ADOPTION OF E-GOVERNMENT SERVICES IN PAKISTAN: WHAT'S MISSING?

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ABSTRACT

Governance when combined with information and communication technologies, it becomes powerful tool for the government. The study has focused IT education and the adoption of e-government in Karachi. Four main factors contribute to e-governance that comprise of e-administration, e-services, e-citizens and e-society. Governments around the world are unleashing the benefits of ICT by integrating it with the system of governance. E-government adoption among the citizens of developed and underdeveloped countries have substantial differences due to educational levels and more specifically the level of IT education. The developed nations have more ease when it comes to such innovative technological solutions for governance because they have the required computer self-efficacy, trust in government and the internet, awareness and the required social influence which encourages the citizens to adopt the e-government services. On the other hand, developing countries lack such education, trust, and most of the times the social influence to use e-government services. The researchers have concluded using one-sample test that all the variables are significant except Trust in Government. The mean difference for all the variables is positive and thus our hypotheses is accepted. Regression results are different and shows that the performance expectancy is highly significant and positively influences e-government adoption among citizens. The study will be helpful in improving the factors that contribute to the e-government services adoption in Pakistan.

Keywords: E-government, Information and Communication Technology, Education

JEL Classification: H1, L81

1. INTRODUCTION

The world has experienced a population explosion in the recent times. There are more people living on earth than ever before. Bad governance issues are erupting frequently. The term governance is defined by the World Bank as "the way power is exercised through a country's economic, political, and social institutions". The term electronic-governance or e-governance as defined by UNDP involves governments to strengthen governance processes by investing in Information and Communication Technologies (ICTs). In this way, people get empowered by using internet to communicate with the government. Among the modern ICTs, mobile phones usage requires only basic literacy and thus it paves the way in the developing world for it to be used as a modern ICT tool to expand stakeholder participation. Education is said to be the key to adopt the use of modern tools which involves the use of information technology (IT).

1.1 Rationale of the Study

Governance becomes challenging for the governments without using information technology (IT) because it has to reach to every stakeholder especially the ever growing citizens. Today, Information & Communication Technology (ICT) is playing a very favorable role by facilitating individuals, businesses, institutions and governments[1]. Governments around the world are unleashing the benefits of ICT by integrating it with the system of governance. The ways to adopt such tools require the basic literacy which the developing world lacks. The education levels in these developing countries are alarmingly low as compared to the developed countries. The current fusion of ICT with

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[1] Goransson, B., and D.D.N Diep. (2016). "Bridging the Digital Divide: The role of Scientific and Technological Information Stations in Rural Areas of Doing Nai Province, VNU." *Journal of Science: Policy Management Studies* 32 (2).

mobile technologies has the potential to uplift the social and economic status of the economies around the world[2]. The Government of Pakistan has already implemented the IT Policy and Action Plan 2000 in August 2000. Later, an Electronic Government Directorate (EGD) was formed within the Ministry of Science and Technology. National E-Government Council (NEGC), in 2005 accepted the "E-Government Strategy Five Year Plan."

1.2   Evolution of E-Government in Pakistan
The use of ICT particularly the internet and now Web 2.0 which includes social media, mobile & wireless technologies have helped the governments in disseminating the information among different stakeholders which includes citizens, private institutions and public institutions. The Government of Pakistan is using the same tools to directly connect to the stakeholders by using the ICT but the question remains that whether such efforts by the GoP paves the way to use e-government services when the literacy levels and education in IT are at lower levels.

E-government adoption among the citizens of developed and underdeveloped countries have substantial differences. The developed nations have significant ease when it comes to such innovative technological solutions for governance because they have the required computer self-efficacy, trust in government, internet awareness and the required social influence which encourages the citizens to adopt the e-government services. On the other hand, developing countries lack such trust, computer self-efficacy, and most of the times the social influence because of lack of perceived awareness about the benefits from such usage of e-government services.

1.3   Benefits of E-Government
The benefits of e-governance are ample for the countries that adopt it. Mainly, the benefits are related to cost reduction, speed, transparency and accountability. When it comes to Speed – Technology makes correspondence speedier. Web, Phones, Cell Phones have lessened the time taken in typical correspondence. Similarly, cost reduction for the Governments in the shape of lesser usage of paper-based correspondence which coupled with the continuous procurement of stationary, printers, PCs, and so forth. Internet and mobile phones provide benefit by making correspondence less expensive providing significant cash for the Government.

