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Abstract: This study compares the SERVQUAL and SERVPERF models in evaluating citizens' satisfaction with public administrative services in the construction sector in Hanoi, Vietnam. Based on the survey questionnaire analysis (N = 362), both models identify that procedures, information, fees, and staff are critical factors affecting citizen satisfaction, while facilities do not have a significant impact. SERVQUAL measures the gap between expectations and reality, helping identify areas for improvement to enhance service quality. However, the SERVPERF model, focusing on actual perceptions and a more substantial influence of factors, may provide more specific and practical suggestions for managers and policymakers in improving public service quality in Vietnam and other countries with similar contexts.

Keywords: public administrative services; SERVQUAL; SERVPERF; citizen satisfaction; Vietnam.

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1 Introduction

In the context of rapid urbanisation in developing countries, providing efficient and transparent public administrative services becomes a crucial factor in enhancing the quality of life for citizens (United Nations, 2018; UN-Habitat, 2016). In Hanoi, the

capital of Vietnam, the construction sector is essential in infrastructure development, urban planning management, and land use security (World Bank, 2015; Asian Development Bank, 2013). The quality of public administrative services in this field directly affects the speed and quality of urban development and impacts citizens' trust and satisfaction with the government (World Bank, 2015; Asian Development Bank, 2013).

Assessing citizen satisfaction with public administrative services is often based on validated theoretical models. Two of the most prominent models in this field are SERVQUAL and SERVPERF. The SERVQUAL model, developed by Parasuraman et al. (1985, 1988), measures the gap between customer expectations and their actual perceptions of service, focusing on five key dimensions: reliability, responsiveness, assurance, empathy, and tangibles. In contrast, the SERVPERF model, developed by Cronin and Taylor (1992), evaluates service quality based on customers' actual perceptions without comparing them to initial expectations (Cronin and Taylor, 1992; 1994).

Research in various fields has demonstrated the effectiveness of these models in identifying key factors influencing service satisfaction and areas for improvement. For example, studies in the healthcare sector have used SERVQUAL to highlight gaps in service delivery and patient care. At the same time, research in higher education has applied SERVPERF to evaluate academic and administrative support services. However, more studies need to be conducted that explicitly focus on public administrative services in the construction sector in Vietnam. In particular, studies in Vietnam have yet to thoroughly compare the SERVQUAL and SERVPERF models, affirming the suitability of measuring the quality of public administrative services in Vietnam.

This study addresses this gap by applying SERVQUAL and SERVPERF models to evaluate these services in Hanoi, Vietnam. As Vietnam's political, cultural, and economic centre, this city is an ideal case for studying the evaluation of public administrative services in the construction sector. The city's rapid urban development and unique urban planning challenges demand efficient and effective administrative services. Furthermore, Hanoi's diverse population and high demand for construction-related services provide a rich context for examining the factors influencing citizen satisfaction. Choosing Hanoi allows this study to comprehensively understand the service quality issues citizens face in a significant urban centre. The findings can be broadly applied to other rapidly urbanising cities in Vietnam and similar contexts globally, providing valuable insights for policymakers and urban planners.

By analysing survey data from 362 citizens, the study will elucidate the differences in the approach and evaluation outcomes of the two models. Consequently, the article will propose policy implications to improve public service quality, contributing to sustainable development and enhancing urban quality of life (Bryson and Curry, 2001; Adil et al., 2013).

The remainder of the article is organised as follows. Section 2 presents a literature review. Section 3 describes the research methodology, including the research framework, data collection, and analysis procedures. Section 4 analyses the results of the two models, highlighting key findings and their implications. Section 5 discusses the similarities and differences between the results of the two models. Finally, Section 6 concludes the article with a summary of key findings, proposes policy implications and suggests directions for future research.

2 Literature review

Urban management and development are contingent upon citizen satisfaction with public administrative services in urban areas. The structure and function of significant cities in developing countries such as Vietnam are undergoing significant changes in the context of globalisation and accelerated urbanisation (United Nations, 2018; UN-Habitat, 2016). Public administrative services, notably in the construction sector, support infrastructure development, manage urban planning and ensure land use security (van der Krabben et al., 2023; Yang et al., 2024). Public trust and contentment with the government are significantly influenced by the effectiveness of these services, which also affects the speed and quality of urban development (Alkraiiji and Ameen, 2021).

