

ISRG Journal of Economics, Business & Management (ISRGJEBM)



ISRG PUBLISHERS

Abbreviated Key Title: Isrg J Econ Bus Manag

ISSN: 2584-0916 (Online)

Journal homepage: <https://isrgpublishers.com/isrgjebm/>

Volume – IV Issue - II (March-April) 2026

Frequency: Bimonthly



Factors Impacting Citizens' Satisfaction Using Online Public Service in Hanoi, Vietnam

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| **Received:** 26.03.2026 | **Accepted:** 27.03.2026 | **Published:** 30.03.2026

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Abstract

Currently, in the context of accelerating digital transformation in the public sector, enhancing citizens' satisfaction with online public administrative services has become an issue of significant importance. This study aims to evaluate the factors influencing citizens' satisfaction when using online public services in Hanoi. The research results indicate that citizens' satisfaction is significantly affected by several factors, including the quality of online public services, the competence of staff providing direct guidance, the speed and quality of administrative service processing, and the quality of information. Based on these findings, the study proposes several managerial implications to improve service quality and strengthen citizens' trust and satisfaction with online public administrative services in Hanoi.

Keywords: online public service, satisfaction, service quality

1. Introduction

In recent years, the Government of Vietnam has placed strong emphasis on improving the quality of public administrative services, considering it a key pillar of administrative reform and the development of a service-oriented administration. This direction is clearly reflected in the 2021-2025 period through Resolution No. 76/NQ-CP, which aims to build a modern, streamlined, efficient, and transparent public administration centered on citizens and organizations. In this context, citizens' satisfaction is increasingly regarded as an important measure for evaluating the performance of public administrative agencies.

Alongside administrative reform, national digital transformation has been identified as a critical driver for modernizing governance

and public service delivery. According to Decision No. 749/QĐ-TTg issued by the Prime Minister, comprehensive application of information technology is expected to simplify administrative procedures, enhance transparency, improve operational efficiency, and reduce costs for both government agencies and citizens. Online public services enable citizens to complete administrative procedures anytime and anywhere with Internet access, thereby significantly saving time and costs compared to traditional methods.

In addition to these benefits, online public services help minimize harassment and inconvenience in administrative procedures, enhance the professional capacity and IT skills of public officials,

and strengthen transparency in government operations. However, in practice, the implementation of online public services still faces several limitations, such as usability challenges, system reliability, service processing quality, and the ability to meet citizens' expectations, leading to relatively low satisfaction levels and usage rates.

In Hanoi, online public services are considered a crucial component of administrative reform and e-government development. According to the city's plan, by 2025, over 80% of administrative procedures will be provided at levels 3 and 4 online services, and at least 50% of applications will be received and processed online. Nevertheless, practical implementation indicates that citizens still encounter various barriers when using these services and do not fully trust their quality and effectiveness.

Although some domestic studies have examined online public services, research focusing on citizens' satisfaction in the specific context of Hanoi remains limited. Therefore, this study aims to analyze the factors influencing citizens' satisfaction when using online public services in Hanoi, thereby proposing solutions to improve service quality, enhance user experience, and promote the effective implementation of online public services in the future.

2. Theoretical Framework

(1) Service quality

Service quality is a multidimensional concept that has been approached from various perspectives. Lehtinen and Lehtinen (1982) argued that service quality should be evaluated based on two fundamental aspects: the service delivery process and service outcomes. This approach emphasizes both how the service is performed and the final value received by customers.

A significant contribution to service quality research was made by Parasuraman et al. (1988, 1991) through the development of the SERVQUAL scale. They defined service quality as "the gap between customers' expectations of a service and their perceptions of the actual service performance." SERVQUAL includes 22 observed variables representing five core dimensions: tangibles, reliability, responsiveness, assurance, and empathy. Parasuraman et al. (1991) confirmed that SERVQUAL is a valid and reliable scale applicable across various service contexts.

