

The Impact of E-Government Adoption on Public Service Quality and Citizen Satisfaction: The Mediating Role of User Experience

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Article Details

ABSTRACT

Key words: E-Government Service, Public Service Quality, User Experience, Citizen Satisfaction

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The adoption of e-government has transformed the delivery of public services by enhancing accessibility, efficiency, and transparency. This study examines the impact of e-government adoption on public service quality and citizen satisfaction, with a particular focus on the mediating role of user experience. Drawing on theoretical frameworks of technology acceptance and service quality, the research explores how digital platforms influence perceptions of service efficiency, reliability, and responsiveness. Through empirical analysis, the study identifies that e-government adoption positively correlates with improved public service quality and heightened citizen satisfaction. Furthermore, user experience encompassing ease of use, accessibility, and perceived usefulness emerges as a critical mediating factor. The findings suggest that a user-centric approach to e-government platforms enhances service delivery outcomes and fosters greater public trust and satisfaction. This research provides valuable insights for policymakers and government agencies aiming to optimize e-government initiatives and improve citizen engagement through enhanced digital experiences.

INTRODUCTION

The world has undergone several dynamics including globalization, democratization information, and communication technology. This transformation has led to changes in the complexity in mobility, needs, awareness, demands plus perceptions towards governments among societies. The advancement in Internet technologies has set pace for the delivery of e-government services to the society by altering the traditional modes of delivering public services by governments. Internet is an important interface for citizen-government communication and provision of services. Some of the early efforts in the development of e-government services resemble to that of commercial organizations, with an emphasis of automating current procedures and converting existing government services to online ones. Yet, the majority of e-government services are developed based on the best practices disregarded the quality from the citizens' perspective. Professional, professional and positive manner from organizations service delivery directly influences trust between the government and its citizenry. The ultimate purpose of these e-government initiatives is to improve the quality of the relationship between the government and its citizens by measures of satisfaction and trust in the government as depicted by Taufiqurokhman et al., 2024. When the personnel of public services are friendly it enriches the environment and encourages teamwork (Li & Shang, 2020; Mansoor, 2021).

Nevertheless, critical obstacles have been identified in the process of advancing e-government services and new public governance while designed and delivering according to citizens' demand and expectations (Goldkuhl, 2016; Tummers & Rocco, 2015). This is because due to the fast advancement in technology implementation of e-Government becomes more vital and cannot be overlooked. E-Government, therefore, relates to the use of communication & IT to improve efficiency, access and information essence in delivering public services (Mustafa et. al, 2020). Consequently, the concept of eservice quality, namely the quality of services delivered through electronic media, comes into the forefront. Researching the level to which the quality of the e-service is defining the trust in the service or the trust in the government, will bring deep understanding toward the effectiveness of technology integration in delivering government services. To date, little literature is available concerning the effects of the digital divide or the disparity in accessing and using ICTs on the attainment of net benefits

from e-Governance interventions, particularly in developing nations (Phuyal, Citation2024; Rai, Citation2022).

Thus, in our country Pakistan e-government services offered by NADRA and Passport Office not only increases the quality of public services but also increases citizen satisfaction by providing Computerized National Identity Card, Smart National Identity Card and Pak Identity Online Portal and various other services, similarly Passport Office also providing different platforms where public get benefits i.e. Online Passport Renewal, Online passport application from their Website which not only saves time but provide easiness and built trust on Government Services. As such, making e-government platforms inclusive and effective, easy to use, and maintain is crucial for achieving improved government functions and increased citizens' trust.

RESEARCH OBJECTIVES

1. To measure the impact of E-Government Adoption on Public Service Quality
2. To analyze the impact of E-Government Adoption on Citizen Satisfaction.
3. There is a significant relationship between e-government adoption, public service quality, and citizen satisfaction, with user experience acting as a mediating factor.

RESEARCH QUESTIONS

1. What is impact of E-Government Adoption on Public Service Quality?
2. What is impact of E-Government Adoption on Citizen Satisfaction?
3. How does e-government adoption influence public service quality and citizen satisfaction, and what is the mediating role of user experience in this relationship

LITERATURE REVIEW

E-Government Service describes how companies and organizations fulfill customer needs by using online platforms. The delivery of quality electronic services involves more than digital distribution of products or information since it demands the development of satisfactory user experiences (Alblooshi et al., 2023). The quality of e-service depends on how easily users can navigate the system and transaction speed as well as the availability of needed information and data security measures and how well the service meets customer needs. The delivery of exceptional electronic services creates satisfying user experiences and faster and more effective online interaction while establishing trust in the platform for customers (Li & Shang, 2020;

Aljukhadar et al., 2022). The availability of electronic services creates both an electronic copy of regular offerings along with fresh possibilities through increased reach and enhanced service accessibility (Hariguna et al., 2021).