The SERVQUAL model, developed by Parasuraman et al. (1985), is a service quality assessment tool based on the difference between customers' expectations and their actual perceptions of the service received. This model emphasises that service quality is determined by the extent of the gap between customers' expectations and actual perceptions. SERVQUAL comprises five key dimensions: reliability, responsiveness, assurance, empathy, and tangibles.

- Reliability: the ability to provide reliable and accurate services as promised.
- Responsiveness: the promptness and willingness of staff to serve customers.
- Assurance: the ability to create trust and safety for customers through the competence and attitude of staff.
- Empathy: the care and individual attention that staff give to customers.
- Tangibles: the appearance of physical facilities, equipment, personnel, and communication materials.

Parasuraman et al. (1988) created this model to establish a structured framework for assessing and enhancing service quality in various sectors, including healthcare, education, and public services. This model has been extensively implemented and demonstrated to be effective in helping organisations improve and comprehend their service quality.

The SERVPERF model, which was created by Cronin and Taylor (1992), is a variant of SERVQUAL that emphasises the evaluation of service quality based on consumers' actual perceptions rather than their expectations. SERVPERF emphasises that the sole method of evaluating service quality should be to evaluate the actual performance of the service received by customers, thereby eradicating the complexity of measuring customer expectations. The service quality is directly assessed by the experiences and feedback of customers who have utilised the services. This is known as 'actual performance'.

Cronin and Taylor (1992) contended that measuring the disparity between expectations and actual perceptions would not produce more consistent and precise results than concentrating on customers' perceptions of service quality. This perspective has been corroborated by subsequent research, which has demonstrated that the SERVPERF model is more precise in certain instances and simplifies the data collection procedure (Cronin and Taylor, 1992, 1994).

The advantages and limitations of each model in various contexts have been emphasised in comparative studies between SERVQUAL and SERVPERF. In comparing

these two scales to assess the quality of retail services, Mehta et al. (2000) discovered that the advantages of each scale were contingent upon the specific application context. Bui et al. (2022) compared the predictive capabilities of SERVQUAL and SERVPERF in higher education in Vietnam. They discovered that both scales were valuable but required modifications to accommodate specific conditions.

In Vietnam, research on public administrative services is primarily categorised into three groups:

- 1 studies conducted by individual domestic scholars using traditional methods
- 2 studies conducted by domestic and international organisations, focusing on qualitative practical evaluations
- 3 studies conducted by individual researchers who develop and calculate evaluation indicators based on universally recognised models.

The first group of studies mainly analyses administrative reform at national, ministerial, or local levels, relying on traditional concepts such as procedural simplification and top-down directives. These works are largely descriptive and qualitative, with limited attention to citizen feedback, especially in terms of satisfaction or convenience. Representative studies include Nguyen et al. (2022), and Nguyễn (2015).

In contrast, the second group comprises research and reports funded by international organisations such as Mason (2004), ActionAid Vietnam (2010), and OECD (2010), which adopt more scientific, objective, and modern approaches with extensive international references. Vietnamese institutions have also collaborated to develop administrative performance indices, such as the provincial competitiveness index by VCCI and USAID, the public administration reform index by the ministry of home affairs, and the provincial governance and public administration performance index by the Vietnam Academy of Science and Technology and UNDP.

While these efforts are valuable, there remains a dearth of empirical studies that specifically examine the citizens' satisfaction with administrative services in the construction sector, despite its central role in shaping urban development. You et al. (2014) stressed the importance of legal and institutional frameworks in mediating agency issues in construction services, demonstrating how regulatory quality improves cooperation between developers and intermediaries. Meanwhile, Aksoy and Isik-Dikmelik (2012) showed that accessible infrastructure and administrative support services significantly improved rural income and local development in Vietnam, underscoring the link between administrative performance and infrastructure outcomes.

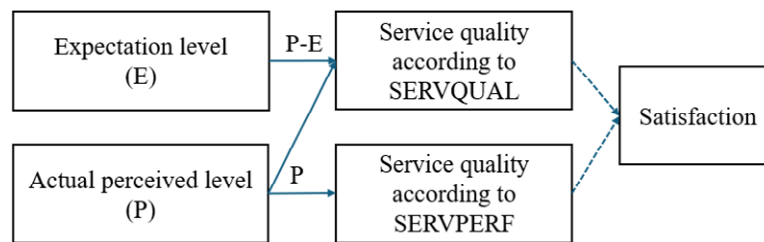
This study aims to address the scarcity of empirical and theoretical research on the contentment of citizens with public administrative services in the Hanoi construction sector. By contrasting the SERVQUAL and SERVPERF models, the study will provide valuable recommendations for managers and policymakers in selecting appropriate evaluation methods and propose policy implications to enhance the quality of public services.