Transparency is also achieved by the use of ICT. All the data of the Government would be made accessible on the web. The residents can see and use the information at whatever point they demand to see. In any case, this is just conceivable when each snippet of data of the Government is transferred on the web and is accessible for general society to examine.

1.4   Research Objectives
Current administering process of the government leaves numerous approaches to disguise the data from the general population. ICT makes the data accessible through web based platforms and thus eliminate any possibility of hiding the information from the citizens. When there is transparency then automatically the government is accountable for everything it does. It is answerable to the general population. Ultimately, accountability makes the Government responsible.

1.5   Research Questions
    1. Whether the policies adopted by the government of Pakistan for the implementation of e-government are useful in improving the adoption of e-government by the citizens and businesses of Pakistan?
    2. What are the factors which require more efforts by the government to increase the adoption of e-government services to the masses?

1.6   Structure of the Study
The study is divided into five chapters. Introduction is chapter number 1 which is followed by chapter 2; Review of Literature. Third chapter is Research Methodology and data analysis is done in chapter number 4 followed by conclusion and recommendations in chapter 5.

2.   REVIEW OF LITERATURE
The adoption of information communication technology for the purpose of administering and governing is not a straightforward issue, there are benefits associated with such adoption but there are challenges and problems as well.

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[2] Blackman, K.C Zoellner, D.S. McCrickard, J. Harlow, W.W. Winchester III, J.L Hill, and Estabrooks. (2016). "Developing Mobile Apps for Physical Activity in Low Socioeconomic Status Youth." *Journal of Mobile Technology in Medicine* 5 (1): 33-34.

The government's use of technology, mainly web-based internet applications improves the exchange of information from government to citizens, businesses, government employees, government agencies and other government entities[3]. The mutual exchange of information through technology enables e-governance and can be used as a tool for good governance. E-governance is divided into government and business, government and citizen, government and government. The key principles and goals of e-governance are to increase transparency, information access, effectiveness, participation and engagement of citizens. The achievement of these goals complement good governance. Since the mid-1990s, numerous specialists assert that a basic move has occurred with respect to administering, association and strategies for working in the general public and that there is a development of the direction and execution of approaches from the focal government to different levels and social circles. In specific cases it is contended this is the aftereffect of formal arrangement choices, while in different cases it is increasingly the consequence of a natural and flighty advancement. A focal legislative sort of control alludes to the formal institutional process working at the national level to keep up open request and encourage aggregate activity.

The advancement is that today's general public is said to be complex to the point that no single performing artist figures out how to guide and arrange all alone, and along these lines administration models that unite an expansive number of players on both sides of the outskirt amongst private and open circles are looked for. In the meantime, disclosure in lawmakers is low, which has brought about a developing enthusiasm for types of administering that are based on acting members from outside the circle of government officials. Moreover, it is contended that the swing to a neo-liberal society in numerous nations, especially in Great Britain and the U.S., has made a need to discover arrangements so as to give subjects an indistinguishable open administration from before however with diminished expenses for people in general part.

There are different views of researchers of the individual citizen in e-government.

In this way, as per these researchers, the perspective of the national in both e-administration and e-government settings is more identified with clients as opposed to residents having rights and obligations.

According to Ajzen and Fishbein behavioral hypothesis. The model is to be viewed as the foundation of studies related with state of mind conduct and it is broadly utilized as a part of scholarly and business research[4]. The theory of reasoned action (TRA) has two determinants on expectation demeanor toward conduct and subjective standards related with behavior.

General research intention theory used to predict the human behavior[5]. Further, it is claimed that the theory is applied by researchers in information systems to check the factors in IT innovation-usage behavior. Literature which is related to technology acceptance studies with the theory of reasoned action.

The Theory of planned Behavior (TPB) was shaped and was proposed as an expansion to the TRA[6]. The TPB presented a third independent determinants of expectation, called perceived behavior control, notwithstanding the two TRA determinants[7]. It was proposed to impact behavior, attitude towards use, subjective norms and perceived behavior patterns. TPB gives valuable reasonable system or managing complexities of human social conduct, joining and characterizing the two ideas – social and behavioral sciences such that takes into account forecast and comprehension of specific practices in particular settings. Scientists have contended that a high extent if difference in conduct is controlled by intentions and perceived behavioral control.