E-GOVERNMENT SERVICE QUALITY AND CITIZEN SATISFACTION

Previous work has presented significant results concerning the level of satisfaction of the citizens regarding e-government services. Magoutas & Mentzas, (2010) introduced a semantic-based adaptive framework for monitoring citizen satisfaction in e-government, incorporating three adaptive axes: using the questions completed by the citizens through questionnaires, solving the citizens' problems and using the meta tags of the visited pages. The findings pointed to the fact that the framework served to offer value to the stakeholders; namely, satisfaction of citizens' needs and value creation for the purpose of the public organization. In another study, Baharon et al., (2017) investigated users' attitude and perception towards Malaysia's e-portal. Four determinants were tested: including perceived ease of use, citizen trust, service quality and content quality of the website. The study uncovered that overall, the level of citizen satisfaction with the e-government portal in Malaysia is somewhat higher than neutral, largely based on three out of four antecedents. The results indicated that service quality is the most influential factor, and was succeeded by perceived ease of use and content quality. Sachan et al., (2018) aimed at analyzing the adoption of e-Government and the importance of the process to the extent of user satisfaction.

The insights presented proved that higher use of e-government processes influenced the users' perception of ease of use, perception of usefulness which in return boosted users' satisfaction. This study helped establish the fact that technological capabilities inherent in government website processes, are fundamental in defining e-government service quality and use that leads to user satisfaction. González-Gallego et al., (2020) proposed the open-data government model and then examined its first and second order effects on trust based on the satisfaction of citizens. Altogether, the research proved that open data in the governments' activity improves citizen satisfaction among the subjects of the surveyed sample. The improvement of the quality of public services is achieved when the government offers open data to citizens.

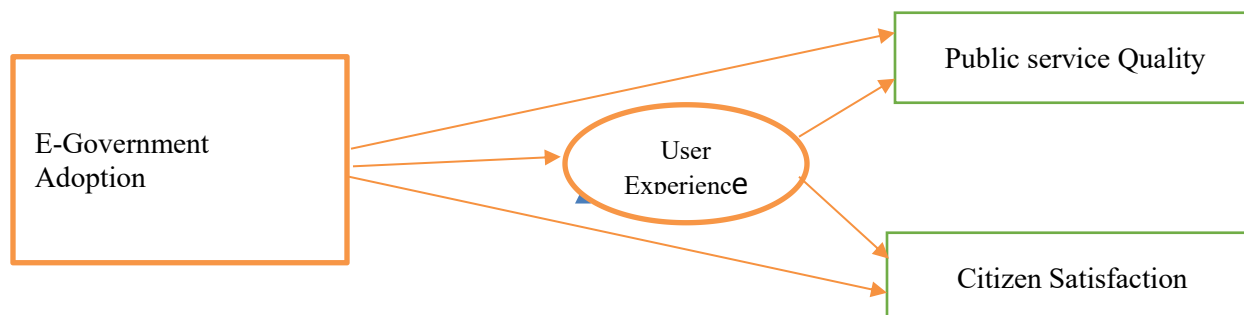
ASSOCIATION BETWEEN CITIZEN SATISFACTION AND CITIZEN TRUST

A large amount of empirical research has been devoted to elaborate the interconnection of the government performance, citizen satisfaction, and their trust. Van Ryzin, (2007) put forward an expectation disconfirmation model based approach having trust as the key underpinning factor that indicates government performance as well as satisfaction of the general public. Three models studied by Badri et al were; acknowledging that the satisfaction, which is determined by demographic factors, user service expectations and perceived service quality, shape trust in government. Beerli et al., (2019) showed that performance management enhances citizen trust through satisfaction as a mediate variable for local government performance. Lanin & Hermanto (2019) stressed the fact that locally delivered public services improve citizen satisfaction and trust, scaled all the more when particular sectors including education and health, are in concern. Altogether, all these studies provide a vast spectrum of understanding diverse aspects of interaction between government and its citizens, where trust and satisfaction are highlighted as the drivers of essential change. These empirical findings highlight an important tip of positive linear relationship between citizen satisfaction and trust in government agencies or electronic service providers pointing to the fact that when citizens are satisfied as service consumers, their trust in government agencies as service providers improves.