3 Methodology

3.1 Research framework

The author of this paper utilises the theoretical underpinnings of the SERVQUAL and SERVPERF models, which are two critical and widely employed instruments for evaluating customer satisfaction by evaluating service quality from the customer's perspective. The SERVQUAL and SERVPERF methodologies are both reasonable for evaluating service quality, and in truth, each method is suitable for various services, client groups, settings, and conditions. Identifying the most suitable method for general public administrative services in Vietnam, particularly in Hanoi, is time-consuming. Consequently, the model will evaluate the perceived quality of citizens in both the anticipated and actual sense. The questionnaire will aid individuals in comprehending these two concepts and submit responses that are both precise and dependable. Subsequently, an approach that yields the most precise results (as indicated by a higher correlation coefficient between these two variables) will be implemented following the widely recognised actuality of a close correlation between service quality and satisfaction. Figure 1 illustrates this approach.

Figure 1 Service quality assessment method of the model (see online version for colours)



Source: Author's proposal

Given that the SERVQUAL and SERVPERF models were initially intended to apply to a broad spectrum of services, the key factors and component criteria (variables) contain general content that may not readily apply to specific services. Although numerous component criteria are associated with distinct factors, their content has a commonality. Consequently, applying these models frequently necessitates modifying and adjusting each key factor and its component criteria. Both domestic and international researchers frequently employ this method to assess the quality and satisfaction of particular services.

The SERVQUAL and SERVPERF models are also utilised in the majority of Vietnam research to evaluate citizens' quality and satisfaction with public administrative services. The key factors and component criteria of the original models are frequently substantially altered by researchers (Hoang and Hau, 2011; Manzin et al., 2012). Table 1 illustrates the proposed framework for assessing citizen satisfaction with public administrative services in the construction sector of Hanoi's districts, as determined by domestic and international research outcomes. Consequently, the proposed factors and component criteria are comprehensive and closely aligned with the specific characteristics of public administrative services in the construction sector in Hanoi's districts. This ensures that the model's structure is simple, easy to apply, and convenient for the design of survey questionnaires and feedback collection.

Table 1 Factors and components of each factor in the model applied to Hanoi

<i>Factor</i>	<i>Component (Variables)</i>
Facilities	Well-constructed, high-quality headquarters and offices
	Attractive, clean, and convenient interior and facilities
	Modern, useful equipment and machinery
Staff	Skilled, knowledgeable about procedures
	Good attitude and sense of service
	Efficient and quick work processing
Procedure	Responsible, objective, impartial, and non-self-serving work handling
	Reasonable, convenient, easy-to-apply requirements for procedures
	Appropriate requirements for forms, documents, and paperwork
Information	Executed and resolved as per regulations and announcements
	Convenient location of headquarters and offices
	Suitable working hours
Fees	Clear, transparent, easily understandable information and guidance provided at headquarters, offices, and on the internet
	Easy, quick, and convenient contact for work and feedback through phone, internet, mail, and direct meetings
	Appropriate for the nature and complexity of procedures
	Affordable for citizens
	Collected as per regulations, with no additional charges

Source: Author's proposal

Table 2 Description and coding of control variables

<i>Control variable</i>	<i>Question</i>	<i>Coding</i>
Gender	'What is your gender?'	0 for male, 1 for female
Age	'How old are you?'	Continuous integer
Marital status	'What is your marital status?'	0 for single, 1 for married
Educational level	'What is your highest educational qualification?'	1 for high school, 2 for university/college, 3 for post-graduate
Type of administrative procedure	'Which type of administrative procedure are you currently undertaking?'	1 for construction permit, 2 for repair permit, 3 for other procedures
Level of understanding of public service	'What is your level of understanding of the procedures and requirements of this public administrative service before undertaking this procedure?'	Scale from 1 (Not at all) to 5 (Very well)
Experience in handling administrative procedures	'How many times have you handled this type of administrative procedure before?'	Integer, representing the number of times the participant has previously undertaken similar administrative procedures

Source: Author's summary

Furthermore, the author integrates control variables into the model to evaluate the influence of individual and social factors on citizen satisfaction with public administrative services, as per previous research. These factors encompass gender, marital status, educational level, type of administrative procedure, level of comprehension of the process and service requirements, and experience in managing administrative procedures (Ryzin and Charbonneau, 2010; Yang, 2018; Lamsal and Gupta, 2022). Table 2 concisely overviews these variables' collection and coding processes.