UTAUT model, which is called the Unified Theory of Acceptance and Use of Technology (UTAUT) is adopted from previous studies because it has higher variance percentage (70%) in comparison to others[8]. The model has following dimensions:

1. PE Performance Expectancy
2. EE Effort Expectancy

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[3] McClure, D. L. (2000). Statement of David L. McClure, U.S. General Accounting Office, before the Subcommittee on Government Management, Information and Technology, Committee on Government Reform, House of Representatives

[4] Ajzen, I, and M Fishbein. 1980. Understanding attitudes and predicting social behavior. Engledwood Cliffs, NJ Prentice-Hall.

[5] Ibid,

[6] Ajzen, I. 1991. "The Theory of Planned Behavior." Organizational Behavior and Human Decisions Processes 50 (2): 180.

[7] Ibid, 184

[8] Alshehri, M., S. Drew, and O. Alfarraj. 2012. "A Comprehensive Analysis of E-Government Services Adoption in Saudi Arabia: Obstacles and Challenges." International Journal of Advanced Computer Science and Applications 3 (2): 1-6.

3. SI   Social Influence
4. FC   Facilitating Condition
5. BI   Behavior Intention
6. TG   Trust in the Government
7. TI   Trust in the Internet

The above constructs are used to find out the impact on the behavior intention to use e-government services.

3.   RESEARCH METHODOLOGY

The first step was to develop the research model by using the literature already available on the UTAUT. On the basis of the literature and conceptual framework well defined hypotheses have been introduced.

Since the purpose of the study is to analyze the behavior intention to use e-government services by the citizens of Pakistan the researchers used quantitative data collection by using online questionnaires. The online data collection method helped in the collection of data in the most cost and time efficient mode. The online questionnaires are effective in terms of reducing interviewer bias.

A sample of 44 respondents is gathered as a pilot test. The pre-testing results are included in this research. The comprehensive research will follow when the responses will be sufficient to apply Structural Equation Modeling (SEM).

The non-probability convenience sampling is used due to the limitations of time and resources and the study is limited to the working class with knowledge of computers. The collected data was transferred to MS Excel where it was cleaned and formatted to be used on SPSS 22 for the statistical analysis.

The research model is selected on the basis of past literature and research hypotheses are formulated. UTAUT model, which is called the Unified Theory of Acceptance and Use of Technology (UTAUT) is adopted from previous studies because it has higher variance percentage (70%) in comparison to others [9]. The model has following dimensions:

Performance expectancy, effort expectancy, social influence, facilitating condition, behavior intention, trust in the government, and trust in the internet.

3.1   Instrument Development

These constructs are used to find out the impact on the behavior intention to use e-government services. A 7-point Likert scale is used for the purpose of fetching the data from the respondents.
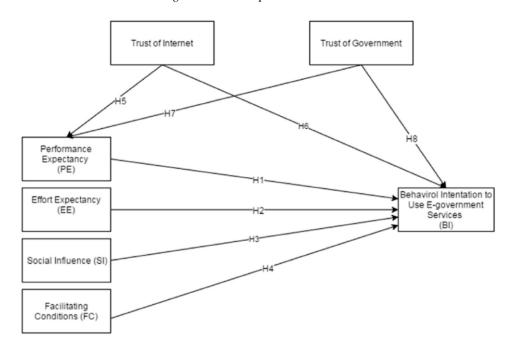
Figure 3.1: Conceptual Framework

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[9] Alshehri, M., S. Drew, and O. Alfarraj. 2012. "A Comprehensive"

Following hypothesis will be tested:

H1: Performance Expectancy (PE) positively influences on Behavior Intention (BI) for the use of e-government services
H2: Effort Expectancy (EE) positively influences on Behavior Intention (BI) for the use of e-government services
H3: Social Influence (SI) positively influences on Behavior Intention (BI) for the use of e-government services
H4: Facilitating Conditions (FC) positively influence on Behavior Intention (BI) for the use of e-government services
H5: Trust in the Internet (TI) positively influences on Performance Expectancy (PE)
H6: Trust in the Internet (TI) positively influences on Behavior Intention (BI) for the use of e-government services
H7: Trust in the Government (TG) positively influences on Performance Expectancy (PE)
H8: Trust in Government (TG) positively influences on Behavior Intention (BI) for the use of e-government services

In the data analysis section reliability statistics will be calculated which will be followed by correlation analysis, one-sample t-test and regression analysis. Finally, the results will be interpreted followed by discussion and recommendations.

