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ANALYSIS OF CITIZEN SATISFACTION: DETERMINANTS OF THE PERFORMANCE OF MUNICIPAL AUDIOVISUAL SERVICES

Análisis de satisfacción ciudadana. Determinantes del desempeño de los servicios audiovisuales municipales

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ABSTRACT

Citizen demand for quality public services has increased considerably in recent years, prompting the public to demand greater efficiency in service delivery from local public administrations—especially in contexts where political continuity is linked to public perception. Consequently, the objective of this study was to assess the level of citizen satisfaction with municipal services. The measurement was conducted through a household survey, using a sample of 567 questionnaires collected in three urban parishes in the city of Guayaquil. Additionally, the American Customer Satisfaction Index (ACSI) was used, and a structural equation modeling (SEM) approach was applied to test the formulated hypotheses. The results demonstrated that citizen loyalty toward Guayaquil's local public administration is determined by satisfaction, perceived quality, and the value attributed to municipal services. Furthermore, opportunities for improvement were identified regarding municipal police services, traffic management, pedestrian crossings, and social assistance programs. These findings could serve as a valuable foundation for local public administrators to develop initiatives aimed at strengthening the municipal services provided and, in this way, help maintain citizens' loyalty toward the local public administration.

Keywords: citizen satisfaction, municipal public services, perceived quality, local public administration, structural equations.

RESUMEN

La demanda ciudadana de servicios públicos de calidad ha aumentado considerablemente durante los últimos años, lo cual ha motivado a la población a exigir mayor eficiencia en la prestación de servicios por parte de las administraciones públicas locales, especialmente en aquellos contextos donde la continuidad política se encuentra vinculada con la percepción de la ciudadanía, por consiguiente, el objetivo de esta investigación fue evaluar el nivel de satisfacción ciudadana con los servicios municipales. La medición se efectuó mediante una encuesta dirigida a los hogares, para lo cual se empleó una muestra conformada por 567 cuestionarios recopilados en tres parroquias urbanas de la ciudad de Guayaquil, además, se utilizó el Índice Americano de Satisfacción del Cliente ACSI y, con la finalidad de contrastar las hipótesis formuladas, se aplicó un modelo de ecuaciones estructurales SEM. Los resultados demostraron que la lealtad ciudadana hacia la administración pública local de Guayaquil se encuentra determinada por la satisfacción, la calidad percibida y el valor atribuido a los servicios municipales, asimismo, se reconocieron oportunidades de mejora relacionadas con los servicios de policía municipal, la organización del tránsito vehicular, los cruces peatonales y los programas destinados a la asistencia social. Los hallazgos obtenidos podrían constituir una base relevante para que los administradores públicos locales desarrollen acciones orientadas al fortalecimiento de los servicios municipales ofrecidos y, de esta manera, contribuyan a conservar la lealtad de la ciudadanía hacia la administración pública local.

Palabras clave: satisfacción ciudadana, servicios públicos municipales, calidad percibida, administración pública local, ecuaciones estructurales.

1. Introduction

T Assessing the quality of public services poses a significant challenge for local governments, particularly because they operate within strictly defined regulatory, legal, and administrative frameworks (Morales et al., 2025; Wirtz et al., 2020). One of the main challenges facing public administration is achieving better results in the provision of services to citizens (Moncayo, 2024; Osborne, 2010).

Economic development and advances in information and communication technologies (ICT) have increased the demands placed on local governments (Cárdenas Gómez, 2025; Denhardt, J. V., & Denhardt, 2007; Poister, T. H., & Henry, 1994), forcing them to improve their efficiency in delivering public services (Guerrero Palma, 2026; Nilson, 1992). Growing global competition has transformed the dynamics of production and management, making continuous improvement a fundamental element today (Anderson et al., 1994; Hidalgo-Fernández et al., 2019; Ordóñez, 2025).

The importance of citizen participation for effective democratic governance has led governments to pay greater attention to citizens' opinions and expectations (Cazzuffi & Retamal, 2026). Democracy generates its own demands, as political actors put forward proposals aimed at meeting increasingly complex needs in order to secure electoral support, while citizens expect these demands to be addressed efficiently (Guerrero-Gómez, 2021).

