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Article

Impact of Mobile Government Service Quality on Citizens' Usage Intention: An Empirical Study Based on SERVQUAL Model

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Abstract: With the rapid advancement of digital transformation in public administration, mobile government (m-government) services have emerged as a critical channel for citizen-government interaction. This study investigates the impact of mobile government service quality on citizens' usage intention using the SERVQUAL model framework. Drawing on data collected from 304 respondents across various demographic segments, this research employs structural equation modeling to examine the relationships between five service quality dimensions—tangibles, reliability, responsiveness, assurance, and empathy—and citizens' behavioral intentions toward m-government services. The findings reveal that service quality dimensions significantly influence citizens' usage intention, with responsiveness and reliability emerging as the most critical factors. The study contributes to the growing body of literature on digital government service quality assessment and provides practical insights for policymakers and technology administrators seeking to enhance citizen engagement with mobile government platforms. The research demonstrates that citizens' satisfaction with mobile government services is predominantly driven by system reliability and responsive service delivery, while traditional tangible factors show relatively weaker influence in the digital context. These findings have important implications for the design and implementation of citizen-centric mobile government initiatives.

Keywords: Mobile government; Service quality; SERVQUAL model; Usage intention; Digital transformation

1. Introduction

The adoption of e-services has changed public relations with government departments and agencies all over the world. With mobile phones being the most sought after gadgets, the availability of m-government services marks a further progress over email based services as they help overcome barriers which had previously been insurmountable[1]. Considering the increasing expenditure by governments on providing services electronically, understanding the reasons for participation becomes essential[2].There are better services offered by the government and satisfaction among citizens is higher as a result of advancement in mobile technologies. Over 58% of nations have begun to offer comprehensive online services in the health, education, employment and social protection[3]. Most technology investments are made with the hope that e-government services will lead to improved productivity and citizen satisfaction. Unfortunately most mobile government technologies do not meet the desired objectives because of lack of widespread acceptance by citizens and sustained participation[4].

The rapid pace of technological development makes the task of involving citizens into mobile initiatives more challenging as the expectations are continuously changing. Mobile phone users expect that government provided services will have the same ease of use as commercial applications resulting in expectations for reliable, easy to use, and fully automated interfaces[5]. This gap between expectation and reality leads to the research on factors designed to encourage citizens to embrace mobile government services.

2. Literature Review

The quality of government services has greatly improved as a result of digital technologies, giving value to the user experience and level of satisfaction in governance[6]. This is in contrast to earlier efforts that focused on efficiency measurement. The SERVQUAL model offers a strong framework for a system that measures perceived service quality by citizens using five identifiable dimensions.

Mobile government applications have additional benefits compared to traditional

e-government services, such as improved accessibility, real-time interaction, and spatial relevance that improve citizen experience[7]. Such benefits, however, pose new problems concerning usablity, security, and issues related to the digital divide that need to be addressed for all service users to enjoy non-discriminatory service delivery[8]. In the context of government services, the five SERVQUAL dimensions: tangibles, reliability, responsiveness, assurance, and empathy have been validated many times. Tangibles capture the aesthetic impression and appeal of the system interface design. Reliability captures accuracy, consistency of performance, and information accuracy, Responsiveness relates to speed of service delivery and problem resolution, is linked to security and trust in the service platform, and empathy encompasses personalization and availability of support[9]. Each dimension forms part of the totality of the perception of service quality.

3. Research Methodology

This research follows a quantitative research design with a cross-sectional survey design in examining the correlation between mobile government service quality and citizens' intention to use. The research design is based on the SERVQUAL model that offers an elaborate framework for measuring service quality on five essential dimensions. The research follows a positivist paradigm that focuses on empirical observation and statistical examination of hypothesized relationships among variables.

The target population was citizens with experience in using mobile government services in the last twelve months. Convenience sampling was used to obtain participants from various sources, such as social media sites, government service offices, and university collaborations[10]. The resulting sample of 304 respondents was large enough to meet the minimum sample size requirement for structural equation modeling analysis and was adequately statistically powerful for hypothesis testing.

Data was gathered using a ready-made questionnaire distributed via online and offline channels to achieve representative coverage of the various population segments. The questionnaire was phrased based on the standard SERVQUAL measures with modifications to fit the mobile government setting with refinement to accommodate the specific nature of online service provision.