4.   FINDINGS

Table 4.1: Demographic Information

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Male	30	68.2	68.2	68.2
	Female	14	31.8	31.8	100.0
	Total	44	100.0	100.0	

The table 4.1 shows that there were total 44 respondents in which 68.2% were males and 31.8% were females.

Table 4.2: Educational Background

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Bachelors	17	38.6	38.6	38.6
	Masters	27	61.4	61.4	100.0
	Total	44	100.0	100.0	

According to the table 4.2, 38.6% of students were of Bachelor degree programs and 61.4% of the respondents were Master's degree students.

Table 4.3: Occupation

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Student	9	20.5	20.5	20.5
	Private Job	25	56.8	56.8	77.3
	Government Job	1	2.3	2.3	79.5
	Looking for Job	3	6.8	6.8	86.4
	Self-Employed	6	13.6	13.6	100.0
	Total	44	100.0	100.0	

Out of the total 44 respondents, only 2.3%, 6.8% and 13.6% were doing government jobs, looking for jobs and self-employed respectively. Whereas, 20.5% were students and 56.8% were doing private jobs.

Table 4.4: Filer of Tax Returns

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	14	31.8	31.8	31.8
	No	20	45.5	45.5	77.3
	Don't Know	10	22.7	22.7	100.0
	Total	44	100.0	100.0	

The respondents who were the filer of tax returns were 31.8%. 45.5% of the respondents did not file for tax returns and 22.7% didn't know about tax return filing. The table 4 gives a glimpse of use of e-tax system by the citizens of Pakistan. Majority of the respondents around 68%, as shown in the above table were non-filers of tax returns or didn't know what it is.

Table 4.5: Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
Performance Expectancy	44	2	7	5.39	1.351
Effort Expectancy	44	1	7	5.07	1.500
Social Influence	44	1	7	4.77	1.309
Facilitating Condition	44	1	7	4.89	1.401
Behavior Intention	44	1	7	5.45	1.532
Trust in Government	44	1	7	4.39	1.728
Trust in the Internet	44	2	7	4.80	1.340
Valid N (listwise)	44				

The table 4.5 shows the minimum, maximum, mean and standard deviation of the key variables used in the research. The mean is greater than 4 for all the above variables which shows that the results are closer to slightly agree and not neutral.

Table 4.6: Reliability

	Cronbach's Alpha
Performance Expectancy	.903
Effort Expectancy	.907
Social Influence	.901
Facilitating Condition	.902
Behavior Intention	.905
Trust in Government	.927
Trust in the Internet	.903

The cut-off points for the reliability statistics are excellent (0.90 or 90% or above), high (70% - 90%), high moderate (50% - 70%), and low (50% and below). All of the seven constructs show excellent reliability. Here item-wise Cronbach's Alpha values are well above the 90% which shows the excellent reliability of the constructs.

Table 4.7: Reliability Statistics

Cronbach's Alpha	N of Items
.919	7

The overall reliability statistics as shown by Cronbach's Alpha is 91.9%, which is excellent.

Table 4.8: Correlation Analysis

		Behavior Intention	Performance Expectancy	Effort Expectancy	Social Influence	Facilitating Condition	Trust in Government	Trust in the Internet
Behavior Intention	Pearson Correlation	1						
	Sig. (2-tailed)							
	N	44						
Performance Expectancy	Pearson Correlation	.801**	1					
	Sig. (2-tailed)	.000						
	N	44	44					
Effort Expectancy	Pearson Correlation	.603**	.687**	1				
	Sig. (2-tailed)	.000	.000					
	N	44	44	44				
Social Influence	Pearson Correlation	.632**	.708**	.683**	1			
	Sig. (2-tailed)	.000	.000	.000				
	N	44	44	44	44			
Facilitating Condition	Pearson Correlation	.642**	.675**	.679**	.746**	1		
	Sig. (2-tailed)	.000	.000	.000	.000			
	N	44	44	44	44	44		
Trust in Government	Pearson Correlation	.468**	.423**	.465**	.615**	.537**	1	
	Sig. (2-tailed)	.001	.004	.001	.000	.000		
	N	44	44	44	44	44	44	
Trust in the Internet	Pearson Correlation	.704**	.675**	.632**	.649**	.706**	.577**	1
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000	
	N	44	44	44	44	44	44	44
**. Correlation is significant at the 0.01 level (2-tailed).								

