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ROLE OF TRUST AND TECHNOLOGICAL SELF-EFFICACY IN E-GOVERNMENT PORTALS ADOPTION IN PAKISTAN

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Article Info

Abstract

E-government systems are increasingly being adopted by developing countries; yet, the adoption pattern remains unclear. The ultimate aim of this study was to investigate the impact of perceived trust and technological self-efficacy on citizens' adoption of e-government portals in Pakistan. The study used a quantitative methodology and a cross-sectional method, with a 5-point Likert scale questionnaire to acquire the perception of 345 respondents from the urban Sindh, Pakistan, selected based on their familiarity with e-government portals, relevance, and convenience. The results indicate that behavioral intentions of citizens to use e-government portals are positively and significantly influenced by the Perceived Trust (**β**=0.270, $p > 0.05$), and Technological Self-Efficacy (**β**=0.227, $p > 0.05$). The study recommends initiating training workshops, awareness campaigns, and digital literacy programs to raise citizens' technological self-efficacy and measures for strong data protection, secure login systems, and transparent data usage policies to increase trust level for e-government portals adoption in Pakistan.

Keywords: *E-government, e-government portals, e-government portals adoption, perceived trust, technological self-efficacy, behavioral intentions to use e-government.*

INTRODUCTION

E-governance refers to the usage of government facilities and services via the internet. E-governance improves traditional governance by ensuring that services are delivered on time and efficiently. E-governance promotes communication between government agencies and the public. E-governance strives to increase the efficiency, efficacy, and transparency of governance.

Government employ modern digital technologies, such as web portals or other online apps, to deliver public procedures that formerly needed a great deal of time and official procedures to the final stakeholder more quickly and directly. This engages citizens in more substantive communication with the public sector. (Gkikas et al., 2022). An e-government portal is an electronic information delivery system that is available via the Internet and that a state agency has officially designated as a way of delivering information, products, or services. These are centralized online platforms that offer access to a variety of government services at a single point. They increase citizen-government interactions by connecting individuals, businesses, and other stakeholders to government institutions and services. Portals facilitate successful connection and collaboration among citizens, corporations, and governments.

E-Government Portals in Pakistan

The governments in Pakistan have launched many government service portals. The services provided by these portals include complaint registration through Pakistan Citizen Portal, NADRA services of CNIC and family registration, etc., utility bill payments, education payment and management by Higher Education Commission, and reporting crimes using e-police services.

Table 1. Most Visited Government Websites in Pakistan as of March 2026

Government Website	Visits
punjab.gov.pk	8.63M
nitb.gov.pk	3.34M
bisp.gov.pk	2.52M
fbr.gov.pk	2.02M
pta.gov.pk	1.77M
nadra.gov.pk	1.49M
zameen.com	1.38M
weboc.gov.pk	1.36M
psca. gop.pk	1.2M
saudigazette.com.sa	1.18M

Source: (*Top Government Websites in Pakistan*, 2026)

Statement of the Problem

As E-governance is broadly expanding, it is exposed to cyberattacks. Privacy and security in e-governance are among the key concerns. This impacts the trust level and the adoption (Mazhar et al., 2025). Further, using e-governance services requires technical skills; perceived self-efficacy of the users is also a key indicator of e-governance portal adoption, and user beliefs about their technological skills influence their intentions (Arfat et al., 2018). Despite a significant increase in e-government portals, user trust and technological self-efficacy may impede their general use.

the current paper expands on previous research on the adoption of e-government portals in Pakistan which is theoretically grounded in the Diffusion of Innovations Theory and examined the role of innovation characteristics like relative advantage, compatibility, complexity, trialability, and observability in shaping citizens' behavioral intentions, (Havi et al., 2026) By emphasizing perceived trust and technological self-efficacy as important factors, the current study provides a more thorough understanding of citizens' adoption of e-government portals.

Research Aim and Objectives

- To investigate the role of Perceived Trust in shaping citizens' behavioral intentions to adopt e-government portals.
- To examine the impact of Technological Self-Efficacy on citizens' behavioral intentions to adopt e-government portals.