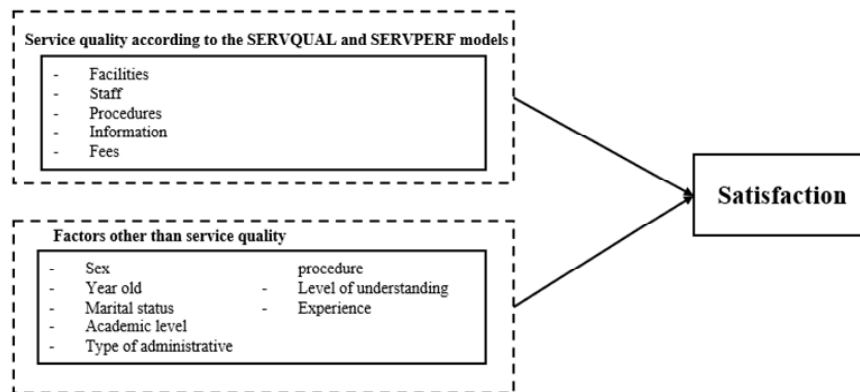
Based on the above analysis, the proposed research model framework is presented in the Figure 2.

3.2 Data

Data for this study were collected via a structured questionnaire targeting citizens who had utilised public administrative services in the construction sector across various districts of Hanoi. The questionnaire was grounded in the SERVQUAL model – assessing service quality across five dimensions: reliability, responsiveness, assurance, empathy, and tangibles – complemented by prior empirical studies and expert input to ensure contextual relevance.

A pilot survey involving 10 experts in public administration and urban construction was conducted to refine the instrument. Based on their feedback, several questions were revised for clarity and precision.

Figure 2 Research framework



Source: Author's proposal

The final version was administered to 400 respondents, yielding 362 valid responses. A 7-point Likert scale (1 = 'very poor' to 7 = 'very good') captured perceptions of service quality. Stratified random sampling ensured representation across ten districts, covering both urban and suburban areas.

To mitigate selection and non-response bias, data collection took place at multiple service locations and through online platforms. Additional follow-up interviews were conducted with hesitant participants. The final dataset was demographically balanced in terms of age, gender, and education level, ensuring robustness and representativeness.

4 Results

4.1 Descriptive statistics

Table 3 presents the demographic characteristics of the 362 survey respondents. The sample consisted of 67% male and 33% female participants. Most respondents were married (88%), while 12% were single. Regarding the number of children, 66% had two children, followed by 9% with three, and 3% with more than three.

In terms of age, 33.6% of respondents were between 31 and 40 years old, 29.8% were aged 41–50, and 10.9% were between 18 and 30. The proportion of those aged 51–60 and above 60 was 15.6% and 10.0%, respectively. Educational attainment was predominantly at the college/university level (55%), followed by high school (26%) and postgraduate degrees (19%). In terms of residential location, the highest representation came from Dong Da (21.3%), Hoan Kiem (18.2%), and Cau Giay (17.9%) districts.

Table 4 summarises occupational background and experience with administrative procedures. The most common occupations were business (20.2%), public servants (18.8%), and workers (10.4%). Other occupations included service workers, teachers, engineers, freelancers, and drivers.

Table 3 Descriptive statistics of respondents' demographic characteristics

<i>Characteristics</i>	<i>N</i>	<i>%</i>	<i>Characteristics</i>	<i>N</i>	<i>%</i>
<i>Sex</i>			<i>Marital</i>		
Male	243	67	Single	43	12
Female	119	33	Married	319	88
<i>District</i>			<i>Number or child</i>		
Ba Dinh	57	15.7	0	40	11
Cau Giay	65	17.9	1	40	11
Dong Da	77	21.3	2	239	66
Ha Dong	2	0.6	3	33	9
Hai Ba Trung	34	9.5	3+	11	3
Hoan Kiem	66	18.2	<i>Age</i>		
Hoang Mai	3	0.8	18–30	39	10.9
Long Bien	21	5.9	31–40	122	33.6
Tay Ho	15	4.2	41–50	108	29.8
Thanh Xuan	19	5.3	51–60	56	15.6
Tu Liem	2	0.6	60+	36	10

Source: Author's calculation results

Regarding administrative experience, 68.6% of respondents had performed procedures once, 22.7% had done so twice, and 5.6% had done so more than twice. In terms of proficiency, 62.6% reported moderate understanding of administrative procedures, 30.3% reported little understanding, and 2.2% reported being well-informed. Concerning the types of public services used in the construction sector, 57.7% of respondents had experience with obtaining permits for house repairs and upgrades, while 42.3% had obtained construction permits.