Table 2

Construct Reliability and Validity Assessment

Construct	Cronbach's Alpha	Composite Reliability	AVE	AVE
Tangibles	0.847	0.906	0.708	0.841
Reliability	0.889	0.926	0.757	0.870
Responsiveness	0.923	0.943	0.798	0.894
Assurance	0.876	0.915	0.729	0.854
Empathy	0.858	0.912	0.721	0.849
Usage Intention	0.891	0.931	0.672	0.820

The measurement instrument consisted of six main constructs: five service quality dimensions (tangibles, reliability, responsiveness, assurance, empathy) and usage intention. Each construct was measured using multiple indicators to ensure construct reliability and validity[11]. The tangibles dimension included items related to visual appeal, interface design, and technological functionality. Reliability items focused on consistent performance, accurate information, and dependable service delivery. Responsiveness measures captured speed of service, quick problem resolution, and timely communication.

Assurance items assessed security, trustworthiness, and competence of the mobile government platform. Empathy measures evaluated personalization, understanding of citizen needs, and accessibility of support[12]. Usage intention was measured through items capturing citizens' likelihood to continue using mobile government services, recommend them to others, and increase usage frequency in the future.

Data analysis was conducted using partial least squares structural equation modeling (PLS-SEM) implemented in SmartPLS software. This analytical approach was chosen for its ability to handle complex models with multiple constructs and its robustness to non-normal data distributions. The analysis proceeded through two stages: measurement model assessment to evaluate reliability and validity, followed by structural model evaluation to test hypothesized relationships.

Measurement model assessment included examination of indicator loadings, construct reliability (Cronbach's alpha and composite reliability), convergent validity (average variance extracted), and discriminant validity (Fornell-Larcker criterion and HTMT ratios)[13]. Structural model evaluation focused on path coefficients, significance levels, coefficient of determination (R^2), and predictive relevance (Q^2) to assess the explanatory power of the model.

4. Results and Analysis

The demographic profile of the 304 respondents reveals a diverse sample representative of the mobile government service user population. The sample comprised 52.3% female and 47.7% male participants, with ages ranging from 18 to 65 years. Educational backgrounds varied from high school completion to postgraduate degrees, with 68.4% holding bachelor's degrees or higher. Income levels spanned across different socioeconomic segments, ensuring adequate representation of various citizen groups[14].

Measurement model assessment demonstrated satisfactory reliability and validity for all constructs. Cronbach's alpha values ranged from 0.847 to 0.923, exceeding the recommended threshold of 0.7. Composite reliability values were consistently above 0.9, indicating excellent internal consistency. Average variance extracted (AVE) values ranged from 0.672 to 0.798, surpassing the minimum requirement of 0.5 and confirming convergent validity.

Discriminant validity was established through the Fornell-Larcker criterion and heterotrait-monotrait (HTMT) ratios. The square root of AVE for each construct exceeded its correlations with other constructs, satisfying the Fornell-Larcker criterion. HTMT ratios were below 0.85 for all construct pairs, confirming discriminant validity and indicating that each construct captures unique variance.

Table 1

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Structural model analysis revealed significant relationships between service quality dimensions and usage intention. The model explained 68.4% of the variance in usage intention ($R^2 = 0.684$), indicating substantial explanatory power. Predictive relevance (Q^2) was 0.542, confirming the model's predictive capability and supporting