THE ROLE OF USER EXPERIENCE IN QUALITY SERVICE AND CITIZENS SATISFACTION

User Experience stands as a decisive middle element between e-service quality and citizen satisfaction because it determines how users sense and handle digital services. Despite being enhanced by high-quality e-services the impact on satisfaction operates mainly through UX factors which include ease of use, aesthetics, interactivity, and emotional response (Hassenzahl & Tractinsky, 2006). A positive user experience makes perceived service quality transfer more efficiently into satisfaction which strengthens client loyalty and encourages continued usage according to Zhou et al. (2020). Research by Bhattacharjee (2001) through his Expectation-Confirmation Model together with Venkatesh et al. (2003) through their Technology Acceptance Model shows UX becomes a vital factor in successful digital government delivery by controlling perceptions of service outcomes. @The improvement of e-services UX leads to better service adoption while strengthening the relationship between service quality and citizen

satisfaction to build better public trust in digital governance.



HYPOTHESIS

1. **H1.** E-Government Adoption has positive and significant impact on Public Service Quality.
2. **H2.** E-Government Adoption has positive and significant impact on Citizen Satisfaction.
3. **H3.** E-Government Adoption has positive and significant impact on Public Service Quality and Citizen Satisfaction through mediating factor of User Experience.

RESEARCH METHODS

This study employed a quantitative research method to investigate the impact of e-government adoption on public service quality and citizen satisfaction, with user experience acting as a mediating factor. A cross-sectional survey design was used to collect data from citizens who had interacted with e-government platforms of NADRA and Passport office. The study random sampling to ensure a representative sample across different demographic groups, including age, gender, and geographic location. Data were gathered through a structured questionnaire divided into five sections: demographic information, e-government adoption, public service quality, citizen satisfaction, and user experience. Each section was measured using a 5-point Likert scale adapted from validated models. Ensured Cronbach's alpha values exceeded 0.7 for internal consistency. The final sample size consisted of 200 respondents, which was determined using Cochran's formula to ensure statistical power. Data analysis was performed using SPSS and Structural Equation Modeling (SEM) to examine relationships between variables and assess the mediating effect of user experience.

DATA ANALYSIS

FREQUENCY DISTRIBUTION

The purpose of frequency distribution is to provide a summary of the respondent's information i.e gender, age and education. Frequency distribution provides percentage of the demographic factors of the respondents. In demographic data of the respondents, four characteristics treated Gender of respondents, Age , Marital status and Qualification of respondents.

GENDER

	Respondents	Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Male	177	88.05	88.05	88.05
	Female	24	11.94	11.94	11.94
	Total	201	100.0	100.0	100.0

Source: Primary data

The total 201 respondents consisted of 177 male participants which accounted for 88.05 percent of the research sample while 24 female participants amounted to 11.94 percent of the total. The data reveals that men made up the majority of those who answered the questionnaire.

AGE

	Age b/w	Frequency	Percent	Valid Percent	Cumulative Percent
Valid	25-34	165	82.08	82.08	82.08
	35 to above	36	17.91	17.91	17.91
	Total	201	100.0	100.0	100.0

Source: Primary data

The age group of 25-34 years at 82.08% included 165 participants from the total 201 respondents. Among the total respondents the age group of 35 and older consisted of 36 people who demonstrated 17.91% of the sample population. Most respondents belong to the age brackets of 25 to 34 and above with a total percentage of 82.08.

QUALIFICATION

	Education	Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Intermediate	10	4.97	4.97	4.97
	Bachelor	52	25.87	25.87	25.87
	Master and Above	139	69.15	69.15	69.15
	Total	201	100.0	100.0	100.0

Source: primary data

A breakdown of educational attainment reveals that Intermediate students comprised 4.97% of the total participants (10) whereas Bachelor of Education students accounted for 25.87% of the respondents (52) and Master's degree holders made up 69.15% (139) of those surveyed thus indicating master degree students were in the majority group.

MARITAL STATUS

Marital Status	Frequency	Percentage
Single	74	36.81
Married	125	62.18
Widowed	2	0.99
Total	201	100

The table indicates 74 single male and female respondents out of 201 people, which amounts to 36.81% of the total responses. Of the 201 total respondents the married demographic accounted for 125 participants or 62.18% whereas 02 respondents represented the widowed demographic at 0.990%.

RELIABILITY TEST

Cronbach Alpha (α) measures statistically reliability of responded items. Its value ranges between 0 to 1. Moreover, value 0.7 and above shows acceptable reliability.