4.2 EFA analysis results

Exploratory factor analysis (EFA) was conducted to identify the main factors affecting people's satisfaction with public administrative services. The results of KMO and Bartlett's tests show that the data are suitable for conducting EFA ($KMO > 0.8$, $p < 0.001$). Three main factors were identified, including

- 1 procedures, information, and fees
- 2 staff
- 3 facilities.

Table 4 Descriptive statistics of occupation and administrative engagement

<i>Characteristics</i>	<i>N</i>	<i>%</i>	<i>Characteristics</i>	<i>N</i>	<i>%</i>
<i>Occupation of surveyed subjects</i>			<i>Educational</i>		
Doctor/pharmacist	10	2.8	High school	94	26
Worker	38	10.4	College/University	199	55
Public servants	68	18.8	Graduated	69	19
Service	33	9	<i>Number of times administrative procedures have been performed</i>		
Teacher	18	5	0	11	3.1
Retired	22	6.2	1	248	68.6
Business	73	20.2	2	82	22.7
Engineer	12	3.4	2+	20	5.6
Driver	8	2.2	<i>Level of proficiency in administrative procedures</i>		
Arts/Journalism	9	2.5	None	17	4.8
Freelancer	24	6.7	Litte	110	30.3
Housewife	14	3.9	Moderate	227	62.6
Manager	4	1.1	Well	8	2.2
Student	4	1.1	Very well	0	0
Office	24	6.7			
Type of public administrative services in the construction sector that people use					
Issuing construction permits	153	42.3			
Issuing licenses to upgrade and repair houses	209	57.7			

Source: Author's calculation results

4.3 Reliability test of the measurement scales

Cronbach's alpha coefficient is employed to evaluate the reliability of the instruments. The results indicate that the scales employed in the study are highly reliable, as evidenced by Cronbach's alpha coefficient, which is more significant than 0.7.

4.4 Quality of public administrative services in the construction sector in districts of Hanoi

Table 5 demonstrates that the quality of public administrative services in the construction sector in Hanoi's districts is generally perceived as higher than anticipated by the general public, albeit the difference is modest (5.236/7 vs. 5.219/7).

The discrepancy between individuals' genuine perceptions and expectations regarding each factor is negligible. The two factors, staff, and facilities, were rated higher by individuals after they encountered actuality that differed from their expectations, whereas the factors of procedures, information, and fees had the opposite effect. Nevertheless, individuals assess the quality factors when they are perceived in actuality and expected to be relatively close to each other, with a fluctuation of approximately 5.2/7 (a little above the fair level). These results indicate that, in general, individuals have a comprehensive understanding of the characteristics of public administrative services in the construction sector in Hanoi districts. Consequently, there is a minimal discrepancy between expectations and actual perceptions. Additionally, the factors and the component criteria within each factor are evaluated relatively equally.

Table 5 Average values of factors and general quality that people expect and perceive in reality

Overall quality		Factor		Average value
Expectation	5.219	F1	Procedure, information and fees	5.212
		F2	Staff	5.183
		F3	Facilities	5.262
Perceived reality	5.236	F1	Procedure, information and fees	5.191
		F2	Staff	5.243
		F3	Facilities	5.281

Source: Author's survey results

4.5 Results from the OLS regression

The satisfaction of individuals is directly influenced by the discrepancy between their actual assessment and their expectations of the quality of public administrative services in the construction sector, as per the theoretical foundation of the SERVQUAL and SERVPERF models. Consequently, the regression model is constructed in the following manner:

$$\text{Satisfaction} = f(F_1, F_2, F_3, \text{controls})$$

In which: F1, F2, and F3 are independent variables that are assessed based on the average value of the difference between the actual assessment and the expected service quality for each of the three groups:

- 1 staff
- 2 facilities
- 3 procedures, information, and fees.