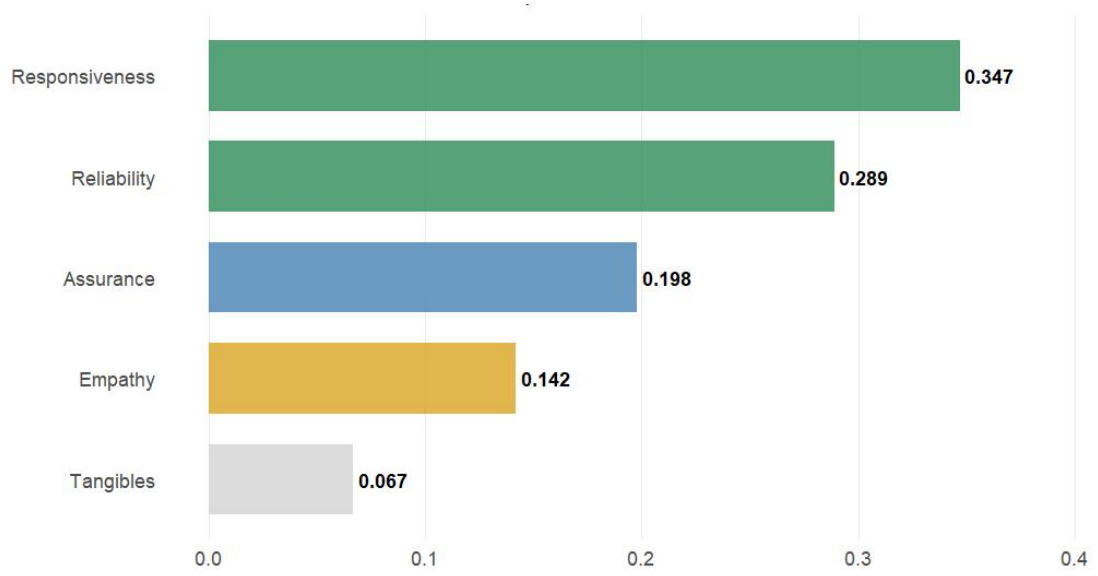
its validity.

Responsiveness emerged as the strongest predictor of usage intention ($\beta = 0.347$, $p < 0.001$), followed by reliability ($\beta = 0.289$, $p < 0.001$). These findings indicate that citizens prioritize quick service delivery and consistent performance when evaluating mobile government services. Assurance showed a moderate positive effect ($\beta = 0.198$, $p < 0.01$), highlighting the importance of security and trustworthiness in digital government contexts.

Empathy demonstrated a significant but smaller impact ($\beta = 0.142$, $p < 0.05$), suggesting that while personalization and understanding of citizen needs contribute to usage intention, they are less critical than operational aspects of service delivery. Surprisingly, tangibles showed no significant relationship with usage intention ($\beta = 0.067$, $p > 0.05$), indicating that visual appeal and interface design may be less important than functional performance in the mobile government context.

Figure 1

Dimensions Impact Analysis



The control variables revealed interesting demographic patterns in usage intention. Age showed a negative relationship ($\beta = -0.128$, $p < 0.05$), suggesting that younger citizens are more likely to express higher usage intentions[15]. Education level positively influenced usage intention ($\beta = 0.156$, $p < 0.01$), consistent with digital divide literature. Gender and income showed no significant effects, indicating that usage intention is relatively uniform across these demographic characteristics.

Mediation analysis revealed that citizen satisfaction partially mediates the relationship between service quality dimensions and usage intention. The indirect

effects through satisfaction were significant for all service quality dimensions except tangibles, explaining an additional 23.7% of the variance in usage intention. This finding supports the theoretical proposition that service quality influences behavioral intention through satisfaction formation.

5. Discussion and Conclusion

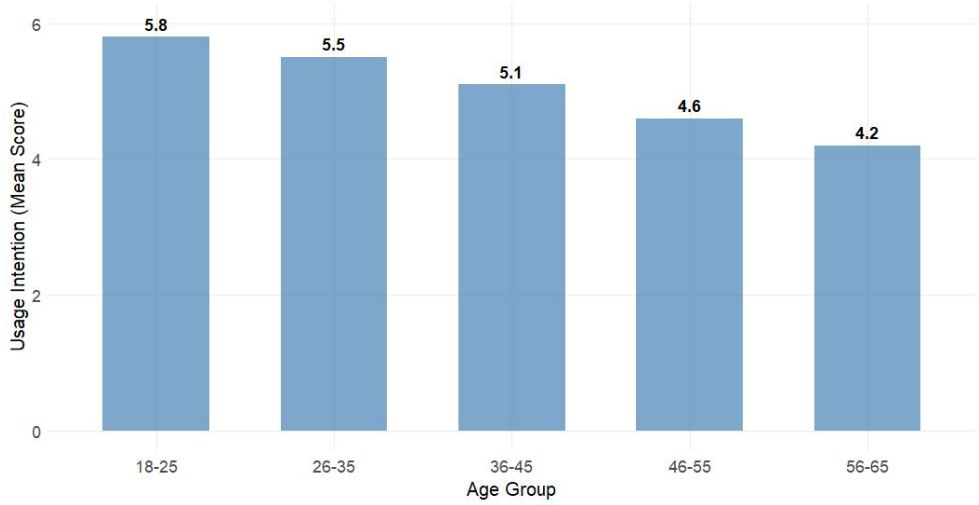
The findings of this study provide important insights into the relationship between mobile government service quality and citizens' usage intention, with significant implications for both theory and practice. The explanatory capacity of SERVQUAL model towards usage intention prediction being high ($R^2 = 0.684$) confirms the applicability of the SERVQUAL model in the mobile government application area and attests to its usability in measuring digital public service quality.