In Latin America, political decentralization processes driven by international organizations and developed countries promoted the transfer of powers to regional and municipal governments (Marques, 2026). These reforms, implemented primarily following the return to democracy during the 1980s and 1990s, aimed to improve the quality of public services through management that was more attuned to the needs of the population (Velasco, 2024). The transfer of authority from national ministries to local governments helped strengthen an approach focused on service quality and citizen satisfaction (Vilca Corrales et al., 2026).

The importance of local governments in people's daily lives is growing (Guerrero-Gómez, 2021; Ordóñez, 2025). Satisfaction with the provision of public services is an intrinsically valuable element, as it facilitates interaction between citizens and government institutions (Liu & He, 2019; Puška et al., 2021), strengthens democracy, and contributes to meeting the needs and expectations of the population; citizen satisfaction has thus established itself as a key component of public management (de Walle, 2018).

Citizen satisfaction is considered one of the main indicators for evaluating the quality of public services (McEvoy et al., 2019). The quality of municipal services is typically measured based on users' perceptions, generally through satisfaction surveys (de Walle, 2018). From this perspective, perceived quality represents an evaluation of the

service based on a comparison between prior expectations and the experience gained after using it (Guo et al., 2018; Rico et al., 2022).

Citizens' expectations can be influenced by factors such as educational level (Deitcher & Alon, 2025), income, or socioeconomic status (Dev et al., 2025). In this sense, service quality can be defined as the difference between users' expectations and their perceptions of the service received; this quality is typically assessed through attributes such as efficiency, responsiveness, and personalization, which contribute to the formation of perceived quality and, consequently, to citizen satisfaction (Ganotice et al., 2016).

Various studies indicate that more than one-third of municipalities with populations exceeding 25,000 use the results of satisfaction surveys as input for political and budgetary decision-making (Poister, TH, & Streib, 1999), so that local governments can efficiently design and implement public policies (Bouckaert et al., 2005); it is essential to have accurate information on citizens' levels of satisfaction with municipal services (Bostancı & Erdem, 2020; Hubatková, 2019).

The specialized literature presents various methods for measuring citizens' perceptions of the quality of public services. However, much of the research has focused on analyzing the influence of predefined factors on citizen satisfaction, without necessarily including mechanisms to verify the validity of the proposed assumptions.

In this study, a Structural Equation Modeling (SEM) approach (J. F. Hair et al., 2011) was employed, following the methodology of the American Customer Satisfaction Index (ACSI) (Ali, S. S., & Kaur, 2018), to assess the satisfaction of Guayaquil citizens with municipal services. This index has been widely used in both the public and private sectors (Hernández-Rojas et al., 2021; Sarstedt et al., 2019), enabling managers, administrators, and economists to conduct comprehensive assessments of user satisfaction (Semple, 2019).

The study was conducted in Guayaquil, Ecuador's second-most populous canton (Very Illustrious Municipality of Guayaquil, 2021), with a population of nearly three million inhabitants (Sageo, 2021). The city is located in the lower Guayas River basin and is of strategic importance for the country's economic development (Silva, 2016).

The objective of this article is to assess citizen satisfaction with municipal services in an urban parish of the city of Guayaquil. This study is relevant given the political and institutional significance of the city and the scarcity of previous research analyzing satisfaction with municipal services in this context.

The article is organized into four sections. The second section presents a review of the literature related to citizen satisfaction and the evaluation of local public services, including the main findings and methodologies used in previous studies. The third section describes the methodology employed in the study. The fourth section presents and analyzes the results obtained. Finally, the conclusions, implications of the study, and future lines of research are presented.

The growing citizen-centered orientation of organizations has driven the development of mechanisms designed to evaluate service quality and user satisfaction levels (Rulandari et al., 2025). In both the private and public sectors, satisfaction has become established as a key indicator for measuring organizational performance and guiding continuous improvement processes (Metwally & Samir, 2024). National and corporate satisfaction indices have gained increasing importance as tools for decision-making and the formulation of policies geared toward user needs (Lee, 2026).