In order to evaluate the influence of personal and social factors on the satisfaction of individuals with public administrative services, the author incorporated Vector control variables into the research model, as per previous studies. These variables include gender, marital status, education level, administrative procedure type, understanding of service processes and requirements, and experience in managing administrative procedures (Ryzin and Charbonneau, 2010; Yang, 2018; Lamsal and Gupta, 2022). The OLS regression results for the SERVQUAL and SERVPERF approaches are summarised below.

4.5.1 *The SERVQUAL model result*

In Table 6, Model 1 exclusively employs primary factors, including procedures, information, fees, staff, and facilities. Model 2 enhances model fit by incorporating individual control variables and procedure categories. Model 3 incorporates regional effects to regulate the impact of location factors further. The regression results regarding the impact of independent variables on contentment are generally consistent. However, Model 3 exhibits the maximum level of variation explanation, indicating a superior ability to explain the satisfaction of individuals. Consequently, the author will conduct a detailed examination of the findings in Model 3.

The findings indicated that customer satisfaction was significantly influenced by procedures, information, and fees, with a coefficient of $\beta = 0.296$ and a high level of statistical significance ($p < 0.01$). In addition, customer satisfaction was positively influenced by the staff ($\beta = 0.139$, $p < 0.1$), while facilities did not have a significant impact ($\beta = 0.0474$, $p > 0.1$).

Gender (Male = 0, Female = 1) has a coefficient of $\beta = -0.0594$, which is not statistically significant, suggesting that gender does not have a significant on satisfaction. Additionally, age does not have a substantial influence ($\beta = -0.00206$). Nevertheless, satisfaction is significantly and positively influenced by marital status (married = 1) ($\beta = 0.236$, $p < 0.01$). Higher educational levels also have a positive impact, with $\beta = 0.144$ for the university/college group and $\beta = 0.249$ for the postgraduate group, both statistically significant ($p < 0.01$).

Satisfaction is negatively affected by procedures other than maintenance permits (the reference group), as evidenced by a coefficient of $\beta = -0.217$ and statistical significance ($p < 0.05$). Experience has a positive effect ($\beta = 0.106$, $p < 0.01$), while higher levels of understanding have a negative impact on satisfaction ($\beta = -0.189$, $p < 0.01$).

This model explains approximately 18.3% of the variance in customer satisfaction, with 362 observations and an adjusted R^2 of 0.183. This suggests that the model has moderate explanatory power. In conclusion, customer satisfaction is significantly influenced by a variety of factors, including personnel, marital status, educational level, type of procedure, level of understanding, and experience, as well as procedures,

information, and fees. Procedures, information, and fees have the most significant effects, while gender, age, and facilities do not have a significant impact.

Table 6 Regression results using the SERVQUAL model

<i>Variables</i>	<i>Satisfaction</i>		
	<i>Model 1</i>	<i>Model 2</i>	<i>Model 3</i>
Procedures, information and fees	0.253** (0.10)	0.331*** (0.10)	0.296*** (0.10)
Staff	0.111* (0.06)	0.111* (0.06)	0.139** (0.06)
Facilities	0.0898* (0.05)	0.0502 (0.06)	0.0474 (0.06)
Gender: female (1) vs. male (0)		−0.0813 (0.05)	−0.0594 (0.05)
Age		−0.00337 (0.00)	−0.00206 (0.00)
Marriage: married (1) vs. single (0)		0.232*** (0.08)	0.236*** (0.08)
Education level: university/college (2) vs. high school (1)		0.168*** (0.06)	0.144** (0.06)
Education level: graduate (3) vs. high school (1)		0.271*** (0.08)	0.249*** (0.08)
Type of procedure: construction permit (1) vs. repair licensing (0)		−0.0443 (0.05)	−0.0438 (0.05)
Type of procedure: other (2) than repair licensing (0)		−0.217** (0.09)	−0.217** (0.09)
Level of understanding		−0.175*** (0.04)	−0.189*** (0.04)
Experience in handling administrative procedures		0.0928*** (0.03)	0.106*** (0.03)
<i>Region fixed effect</i>	<i>No</i>	<i>No</i>	<i>Yes</i>
<i>Observations</i>	<i>362</i>	<i>362</i>	<i>362</i>
<i>Adjusted R²</i>	<i>0.030</i>	<i>0.164</i>	<i>0.183</i>

Notes: Constants are not reported. Standard errors in parentheses. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

4.5.2 The SERVPERF model result

In Table 7, Model 4 exclusively employs primary factors, including procedures, information, fees, personnel, and facilities. Model 5 enhances model fit by incorporating individual control variables and procedure categories. Model 6 incorporates regional effects to regulate the impact of location factors further. The regression results regarding the impact of independent variables on contentment are generally consistent.