The dominance of responsiveness as the strongest predictor of usage intention expresses the specific expectations citizens have from mobile services. When commercial mobile apps offer instant feedback and real-time interaction, citizens anticipate the same level of performance from government services[16]. This result aligns with recent studies stressing the value of speed and efficiency in digital government service provision and indicates that governments need to have high system responsiveness as a priority to sustain citizen engagement.

The strong influence of reliability on usage intention highlights the essential requirement for stable, consistent service delivery in winning citizen trust and satisfaction. Citizens need assurance that mobile government services will function properly when needed, especially for time-critical transactions or urgent service requests. Such a finding warrants the necessity for highly reliable technical infrastructure and stringent quality assurance processes in mobile government implementations.

Figure 2

Age Usage Comparison



The limited effect of assurance highlights the overarching importance of security and trustworthiness in citizen uptake of mobile government services. Owing to the personal nature of the majority of government transactions and the inclusion of personal details, citizens must be sure of the security and capability of digital platforms. The result validates the importance of implementing strong cybersecurity infrastructure and of communicating security protocols effectively to citizens.

The smaller but significant impact of empathy suggests that while citizen-centered design and personalization are a factor in usage intention, they may be secondary to operational performance qualities. The result provides practical guidance for resource planning by suggesting that functional enhancements must be prioritized by the governments before they invest in personalization functionality extensively, even though empathy remains essential for general service quality.

The non-significant correlation between tangibles and use intention is an interesting contrast to conventional service quality literature. One could read this result as a sign of the maturity of mobile technology, in which basic visual attractiveness and ease of user interface are assumed and not points of differentiation. Citizens might be more interested in service outcomes rather than visual attractiveness, especially in government settings where function outstrips form. The demographic trends identified in this research have significant implications for inclusive mobile government service design. The negative relationship between usage intention and age reaffirms digital divide concerns and implies targeted support and alternative access channels for elderly citizens[17]. The positive relationship with educational level again implies digital literacy initiatives and accessible service design.

The mediational role of citizen satisfaction provides an explanation of the

underlying psychological process for service adoption. That satisfaction plays a partial mediational role for the service quality-usage intention relation means that improvements in service quality increase satisfaction, and in turn usage intention. This causal process warrants monitoring both service quality metrics and satisfaction metrics for forecasting and management purposes for citizen engagement. From a practical perspective, these findings give clear guidelines for mobile government service improvement initiatives. System responsiveness and reliability are something that governments need to invest in and improve as a matter of priority. Fast response times, continuous availability of services, and stable performance must be minimal design expectations for mobile government websites.Although empathy had lesser impacts compared to other dimensions, governments cannot disregard citizen-centered design principles. User feedback, offering personalized service alternatives, and making support channels easily accessible can all play a role in overall service quality and levels of citizen satisfaction, even though their influence on usage intention is less.

The study's limitations include its cross-sectional design, which prevents causal inference, and the convenience sampling approach, which may limit generalizability. Future research should employ longitudinal designs to examine the temporal dynamics of service quality perceptions and usage behavior. Cross-cultural studies would provide valuable insights into the universality of these findings across different national contexts.

In conclusion, this study demonstrates that mobile government service quality significantly influences citizens' usage intention, with responsiveness and reliability emerging as the most critical factors. The SERVQUAL model provides a useful framework for assessing and improving mobile government service quality, though the relative importance of different dimensions may differ from traditional service contexts. As governments continue to expand their digital service offerings, understanding and addressing the factors that drive citizen engagement becomes increasingly important for successful digital transformation initiatives. The findings provide a foundation for evidence-based decision-making in mobile government service design and implementation, ultimately contributing to more effective and citizen-centric digital governance.

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