LITERATURE REVIEW

The presence of trust is detected in an unspecified circumstance in which risk exists and the trustor is exposed to the indeterminate expectation of disruptive results. Furthermore, trust has been identified as a key variable in the context of e-commerce, particularly in e-government (Robertson, 1967). Furthermore, trust has allowed cooperative behavior to flourish. As a result, trust beliefs have led to enhanced trust behavior, while also encouraging individuals to participate in e-government. In e-government, trust is strongly influenced by the propensity to trust, as individuals who trust others are more likely to trust institutions, including citizens. Thus, the propensity to trust is inextricably linked to perceived trust in e-commerce, particularly in e-government (Ranaweera, 2016). Trust is essential for maintaining the relationship between users and online services. In the context of e-commerce and e-government service delivery, trust is essential (Rana, Dwivedi, Williams, et al., 2015). Regardless of the distinctions between trust and confidence, they have been researched and can be influenced by the user experience of e-government service delivery (Rana, Dwivedi, & Williams, 2015). Technological self-efficacy refers to the user's perceptions about their ability to finish a task with technology in a comparable setting. Technology prospects are significantly influenced by technological self-efficacy, which also influences user

behavior when using online systems. Higher technological proficiency and, consequently, a higher degree of technological self-efficacy are characteristics of users with greater technological usage experience (Mustonen-Ollila & Lyytinen, 2003). The uptake of e-government services is influenced by technological self-efficacy. Compared to consumers with lower technological self-efficacy, those with strong technological self-efficacy are more likely to utilize e-government services. It increases the desire to utilize e-government services (McDonald & Siegall, 1992).

Theoretical Framework of the Study

This study aims to investigate the impact of perceived trust and technological self-efficacy on citizens' behavioral intentions to adopt e-government portals in Pakistan. The constructs of the study are;

1. **Behavioral Intentions**

Behavioral Intentions is the key variable in this study. Behavioral intention relates to someone's desire or interest in performing specified activities, indicating their readiness to do so. Behavioral intention is an individual's anticipated tendency or willingness to engage in a particular conduct in the future. It serves as a link between attitudes and actual behaviors, implying that if someone has a strong desire to act, they are more likely to follow through. Behavioral intention is often self-reported.

2. **Perceived Trust**

Trust refers to the extent to which users believe that an e-government portal is reliable and protects their personal information. It replicates users' confidence to adopt the e-government portal to function as expected without misuse of data or failure in service delivery. Perceived trust is a crucial determinant of citizens' behavioral intention to use e-government service portals. A major problem in the research is that there aren't enough studies looking at all of the numerous aspects that may influence how individuals use e-government services (Mustonen-Ollila & Lyytinen, 2003). For example, experts believe we need to properly understand how people feel about e-government and how they intend to use it. Such research may find crucial characteristics and linkages that necessitate a thorough and comprehensive analysis (Ranaweera, 2016).

3. **Technological Self-Efficacy**

Self-efficacy is a key determining factor in social cognitive theory since it governs users' judgments about their ability to complete specific tasks [54]. It is regarded as a distinct sort of self-evaluation that guides users' behaviors and actions related to a certain goal. In information technology, self-efficacy refers to users' beliefs in their knowledge and skills in using technology effectively to achieve certain goals by doing specified activities [13, 55]. Individuals who are confident in their technological talents are more likely to succeed while employing technology.

However, if they lack confidence, they may struggle to use it effectively [56]. Technological self-efficacy has been shown to have an important impact on shaping users' feelings and behaviors.

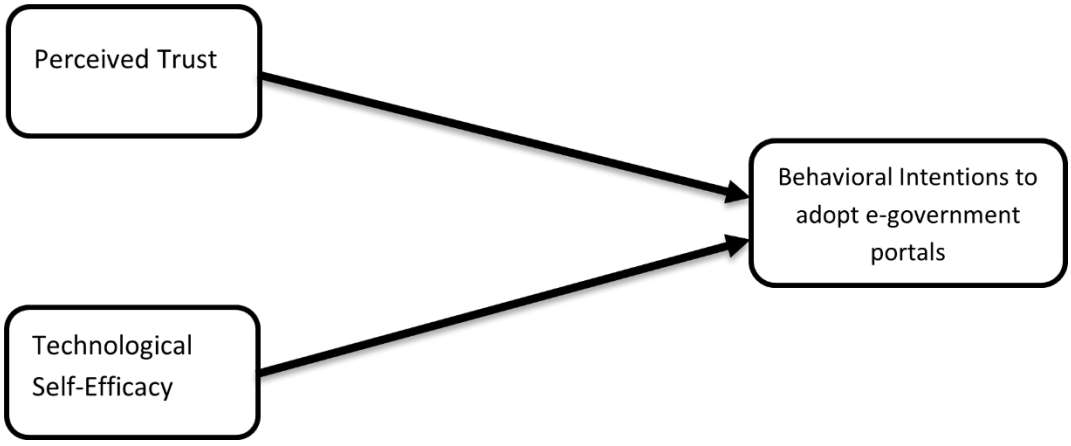

Figure 1. Framework of the study

Research Hypotheses

H1: Perceived Trust significantly influences citizens' behavioral intention to use e-government portals.