Nevertheless, Model 6 demonstrates the maximum level of variation explanation, indicating a superior ability to explain the satisfaction of individuals. Consequently, the author will conduct a detailed examination of the findings in Model 6.

The SERVPERF model's OLS regression analysis results in Model 6 suggest that the factors of procedures, information, fees ($\beta = 0.672$, $p < 0.01$), and staff ($\beta = 0.114$, $p < 0.1$) all have a positive impact on citizen satisfaction, with a more considerable influence than the SERVQUAL model. Nevertheless, facilities do not have a substantial impact, as evidenced by the coefficient of ($\beta = 0.0421$, $p > 0.1$).

Table 7 Regression results using the SERVPERF model

<i>Variables</i>	<i>Satisfaction</i>		
	<i>Model 4</i>	<i>Model 5</i>	<i>Model 6</i>
Procedures, information and fees	0.651*** (0.06)	0.679*** (0.07)	0.672*** (0.07)
Staff	0.135** (0.06)	0.117** (0.06)	0.114* (0.06)
Facilities	0.0552 (0.05)	0.0617 (0.05)	0.0421 (0.05)
Gender: Female (1) vs. Male (0)		-0.0164 (0.04)	-0.00454 (0.05)
Age		-0.00254 (0.00)	-0.00194 (0.00)
Marriage: married (1) vs. single (0)		0.187*** (0.06)	0.187*** (0.06)
Education level: university/college (2) vs. high school (1)		0.0590 (0.05)	0.0555 (0.05)
Education level: graduate (3) vs. high school (1)		-0.0423 (0.07)	-0.0443 (0.07)
Type of procedure: construction permit (1) vs. repair permit (0)		-0.0176 (0.04)	-0.0186 (0.04)
Type of procedure: other (2) than repair licensing (0)		-0.255*** (0.08)	-0.261*** (0.08)
Level of understanding		-0.0430 (0.03)	-0.0543 (0.04)
Experience in handling administrative procedures		0.0939*** (0.02)	0.0982*** (0.02)
<i>Region fixed effect</i>	<i>No</i>	<i>No</i>	<i>Yes</i>
<i>Observations</i>	<i>362</i>	<i>362</i>	<i>362</i>
<i>Adjusted R2</i>	<i>0.368</i>	<i>0.416</i>	<i>0.420</i>

Notes: Constants are not reported. Standard errors in parentheses. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

The control variables consist of gender, age, marital status, educational level, type of procedure, level of comprehension, and experience. The findings suggest that customer satisfaction is not substantially influenced by gender or age, as the coefficients of $\beta = -0.00454$ and $\beta = -0.00194$, respectively, are statistically insignificant. Marital status significantly and positively influences satisfaction ($\beta = 0.187$, $p < 0.01$). The coefficients for the university/college and postgraduate categories are $\beta = 0.0555$ and $\beta = -0.0443$, respectively, which are both statistically insignificant. Consequently, the educational level does not have a significant impact.

The type of procedure is also a critical factor, as satisfaction is substantially degraded by other types of procedures ($\beta = -0.261$, $p < 0.01$). Conversely, building permits do not have a substantial impact ($\beta = -0.0186$). Satisfaction is not significantly influenced by the level of comprehension ($\beta = -0.0543$). In contrast, experience has a significant and positive impact ($\beta = 0.0982$, $p < 0.01$).

With 362 observations and an adjusted R^2 of 0.420, this model explains approximately 42% of the variance in customer satisfaction, indicating a good fit. The results suggest that procedures, information, fees, and staff are essential determinants of customer satisfaction. Particularly, procedures, information, and fees have the strongest impact. Factors like facilities, gender, age, educational level, and level of understanding do not significantly impact. However, marital status and experience have significant effects, highlighting the necessity of considering these personal factors when improving the quality of public administrative services. These findings provide crucial insights for managers and policymakers in enhancing customer satisfaction with public administrative services in the construction sector.

