for gettingas my need urge me for using electronic government. (PEOU).	3.7078	.75585
Q56: It would be an effortless to me to incorporate the skills for using the system (PEOU).	3.7778	.72157
Q7: I would realize and consider the use of electronic system and make it to be flexible in order to materialize interaction with others (PEOU).	3.8025	.73439
Q8: By and large, I consider the use of electronic services an easy task to be used by me (PEOU).	3.8230	.75894
Q9: The use of E-government services can assist me to meet my task and finish things in a speedy manner (PU).	3.8560	.74401
Q10: The service provided by the E-government system would make easy my job to meet the common goal (PU).	3.7654	.77574
Q11: By the use of e-services I can improve the performance of my job (PU).	3.7942	.77062
Q12: The use of e-government system can be useful in my job (PU).	3.8395	.73502
Q13: By the use of electronic government technology it can promote my productivity (PU).	3.8230	.78570
Q14: I trust the security of the Internet (TIT)	3.6996	.73594
Q15: I make trust on the wireless technology when I apply it in public sector transactions (TIT)	3.6049	.68657
Q16: I materialize my trust on online technology when it is used by me (TIT).	3.8025	.75656
Valid N (listwise)		

Table 3. The mean and standard deviations of survey items

It is important to examine the correlation between variables to investigate multiple correlations. In this way, experiments were performed to evaluate the independent and dependent variable relationships through Pearson correlations. The results point out a significant relationship at the 0.1 level, and this model is supported by a consistent model.

	ITU	PEOU	PU	TIT
Intention to use (ITU)	1			
Perceived ease of use (PEOU)	.548**	1		
Perceived usefulness (PU)	.589**	.536**	1	
Trust in technology (TIT)	.564**	.493**	.470**	1

Table 4: Pearson correlation

Al Jamayah Al-Bayani (.470 to .589) permits you to be at home with PU (.589) and PEOU (.549)and TIT (.564_.493). Relative interconnection between PU and ITU (.589 **) is the regional area of interconnected social benefits (.470). The Multiple regression analysis show independent and dependent variables effects and testing hypothesis. On the basis of the regression results, all hypotheses were successfully developed.

Research methodology

The present study uses a philosophical approach and it contains the cross-sectional deductive survey. Moreover, it inculcates the positivism Quantitative research methodology. There is structured measurement to be adopted from the domain literature for assessing the perception of user in thepresent context. Though, extant method has been adopted earlier and it was used by numerous searchers with the concerned domain researchers (Albeshar, 2015; Abu-Shanab, 2015; Thompson, 2014).

The survey questionnaire and sampling process

In this study questionnaire survey have been articulated that contain the three major sections as research objectives and area. Likely, it pursues the importance of respondents relating to public sector employees for instance NADRA, for collecting the data among the employees of middle and lower level.In the coming section, questionnaire related to demography are included in the prevailing study.

Lastly, there are 23 items to be included in order to measure the 3 constructs. The proposed items were applied by the earlier researcher as (Albeshar, 2015; Abu-Shanab, 2014).

Employees of the public sector, such as NADRA, who help determine employees' intentions to use e-government services within the company, make up the population for sampling in the current study. From this vantage point, this study revolves around the NADRA staff in the Sindh province of Pakistan (Larkana, Kambar, and Dadu regions). a 400-person survey The respondents were given questionnaires, and 243 of them responded, which satisfies the 60.75% threshold. Around 650 individuals are reportedly employed in the Larkana, Kambar, and Dadu areas. A five-point Likert scale was used to collect the data, and participants' agreement was obtained voluntarily. For sampling, the guidelines of Krejcie and Morgan (1970) were followed in this investigation. Additionally, experiments testing theories were done. The Pearson's Correlation test was used in this perspective to determine the link between independent and dependent variables, and multiple regression analysis was used to determine the impact of independent and dependent components.