H2: Technological Self-Efficacy significantly influences citizens' behavioral intention to use e-government portals.

MATERIALS AND METHODS

Research Design

This study investigates the role of individuals' perceived trust and technological self-efficacy in using e-government portals in Sindh, Pakistan. The study's design is quantitative and cross-sectional. The study used a questionnaire to collect responses from a specific time period.

Sampling Technique and Sample Size

This study used a purposive sampling technique to select respondents from the accessible population. This sampling technique allows to select participants based on their relevance to the research area under investigation. Hence, the study ensures that the collected data correctly reflect informed perceptions regarding the adoption of e-government portals.

This study used an internet tool to calculate the sample size (*References: A-Priori Sample Size for Structural Equation Models*, n.d.). With a moderate effect size of 0.30, statistical power of 0.95, and a margin of error of 0.05, the minimal sample size needed for the study is 256.

Population

The study's target population is Pakistani individuals who have internet access and are likely to use e-government portals. The study's selected population was drawn from the target population and included urban cities in Sindh, such as Karachi, Hyderabad, Sukkur, Mirpur Khas, Tando Jam, Badin, Dadu, Thatta, and others.

Data Collection Method and Instrument

The data collection process involved the development and validation of well structure questionnaire. The questionnaire contained 5-point Likert scale items to represent study constricts i.e., Trust, and Technological Self-Efficacy. Data collection was administered in face-to-face meetings with the respondents of the study.

Reliability and Validity

To ensure questionnaire reliability, the Cronbach's Alpha reliability test was used. This is the most applied reliability testing metric. Cronbach's Alpha measures the degree of association of items on a scale (Malhotra et al., 2006). Cronbach's alpha test yields a number between 0 and 1. The higher the Cronbach's Alpha value, the better the reliability.

Ethical Considerations

The study followed research ethics guidelines (Dillman & Smyth, 2007). Before the study began, the subjects' consent was obtained. Participants were given a clear description of the study's objective and might leave at any time. It was made clear that the data acquired would only be used for the research. They were also informed that the information gathered would be kept private and not shared with anyone.

RESULTS

Reliability Analysis

Table 2. Reliability Statistics

Construct	No. Items	Cronbach's Alpha Value
Technological Self-Efficacy	5	0.841
Perceived Trust	4	0.877

The Cronbach's Alpha analysis statistics revealed that the items for the constructs of the study have internal consistency, as Perceived Trust $\alpha = 0.877$, and Technological Self-Efficacy $\alpha = 0.841$. As the Cronbach's alpha values for both constructs are higher than the generally accepted value of 0.7 (Ahmed et al., 2023), the questionnaire is reliable to collect actual responses for the study.

Demographics

Table 3. Demographics of the Respondents

Demographic	Categories	Frequency	Percent
Gender	Male	246	71.3
	Female	99	28.7
Age in Years	Less than 20	20	5.8
	21 – 30	133	38.6
	31 – 40	146	42.3
	41 – 50	33	9.6
	60 or above	13	3.8
Education	Intermediate	89	25.8
	Undergraduate	52	15.1
	Graduate	169	49.0
	Post-Graduate	35	10.1
Occupation	Private sector employee	92	26.7
	State enterprise employee	74	21.4
	Government employee	54	15.7
	Students	72	20.9
	Unemployed	53	15.4
Internet Use in Years	1 – 3	85	24.6
	3 – 5	70	20.3
	5 – 7	37	10.7
	7 – 10	74	21.4
	More than 10	79	22.9
Marital Status	Single	71	20.6
	Married	167	48.4
	Separated	70	20.3
	Divorced	37	10.7

For the study, responses were collected physically by distributing a questionnaire to n=345 respondents from the accessible population. The respondents shared diversity in gender, age, education, occupation, experience of internet use, and marital status. This adds to the scope, level, and credibility of the findings, as the findings on the perceived trust and technological self-efficacy are not restricted to a single group.