5 Discussion

The SERVQUAL and SERVPERF models yield comparable outcomes with respect to the variables that influence citizen satisfaction with public administrative services in the Hanoi construction sector. In particular, both models suggest that procedures, information, fees, and staff substantially and positively influence citizen satisfaction. Babakus and Boller (1992), Dimitriades and Maroudas (2007), and Ali and Raza (2015) are among the numerous international studies that have yielded comparable outcomes. This discovery emphasises the significance of enhancing staff service quality, establishing reasonable fee levels, providing exhaustive and transparent information, and improving procedural processes. Furthermore, both models demonstrate that the factor of facilities does not have a substantial effect on citizen satisfaction. This outcome is comparable to the research conducted by Lin et al. (2009). This can be attributed to the fact that citizens are more concerned with the quality and efficiency of the services themselves than with the tangible facilities where the services are provided.

Although both models agree on the essential factors influencing satisfaction, they differ significantly in their approach and the extent to which these factors are affected. The SERVPERF model has a stronger influence than the SERVQUAL model, which is especially meaningful in the context of Hanoi, where public administrative services are undergoing many reforms to improve efficiency and quality. Hanoi citizens are more concerned with the actual results of services rather than the difference between expectations and reality. The Hanoi government's efforts to reform administrative

procedures and increase transparency are consistent with citizens' needs for service efficiency and transparency. The SERVPERF model, which focuses on actual perceptions of service performance, better reflects these improvements because citizens can immediately see the benefits of improvements during service use, thereby significantly increasing their satisfaction. This emphasises the importance of improving the performance, efficiency, and transparency of public administrative services and meeting the needs and expectations of the people.

In summary, the SERVQUAL and SERVPERF models offer valuable insights into the factors affecting citizen satisfaction with public administrative services. However, the SERVPERF model, focusing on actual perceptions and more substantial impact of factors, may provide more specific and practical suggestions for managers and policymakers in improving the quality of public services in Hanoi.

6 Conclusions

This study compared the SERVQUAL and SERVPERF models to evaluate citizens' satisfaction with public administrative services in the construction sector in Hanoi. Both models identified procedures, information, fees, and staff as essential factors affecting citizen satisfaction, while facilities did not have a significant impact. Due to its focus on actual service performance, the SERVPERF model may provide more practical and valuable suggestions for managers and policymakers in Hanoi. Based on the research results from both the SERVQUAL and SERVPERF models, several important policy implications can be proposed to improve the quality of public administrative services in the construction sector in Hanoi.

- First, the research results indicate that procedures are crucial to citizen satisfaction. Therefore, it is necessary to simplify and standardise procedural processes, ensuring transparency and clarity. Reducing unnecessary steps and facilitating citizens' access to services will enhance efficiency and satisfaction.
- Second, the government should ensure that all information related to public administrative services is complete, easy to understand, and accessible. This includes using multiple information channels such as websites, notice boards, guidance documents, and other media to make it easier for citizens to find and access the necessary information.
- Third, investments should be made in training and developing staff skills, including professional and communication skills, to enhance service quality. A friendly working environment should also be fostered, and the staff's sense of responsibility, objectivity, and fairness in serving citizens should be encouraged.
- Fourth, modern technology in managing and providing public administrative services is crucial to enhancing efficiency and transparency. Technological solutions can include:
 - 1 Developing and implementing electronic management systems to monitor and manage administrative procedures. These systems help minimise errors, enhance transparency, and ensure quick and efficient processing.

- 2 Developing online portals allowing citizens to access information, submit applications, track processing progress, and receive results online. This not only facilitates citizens but also reduces the burden on administrative agencies.
 - 3 Deploying mobile applications so citizens can access administrative services anytime, anywhere. These applications can provide information, support searches and submissions, and send notifications and updates on processing progress.
- Finally, periodic assessments of citizen satisfaction are necessary to ensure the effective implementation of policies and improvement measures.
 - 1 Regular surveys will be conducted to gather opinions and feedback from citizens on the quality of public administrative services. These surveys should include evaluation criteria based on SERVQUAL and SERVPERF models.
 - 2 The government should analyse and identify existing issues based on survey results, then adjust and improve policies and service processes. This approach not only enhances citizen satisfaction but also facilitates sustainable urban development.
 - 3 Publicise the results of citizen satisfaction assessments to create transparency and increase public trust in the government. This also encourages citizen participation in policy planning and implementation, contributing to building an efficient and democratic public administration system.

Future research should expand the scope to other cities and regions in Vietnam to better understand citizen satisfaction. Additionally, diversifying the research sample to ensure higher representativeness and combining quantitative and qualitative methods would provide more profound and comprehensive insights.

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