Variables	No of Questions/ items	Cronbach (α) Values	Alpha	Remarks
E-Government Adoption	5	0.8		Good
Public Service Quality	5	0.8		Good
Citizen Satisfaction	5	0.7		Acceptable
User Experience	5	0.8		Good
Association b/w all	5	0.8		Good

CORRELATIONS MATRIX

In this study technique, the value of Pearson Correlation Coefficient (r) is calculated for assessing the relationships between two or more than two variables i.e. E-Government Adoption (Independent variable), Public Service Quality and Citizen Satisfaction (dependent variables) and User Experience (mediating factor). The value of coefficient (r) ranges from -1 to +1 (+1 shows positive correlation and -1 shows negative correlation) Statistical table with values of Pearson Correlation Coefficient (r) is as under:

Variables	EGA	PSQ	CS	UE	Remarks
E-Government Adoption (EGA)	1				Significant & Positive
Public Service Quality (PSQ)	0.64	1			Significant & Positive
Citizen Satisfaction (CS)	0.59	0.61	1		Significant & Positive
User Experience (UE)	0.67	0.62	0.59	1	Significant & Positive

REGRESSION ANALYSIS STATISTICAL TABLE

S.No.	Relationships of variables	Un standardized Coefficient (B)	Standard Error (SE)	Standardized Coefficient (β)	t value	p-value	R ²
1.	E-Government Service and Public Service Quality	0.488	0.067	0.557	7.809	< 0.001	0.33
2.	E-Government Service and Citizen Satisfaction	0.448	0.058	0.531	7.059	< 0.001	0.29
3.	Mediating effect of User Experience on Public Service Quality	0.409	0.061	0.513	8.073	< 0.001	0.47
4.	Mediating effect of User Experience on Citizen Satisfaction	0.357	0.046	0.429	7.861	< 0.001	0.42

RESULTS AND DISCUSSIONS

I examined the strong relationships among variables in the results through a correlation table that defines “r” as the significance of relationship with the value of “r” indicating association status between variables while “n” identifies non-missing values.

1. The relationship between E-Government Adoption and Public Service Quality shows a significant and positive impact [$B = 0.488$, $\beta = 0.557$, $p < 0.001$]. This means that increased E-

Government Services leads to greater perception of Public Service Quality indicating 30% [$R^2 = 0.30$] of the variance.

2. The relationship between E-Government Services and Citizen Satisfaction shows a significant and positive impact [$B = 0.448$, $\beta = 0.531$, $p < 0.001$]. It depicts that E-Government Services have great impact on citizen Satisfaction, indicating 29% [$R^2 = 0.29$] of the variance.

3. The mediating role of User Experience showing a significant and positive impact on Public Service Quality [$B = 0.409$, $\beta = 0.513$, $p < 0.001$] with value of variance of 47% [$R^2 = 0.47$].

4. The mediating role of User Experience has a positive and significant effect on Citizen Satisfaction [$B = 0.357$, $\beta = 0.429$, $p < 0.001$], indicating 42% [$R^2 = 0.42$].

CONCLUSION

It is concluded from the analyzed results that the e-services provided by the Government of Pakistan, particularly through NADRA and the Passport Office, significantly enhance service delivery while strengthening governance. These digital applications allow citizens to access essential services—such as CNIC applications, passport renewals, and identity verification—without leaving their homes. By offering these services online, the government accelerates workflows, reduces bureaucratic hurdles, minimizes corruption, and improves operational efficiency.

Through advanced technological systems, the government ensures the provision of transparent and accessible public services, enhancing convenience for citizens. The e-services exhibit high quality through secure systems, user-friendly interfaces, and efficient time management. NADRA's biometric verification system, along with the online Pak-Identity portal, ensures secure operations, protects sensitive information, and facilitates accurate data management. Similarly, the Directorate General of Immigration and Passports (DGIP) enables online passport renewal, allowing both local and overseas Pakistanis to submit applications from any location without the need for physical visits. These digital initiatives not only reduce processing times but also decrease congestion and waiting periods at public offices, improving the overall service experience.

Additional conveniences are provided through digital payment options and courier services for

document delivery. As a result, public trust in government e-services continues to grow due to their reliability and efficiency. Citizens encounter fewer obstacles when handling official paperwork and benefit from faster processing timelines. Moreover, these digital solutions extend services to remote areas and overseas Pakistanis, ensuring broader accessibility. Continuous updates to digital infrastructure, informed by user feedback, allow the government to align e-services with public needs, further enhancing trust in governance.

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