(2) Online public services

Online public services are defined in Decree No. 43/2011/NĐ-CP (June 13, 2011) on providing information and online public services via government portals. According to Article 3, Clause 4, such services refer to "public administrative and other services provided by state agencies to organizations and individuals through the Internet." Circular No. 26/2009/TT-BTTTT classifies online public services into four levels: Level 1 provides information; Level 2 allows downloading forms; Level 3 enables online submission but requires offline payment and results collection; and Level 4 supports full online transactions, including payment and result delivery. The implementation of Levels 3 and 4 is considered a major step in administrative reform and e-government development, reducing costs and time while enhancing transparency and efficiency.

(3) Quality of online public administrative services

The growth of the Internet and e-commerce has fostered research on e-service quality. Due to the technology-based interaction between users and systems, traditional SERVQUAL cannot be fully applied, although most models are derived from it. Early

studies focused on website quality, highlighting usability, content, structure, interface, and search tools (Abels et al., 1999; Liu et al., 2000). Others adapted SERVQUAL dimensions to the online context (Sullivan & Walstrom, 2001). Yoo and Donthu (2001) proposed SITEQUAL, including ease of use, aesthetic design, processing speed, and security.

Further studies (Yang et al., 2004; Gounaris et al., 2005; Lee & Lin, 2005) confirmed the multidimensional nature of e-service quality. The E-SQ model by Parasuraman, Zeithaml and Malhotra (2005) extended SERVQUAL into online contexts, introducing E-S-Qual and E-RecS-Qual. Similarly, Wolfinbarger and Gilly (2003) developed EtailQ, covering website design, reliability, security, and customer service. These frameworks highlight the integration of technology, information, security, and support services.

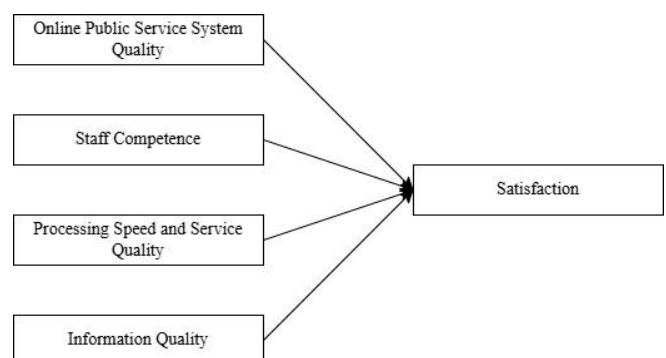
(4) Customer satisfaction

Customer satisfaction is a positive emotional state resulting from fulfilled or exceeded expectations. According to Fornell (1992), satisfaction reflects the gap between expectations and perceived performance, while Zeithaml and Bitner (2003) define it as customers' evaluation of how well a service meets their needs. Philip Kotler (2003) further emphasized that satisfaction depends on perceived value relative to expectations. In e-government, satisfaction positively influences citizens' intention to reuse online services, reduces resistance to digital adoption, and strengthens trust in government systems.

(5) Relationship between online public service quality and citizen satisfaction

According to Parasuraman (1985, 1988), service quality and satisfaction are distinct but closely related concepts. Service quality reflects cognitive evaluation, while satisfaction represents emotional response (Shemwell et al.). Empirical studies in e-government confirm that online service quality significantly and positively affects citizen satisfaction. Models such as E-SQ and EtailQ highlight key determinants, including usability, information quality, reliability, system security, and support services (Parasuraman et al., 2005; Wolfinbarger & Gilly, 2003). In e-government contexts, Carter and Bélanger (2005) also found that system quality and trust strongly influence satisfaction and adoption.

Fig 1. Research Model



Source: Proposed by Author

Based on the model "Citizens' satisfaction with mandatory e-government services: conceptual framework and empirical validation" by Abdullah Ibrahim Alkrajji (2020), this study proposes the following hypotheses:

H1: Online public service system quality positively affects citizen satisfaction.

H2: Staff competence positively affects citizen satisfaction.

H3: Processing speed and service quality positively affect citizen satisfaction.

H4: Information quality positively affects citizen satisfaction.