Conclusion

The current study seeks to understand how employees perceive using services of e-government in the public sector. The postulated factors (PEU, PU, and TIT) to influence the purpose to use are covered by the current study (ITU). In this study, the variables proposed (PEOU, PU, TIT, and ITU) are focused on the area of technology adaption. To demonstrate the considerable positive association between the dependent variable intention to use and the independent variables PEOU, PU, and TIT, three independent constructs were used to model the intention to use. The relationship between the independent variables and the dependent factor serves as the foundation for the hypothesis. The study's findings showed a substantial positive link between the independent and dependent variables. The current study focuses on a conceptual framework model that will be statistically evaluated through an empirical method in order to ascertain how employees in Pakistan intend to use e-government services under the current working conditions. Accordingly, all determinants had a correlation of (.470 to.589), and regression analysis was used to determine how the independent variables' effects on the dependent variable were influenced by the beta, or "t" values, of the proposed constructs. In this study, 400 questionnaires were given out to lower and medium level employees. 243 sampling was employed for data analysis, and SPSS version 24.0 was used. Overall survey questionnaire reliability was. 914 in this study.

Research Implication(s), Limitation(s) & Direction for Future

The current study could contribute to a body of general literature from Pakistan regarding NADRA's adoption of technology in the form of e-government. Additionally, the current study can help to reveal employees' intentions for using cutting-edge technology. This may be useful to understand employee position in terms of technical acceptance. The current study's findings advise the government to support technological information measures in the public sector and to promote public understanding of technology use. Verifying employee trust is also beneficial since it enables the core reason of the technology adoption conundrum to be identified. This study is cross-sectional, with respondents' voluntary involvement and data coming from a single source. As more data is gathered from respondents using a questionnaire based on subjective self-report, reliability and validity issues may worsen. Building trust among employees in connection to technological innovation may interact differently with individual user emotions inside a business. Future studies can broaden the region on a national scale using the same tools without having to concentrate on the province's particular cities. Because Asia has comparable social and cultural norms, future researchers can confirm the study's approach there.

Reference

Abdulaziz Albesher, (2015), "Trust as a Source of Long-Term Adoption of E-government". *Ph.d dissertation*, Brunal university, London.

Abu-Shanab, E. (2014), "Antecedents of trust in e-government services: an empirical test in Jordan", *Transforming Government: People, Process and Policy*, Vol. 8 no. 4 pp. 480– 499.

Ahmad, M. O., Markkula, J., & Oivo, M. (2012). Factors influencing the adoption of e government services in Pakistan. In *European, Mediterranean & Middle Eastern conference on information systems* (pp. 118-133).

Al-Naimat, A., Abdullah, M., Osman, W. and Ahmad, F. (2012), "E-government implementation problems in developing countries", *2nd World Conference on Information Technology (WCIT-2011), a Publication of AWER Procedia of Information Technology & Computer Science, Antalya*,Vol.1,pp.876-881.

Al-Rashidi, H. (2013). *The role of internal stakeholders and influencing factors during the phases of e-government initiative implementation* (Doctoral dissertation, Brunel University, School of Information Systems, Computing and Mathematics).

Alshehri, M., Drew, D. and Alfarraj, O. (2012), "A comprehensive analysis ofe government services adoption in Saudi Arabia: obstacles and challenges, (IJACSA)" *International Journal of Advanced Computer Science and Applications*, Vol. 3 No. 2, pp. 1-6.

Al-Sobhi, F. (2011) The roles of intermediaries in the adoption of e-government services in Saudi Arabia Brunel University, School of Information Systems, Computing and Mathematics.

Bonk, C. J. (2002). *Online training in an online world*. Bloomington, IN: CourseShare. com.

Caldwell, C. and Hansen, M.H. (2010) 'Trustworthiness, governance, and wealth creation', Journal of Business Ethics, 97(2), pp. 173-188.

Chandio, A. R. (2020). Factors Influencing Intentions to use Digital Learning during COVID 19 Outbreak in Sindh: An Empirical Study. *International Journal of Distance Education and E-Learning*, 6(1),8395.**DOI:** https://doi.org/10.36261/ijdeel.v6i1.1423.

Chandio, A. R., Haider, Z., Ahmed, S., Ali, M., & Ameen, I. (2018). E–GOVERNMENT IN PAKISTAN: FRAMEWORK OF OPPORTUNITIES AND CHALLENGES. GSJ, 6(12).

Colesca, S. (2009), "Increasing e-trust: a solution to minimize risk in e government adoption", *Computer Science and Software Engineering*, Vol. 2 No. 12, pp. 19 27.