Citizen satisfaction is a key indicator for evaluating the quality of public services and the responsiveness of government institutions (Waheduzzaman et al., 2025). The literature indicates that citizens tend to value not only the results obtained but also aspects related to efficiency, accessibility, transparency, and the quality of interaction with public entities; therefore, understanding the factors that determine citizen satisfaction is essential for strengthening the legitimacy of local governments and improving the provision of public services (Chen et al., 2024).

Various studies have analyzed the relationship between citizen satisfaction and the performance of municipal administrations (Espinosa et al., 2023); empirical evidence shows that indicators of institutional performance are typically associated with higher levels of citizen satisfaction. Research conducted in various national contexts has shown that perceptions of the quality of municipal services significantly influence citizens' evaluations of their local governments (Gao & Sun, 2025).

A wide variety of methodologies have been used to analyze citizen satisfaction with municipal public services, including correlation analyses, factor analyses, regression models, clustering analyses, multi-criteria methods, importance-performance analyses, and structural equation models (Forman & Beeri, 2024). These approaches have made it possible to identify factors associated with citizen satisfaction in various areas of municipal management, such as road infrastructure, solid waste management, urban mobility, social programs, public safety, and community services (Y. Wang et al., 2024).

Results from various countries show that citizen satisfaction is closely linked to the perceived quality of public services ; studies conducted in Europe, Asia, and Africa indicate that factors such as institutional responsiveness, administrative efficiency, the quality of urban infrastructure, and government transparency are key determinants of citizens' assessments (Mkhitaryan et al., 2026). Furthermore, the provision of public information and accountability have been shown to positively influence perceptions of government performance (Romero et al., 2022).

Various models argue that satisfaction results from a comparison between users' prior expectations and the perceived performance of the service received; among these approaches, the American Customer Satisfaction Index (ACSI) stands out, as it is widely used to analyze the relationships between perceived quality, perceived value, satisfaction, and loyalty (Kim et al., 2024). This model has been applied in both private organizations and public institutions due to its ability to explain the causal

relationships among the main constructs associated with satisfaction (Mao & Zhu, 2025).

Despite the growing body of literature on citizen satisfaction, most research has been conducted in countries in Europe, North America, and some emerging economies in Asia (Hegele et al., 2024; Zulmasyhur, 2026). Studies focused on Latin American local governments remain limited, particularly those that use structural equation models to simultaneously assess the effects of perceived quality, perceived value, and satisfaction on citizen loyalty (Bastida & Estrada, 2025).

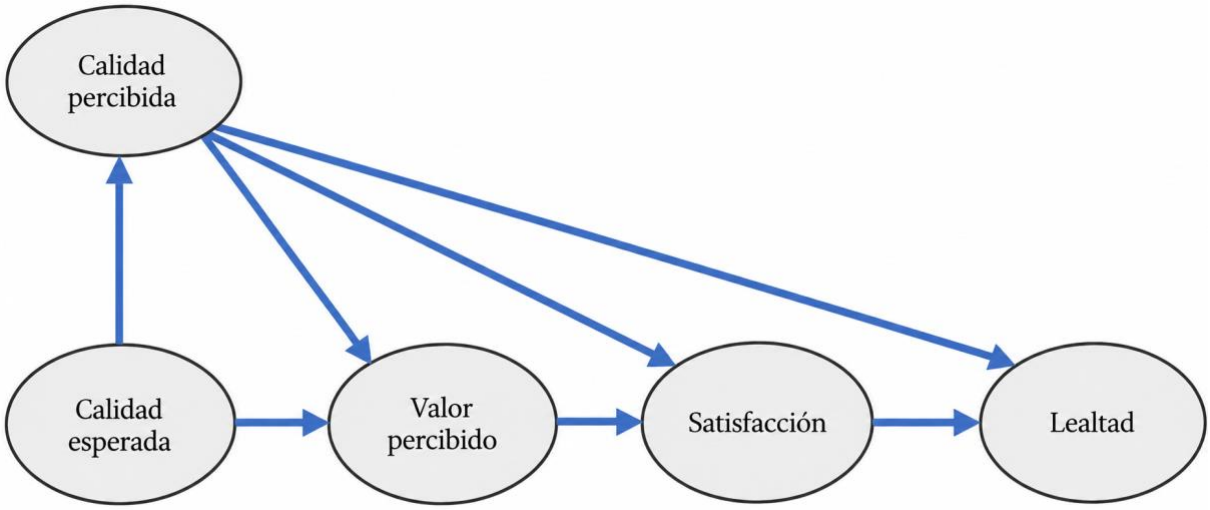
In the case of Ecuador, empirical evidence on citizen satisfaction with municipal services remains scarce; this situation is particularly relevant in cities such as Guayaquil, which are characterized by prolonged political continuity and high visibility of local public policies (Ochoa et al., 2023). The lack of studies that comprehensively analyze citizen satisfaction in this context presents an opportunity to expand our understanding of the factors that influence the evaluation of municipal public services (Zamora et al., 2025).