3. Methodology

This study was conducted in two stages: (1) a preliminary study and (2) a formal study. The preliminary study focused on model development and the refinement of measurement scales. The formal study employed a quantitative approach to test the proposed hypotheses based on data collected through a survey questionnaire administered to respondents who were residents of Hanoi aged from 18 to 60 and had used online public administrative services.

A convenience sampling method was applied. To enhance the generalizability of the data, data collection was conducted through both online survey questionnaires and direct interviews with citizens who had experience using online public administrative services in Hanoi.

The final sample used for quantitative analysis consisted of 406 valid responses to a questionnaire structured into three sections. The collected data were coded and analyzed using SPSS 20 and Amos 20. The analytical procedures included Cronbach's Alpha reliability analysis, Exploratory Factor Analysis (EFA) to assess the suitability of the measurement model, and Structural Equation Modeling (SEM) to test the research hypotheses.

4. Result

(1) Measurement Scale Reliability Testing using Cronbach's Alpha

Cronbach's Alpha reliability coefficient (Table 1) was employed to assess the reliability of the measurement scales through factors affecting the satisfaction of citizens using online public administrative services. The results of the Cronbach's Alpha test indicate that all scales achieved good reliability, with Alpha coefficients for all factor groups exceeding 0.7. Therefore, the measurement system, consisting of five scales with 24 observed variables, demonstrates satisfactory reliability.

(2) Exploratory Factor Analysis (EFA) Results

The results of the KMO and Bartlett's tests confirm that the data are entirely suitable for conducting EFA. Specifically, KMO = 0.915 (> 0.5), indicating a very high level of sampling adequacy. Bartlett's Test shows Sig. = 0.000, suggesting that the observed variables are linearly correlated. EFA using Principal Component Analysis with Varimax rotation yielded four factors with Eigenvalues greater than 1. The total variance explained reached 68.258%, exceeding the 50% threshold and ensuring statistical significance. Factor loadings for all variables were greater than 0.75, with no significant cross-loadings observed. The variables clearly converged into distinct factors, consistent with the initial theoretical model. This confirms both convergent and discriminant validity of the measurement scales.

Table 1: Measurement

Item	Description
Online public service system quality (SQ)	
Cronbach's Alpha = 0.881	

SQ1	The service interface is intuitive and easy to use
SQ2	Instructions on the system are clear and understandable
SQ3	The online public service portal provides sufficient basic information about responsible contact points for users when needed
SQ4	The system effectively integrates multiple channels (website, email, SMS, and other applications)
SQ5	The online public service system incorporates mechanisms for monitoring, receiving, and handling citizen feedback

Staff Competence (SC)

Cronbach's Alpha = 0.871

SC1	Officers have professional knowledge of administrative procedures
SC2	Officers possess information technology skills
SC3	Officers demonstrate effective communication skills
SC4	Officers have problem-solving skills
SC5	Officers exhibit a positive service attitude in handling tasks

Processing speed and service quality (PS)

Cronbach's Alpha = 0.903

PS1	Applications are processed on time or earlier than the regulated deadline
PS2	The processing progress is updated promptly
PS3	When additional requirements arise, the system/authority responds quickly
PS4	The processing procedure is consistent and reliable
PS5	The results are accurate and error-free

Information Quality (IQ)

Cronbach's Alpha = 0.868

IQ1	Information on the system is accurate and reliable
IQ2	Information security and user privacy are ensured
IQ3	Information on the system is clearly presented and easy to understand
IQ4	Information on the system is updated in a timely manner
IQ5	Information on the system is useful for citizens

Satisfaction (CS)

Cronbach's Alpha = 0.943

CS1	Satisfaction with the guidance provided on the online public service portal
CS2	Satisfaction with the competence of guiding officers
CS3	Satisfaction with the quality of information on the online public service portal

CS4	Satisfaction with the application processing procedures on the online public service portal
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Source: Compiled by Author

(3) Hypothesis Testing of the Research Model

All hypothesized relationships in the research model were validated using Structural Equation Modelling (SEM). The hypothesis testing results indicate that all four predictive factors have positive effects on Satisfaction (CS). Specifically, Processing Speed (PS) has the strongest impact ($\beta = 0.673$, $p < 0.001$), followed by System Quality (SQ) ($\beta = 0.404$, $p < 0.001$), Information Quality (IQ) ($\beta = 0.359$, $p < 0.001$), and finally the Competence of Guiding Officers (SC) ($\beta = 0.196$, $p < 0.001$). Therefore, all hypotheses H1, H2, H3, and H4 are supported.