Dashti, A., Benbasat, I. and Burton-Jones, A. (2010) 'Trust, felt trust, and egovernment adoption: a theoretical perspective', *Working Papers on Information Systems,* 10(83).

Davis, F., Bagozzi, R. and Warshaw, P. (1989), "User acceptance of computer technology: a comparison of two theoretical models", *ManagementScience*, Vol. 35 No. 8, pp. 982-1003.

Davis, F.D. (1989), "Perceived usefulness, perceived ease of use, and user acceptance of information technology", *MIS Quarterly,* Vol. 13 No. 3, pp. 319-340.

Fishbein, M. and Ajzen, I. (1975) Belief, attitude, intention and behavior: An introduction to theory and research.

Gilbert, D., Balestrini, P. and Littleboy, D. (2004) 'Barriers and benefits in the adoption of e-government', *International Journal of Public Sector Management*, 17(4), pp. 286-301.

Haider, Z., Rahim, A., & Aslam, F. (2019). Antecedents of Online Banking Adoption in Pakistan: an Empirical Study. *International Research Journal of Arts & Humanities (IRJAH)*, 47(47).

Huang, Z. and Bwoma, P.O. (2003) 'An overview of critical issues of e government', *Issues of Information Systems*, 4(1), pp. 164-170.

Hung, S. Y., Chang, C. M., & Kuo, S. R. (2013). User acceptance of mobile e-government services: An empirical study. *Government Information Quarterly*, 30(1), 33-44.

Krejcie, R. V. and Morgan, D. W. (1970), "Determining sample size for research activities", *Educational and Psychological Measurement*, vol. 30, pp. 607 610.

Lim, E., Tan, C., Cyr, D., Pan, S. and Xiao, B. (2012), "Advancing public trust relationships in electronic government: the Singapore e- ling journey", Information Systems Research, Vol. 23 No. 4, pp. 110-1130.

Lind, E.A. (2001) 'Fairness heuristic theory: Justice judgments as pivotal cognitions in organizational relations', Advances in organizational justice, 56, pp. 88.

Mahmood, M., Osmani, M. and Sivarajah, U. (2014) 'The Role of Trust in EGovernment Adoption: A Systematic Literature Review', *Twentieth Americas Conference on Information Systems, Savannah*.

Omari, H.A. and Omari, A.A. (2006) 'Building an e-Government e-trust infrastructure', *American Journal of Applied Sciences*, 3(11), pp. 2122.

Paravastu, N., Gefen, D. and Creason, S.B. (2014) 'Understanding Trust in IT Artifacts: An Evaluation of the impact of Trustworthiness and Trust on Satisfaction with Antiviral Software', *ACM SIGMIS Database*, 45(4), pp. 30- 50.

Phang, C.W., Sutanto, J., Li, Y. and Kankanhalli, A. (2005), "Senior citizens' adoption of e-government: in quest of the antecedents of perceived usefulness", *paper presented at the 38th Hawaii International Conference on System Sciences, Big Island, HI, January 3-6. rmation Technology.*

Professor Klaus Schwab (2010), "The Global Competitiveness Report 2010–2011: Highlights" World Economic Forum Geneva, Switzerland 2010.

Rehman, M., Esichaikul, V., & Kamal, M. (2012). Factors influencing e government adoption in Pakistan. *Transforming Government: People, Process and Policy*, 6(3), 258-282.

Shajari, M., & Ismail, Z. (2012, February). Trustworthiness: A key factor for adoption models of e-government services in developing countries. In *2012 International conference on education and management innovation (IPEDR), Singapore* (Vol. 30, pp. 22-26).

Siddique, W. (2016), Critical Success Factors Affecting E-Government Policy Implementation in Pakistan, *JeDEM,* vol. 8. no. 1. pp. 102-126.

Venkatesh, V., Morris, M.G., Davis, G.B. and Davis, F.D. (2003) 'User acceptance of information technology: Toward a unified view', *MIS quarterly,,* pp. 425-478.

Warkentin, M., Gefen, D., Pavlou, P. A., &Rose, G. M. (2002). Encouraging citizen adoption of e-government by building trust. *Electronic markets*, 12(3), 157-162.