Table 4.8 shows that the Behavior Intention is highly significant with all the other variables. The Performance Expectancy is strongly correlated with a value of .801 with Behavior Intention. Effort Expectancy, Social Influence, Facilitating Condition, Truest in the Internet are moderately correlated with Behavior Intention. Trust in Government is weakly correlated with Behavior Intention to use e-government services.

Table 4.9: One-Sample Test

	Test Value = 4					
	t	df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
					Lower	Upper
Behavior Intention	6.298	43	.000	1.455	.99	1.92
Performance Expectancy	6.809	43	.000	1.386	.98	1.80
Effort Expectancy	4.723	43	.000	1.068	.61	1.52
Social Influence	3.914	43	.000	.773	.37	1.17
Facilitating Condition	4.196	43	.000	.886	.46	1.31
Trust in Government	1.483	43	.145	.386	-.14	.91
Trust in the Internet	3.939	43	.000	.795	.39	1.20

The table 4.9 shows the one-sample test results. The test value is 4 because 7-point Likert scale is used in the data collection. All the variables are significant except Trust in Government. The mean difference for all the variables is positive and thus we accept our hypotheses.

Table 4.10: Regression Analysis

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.833[a]	.695	.645	.913

a. Predictors: (Constant), Trust in the Internet, Trust in Government, Effort Expectancy, Performance Expectancy, Facilitating Condition, Social Influence

69.5% of the variations in Behavior Intention are explained by the independent variables. But before looking at the R Square value it should be noted from table 11, below, that F-statistic is highly significant.

Table 4.11: ANOVA [a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	70.082	6	11.680	14.019	.000[b]
	Residual	30.827	37	.833		
	Total	100.909	43			

a. Dependent Variable: Behavior Intention
b. Predictors: (Constant), Trust in the Internet, Trust in Government, Effort Expectancy, Performance Expectancy, Facilitating Condition, Social Influence

The F-statistic is highly significant in the ANOVA table 4.11 with a value of 14.019.

Table 4.12: Coefficients [a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.107	.609		.176	.861
	Performance Expectancy	.671	.170	.592	3.942	.000
	Effort Expectancy	-.016	.144	-.016	-.114	.910
	Social Influence	-.023	.193	-.020	-.121	.905
	Facilitating Condition	.064	.172	.058	.372	.712
	Trust in Government	.054	.109	.061	.500	.620
	Trust in the Internet	.287	.169	.251	1.702	.097
a. Dependent Variable: Behavior Intention						

Table 4.12 shows the coefficients of the independent variables. The dependent variable is Behavior Intention (BI). Performance Expectancy (PE) is highly significant and positively impacts the independent variable BI with a value of 0.671. All other independent variables are insignificant at 95% confidence interval. Trust in the Internet (TI) is significant at p-value of 0.1 i.e. 10%.

On the basis of the above results following regression equation can be developed:

$$BI = 0.107 + 0.671 \ (PE) - 0.016 \ (EE) - 0.023 \ (SI) + 0.064 \ (FC) + 0.054 \ (TG) + 0.287 \ (TI) + error \ term \quad (A)$$

The above equation A shows that Performance Expectancy (PE) and Trust in the Internet (TI) are positively related to Behavior Intention (BI) to use e-Government services in Pakistan. A 1-unit increase in Performance Expectancy (PE)

will increase BI by 0.671 units on an average and a 1-unit increase in Trust in the Internet will increase BI by 0.287 units on an average.

5. CONCLUSION AND RECOMMENDATIONS

Regression results show that the Performance Expectancy is highly significant and positively influences the e-government adoption among the citizens. The Performance Expectancy (PE) is positively related with the Behavior Intention (BI) to use e-government services in Pakistan. It means that the citizens of Pakistan are expecting improvement in doing interaction with the government. Our results at this stage show that all the other independent variables are insignificant at p-value of 0.05 but at p-value 0.1 Trust in the Internet (TI) is significant and positively impacts the Behavior Intention (BI).

The Government of Pakistan has used the same tools to directly connect to the stakeholders by using the ICT but these efforts are not plausible because literacy rate and education in IT are at lower levels which need to be addressed by investing in such areas.

Furthermore, it is the need of the time that the government of Pakistan plays significant role by using public service messages and arrange awareness sessions for the public to adopt e-government services. The study will be helpful in improving the factors that contribute to the e-government services adoption in Pakistan. Such steps will be effective in improving the overall adoption of the e-government services in Pakistan.

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