Table 2: CB-SEM Model Result

	Coefficients	Std.Err.	p-value
SQ→CS	0.404	0.061	0.000
SC→CS	0.196	0.060	0.001
PS→CS	0.673	0.075	0.000
IQ→CS	0.359	0.062	0.010
		R²	0.494

Source: Compiled by Author

5. Implications for Enhancing Citizen Satisfaction with Online Public Administrative Services in Hanoi

Improving the Competence of Guiding Officers

The research findings indicate that the competence of guiding officers has the strongest impact on citizen satisfaction with online public administrative services in Hanoi, particularly in promoting the adoption of such services. First, it is essential to regularly organize training programs to enhance communication, listening, problem-solving, and persuasion skills when assisting citizens with administrative procedures. In addition, officers should be equipped with professional knowledge and expertise, especially in information technology and online public services, to improve their ability to guide and support users effectively. Developing both short-term and long-term training plans, combined with on-site training and learning from best practices in other localities, is necessary. These efforts contribute to improving responsibility, service attitude, and overall citizen satisfaction.

Designing User-Friendly and Accessible Online Public Service Systems

Online public service systems should be designed with intuitive, user-friendly interfaces that are accessible to all users, especially those with limited technological experience. Functions should be logically structured, and procedures should be clearly presented while minimizing unnecessary steps to save users' time and effort. Moreover, optimizing these services for mobile devices is crucial given the increasing use of smartphones. Systems must ensure stable access, convenient operation, and compatibility across different devices to enhance user experience and satisfaction. The integration of advanced technologies such as artificial intelligence, process automation, and online support systems can further reduce processing time, minimize manual tasks, and improve service efficiency. Additionally, service quality depends on effective

support and interaction. Providing online assistance channels such as live chat, automated responses, detailed instructions, and tutorial videos helps users resolve issues promptly, reduces hesitation, and builds trust. Establishing transparent and responsive feedback mechanisms also enables continuous service improvement. Finally, ensuring information security, data protection, and user privacy is critical. When citizens feel secure and confident in the system, they are more likely to use online services frequently, thereby enhancing public service delivery and advancing digital transformation.

Investing in Information Technology Infrastructure

To improve service quality and citizen satisfaction, the government should prioritize comprehensive investment in IT infrastructure. This includes ensuring stable, high-bandwidth networks capable of handling increasing user demand. Infrastructure systems must also support large-scale data storage and processing while ensuring security, data protection, and interoperability across government agencies, thereby improving operational efficiency and service reliability.

Strengthening Communication and Building Public Trust in E-Government Services

Enhancing citizen satisfaction requires innovative communication strategies. Traditional administrative documents should be replaced with modern formats such as infographics and short videos on platforms like Zalo and TikTok to improve accessibility and engagement. Personalizing instructional content for different user groups, combined with transparent real-time tracking of application status, can strengthen digital trust and reduce user hesitation. At the same time, authorities should emphasize soft skills training and service attitudes among officers, as professional competence is most effective when it generates positive user experiences. When trust and service quality are improved, citizens are more likely to adopt online public services not only for convenience but also due to strong confidence in the e-government system.

6. Conclusion

Citizen satisfaction with online public services depends on factors influencing the quality of online public administrative services. Therefore, the government should focus on improving service quality factors to better support citizens throughout their experience with online public services, such as ensuring the quality of online public service systems; enhancing the competence of guiding officers; improving interfaces and optimizing administrative processing procedures; and especially strengthening public trust in e-government, thereby promoting voluntary and effective adoption of online public services within the community.

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