Model Fitness

Table **Error! No text of specified style in document.**4. Goodness of Fit (GoF)

Fitness Indices	**Threshold**	**CFA**	**Decision**
Chi-square (CMIN)	-	717.902	-
Degree of freedom (DF)	-	370	-
CMIN/DF	< 3.00	1.940	Excellent
Comparative Fit Index (CFI)	> 0.90	0.949	Acceptable
Normed Fit Index (NFI)	> 0.90	0.901	Excellent
Incremental Fit Index (IFI)	> 0.90	0.950	Excellent
Tucker-Lewis Index (TLI)	> 0.90	0.940	Excellent
Goodness of Fit Index (GFI)	> 0.90	0.884	Acceptable
Adjusted Goodness of Fit Index (AGFI)	> 0.90	0.854	Acceptable
Standardized Root Mean Square Residual (SRMR)	< 0.08	0.052	Excellent
Root Mean Square Error of Approximation (RMSEA)	< 0.08	0.052	Excellent

The results show that the model fit indices have met their specified thresholds, indicating that the confirmatory factor analysis model is adequately fit.

Structural Model

Table 5. Goodness of Fit (GoF)

Fitness Indices	**Threshold**	**SEM**
Chi-square (CMIN)	-	933.380
Degree of freedom (df)	-	392
CMIN/df	< 3.00	2.381
Comparative Fit Index (CFI)	> 0.90	0.921
Normed Fit Index (NFI)	> 0.90	0.871
Incremental Fit Index (IFI)	> 0.90	0.921
Tucker-Lewis Index (TLI)	> 0.90	0.912
Goodness of Fit Index (GFI)	> 0.90	0.849
Adjusted Goodness of Fit Index (AGFI)	> 0.90	0.820
Standardized Root Mean Square Residual (SRMR)	< 0.10	
Root Mean Square Error of Approximation (RMSEA)	< 0.08	0.063

The structural model's model fitness table above showed that CMIN/DF had achieved its limit. According to their stated threshold, the structural model achieved IFI, TLI, and RMSEA. Furthermore, the study's structural model met a significant CFI threshold, with a recommendation of 90% for sufficient model fitness. To achieve the requirement for appropriate model fitness, at least three model fitness indices must be obtained; however, NFI, GFI, AGFI, and SRMR have been shown to have slightly lower model fitness than the specified thresholds. The structural model of the current inquiry shows satisfactory model fitness, as shown in the table above.

Squared Multiple Correlation

Table 6. Squared Multiple Correlations

Endogenous Construct	**R-Square**
Behavioral Intention	0.381

The model's strength and the degree to which all exogenous constructs explained variability in endogenous latent constructs were predicted using squared multiple correlations. The findings showed that up to 38.1% of behavioral intention to embrace e-government portals may be predicted by the exogenous parameters in the model.

Path Analysis

Table 7. Path Analysis Statistics

Hypotheses	**standardized path coefficients (β)**	**Standard Error**	**T-Statistics**	**P**	**Remarks**
Technological Self-Efficacy → Behavioral Intention	0.227	0.066	3.428	0.000	Accepted
Perceived Trust → Behavioral Intention	0.270	0.064	4.233	0.000	Accepted

The hypothesized relationships were measured in AMOS using the path analysis technique, and the results revealed that Technological Self-Efficacy (**β**=0.227, $p > 0.05$) and Perceived Trust (**β**=0.270, $p > 0.05$) have a positive and significant impact on the behavioral intention to use e-Government portals.

The results of this study support previous research by Havi et al. (2026), which highlighted innovative factors as important adoption factors for e-government portals adoption. The current study confirms that citizens' behavioral intentions are significantly influenced by psychological elements, including perceived trust and technological self-efficacy.

CONCLUSION

This study aimed to examine the effect of Exogenous variables, technological self-efficacy, and perceived trust on the Endogenous variable, behavioral intentions of citizens to adopt e-government service portals. Conducted in the Sindh region of Pakistan, the findings confirmed that both exogenous variables have a significant and positive effect on the endogenous variable. The results indicate that individuals who feel confident in their skills and abilities are more likely to successfully use the e-government portals. Additionally, Individuals who feel secure and believe e-government portals are reputable are more likely to use the services.

RECOMMENDATIONS

Improve Digital Skills

For a widespread adoption of e-government services, governments should initiate training workshops, awareness campaigns, and digital literacy programs to raise citizens' technological self-efficacy.

Strengthen System Security and Trust

To increase citizen trust levels, e-government portals should include strong data protection measures, secure login systems, and transparent data usage policies.

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