The main contribution of this research is the application of the ACSI model using structural equation modeling to assess citizen satisfaction with municipal services in an urban parish of Guayaquil. The study provides empirical evidence for the Ecuadorian and Latin American contexts, contributing to the debate on the quality of public services, municipal management, and local governance.

Based on the theoretical framework developed, we propose the hypotheses to be tested (Figure 1).

Figure 1.

Theoretical Research Model



Source: Prepared by the authors.

Hypothesis 1 (H1). Citizens' expectations regarding the quality of municipal services significantly influence their perceived quality of the municipal services they use.

Hypothesis 2 (H2). The quality citizens expect from municipal services significantly influences the perceived value of the municipal services they use.

Hypothesis 3 (H3). The quality citizens perceive in municipal services significantly influences the value citizens perceive in the municipal services they use.

Hypothesis 4 (H4). Citizens' perceived quality of municipal services significantly influences their satisfaction with the municipal service used.

Hypothesis 5 (H5). Citizens' perceived value of municipal services significantly influences their satisfaction.

Hypothesis 6 (H6). Citizens' perceived quality of municipal services significantly influences their loyalty.

Hypothesis 7 (H7). Citizens' satisfaction with the municipal services they use significantly influences their loyalty.

2. Methodology

The American Customer Satisfaction Index (ACSI) ranks among the most widely recognized national indices, as introduced by (Morgeson et al., 2023). The ACSI evaluates customer satisfaction at four levels: company or government entity, industry, economic sector, and national economy.

The ACSI model is used to identify the main factors influencing satisfaction and the areas that require attention to improve service delivery (Li & Wu, 2026; Tian et al., 2025).

The ACSI analyzes customer satisfaction based on three dimensions:

1. Perceived Quality: This refers to the evaluation of the consumer experience, which has a direct and positive effect on the overall level of customer satisfaction (Li et al., 2025; Mo & Beh, 2025).

2. Perceived Value: The relationship between the quality received and the price paid; it has a limited influence on repeat purchases but becomes more significant during the customer's first purchase (Hsu, 2008; W. Wang & Kim, 2024).

3. Customer Expectations: These reflect the experience prior to the purchase and are formed through sources such as advertising or word-of-mouth communication (Tao et al., 2025).

It is posited that these three dimensions have direct and positive effects on satisfaction, since a favorable assessment of them by the consumer should lead to a better experience. Attitudinal loyalty, meanwhile, is considered one of the main outcomes derived from satisfaction (Islam, 2024; Kaiser & Boakye, 2026).

In order to assess the satisfaction and loyalty of household members regarding the municipal services provided to citizens, a questionnaire was administered that was designed to measure the following dimensions, which were structured as latent variables:

1. The perceived quality of the city's municipal services as a whole (PERQUAL).

2. The quality citizens expect to receive from using municipal services (EXPEQUAL).

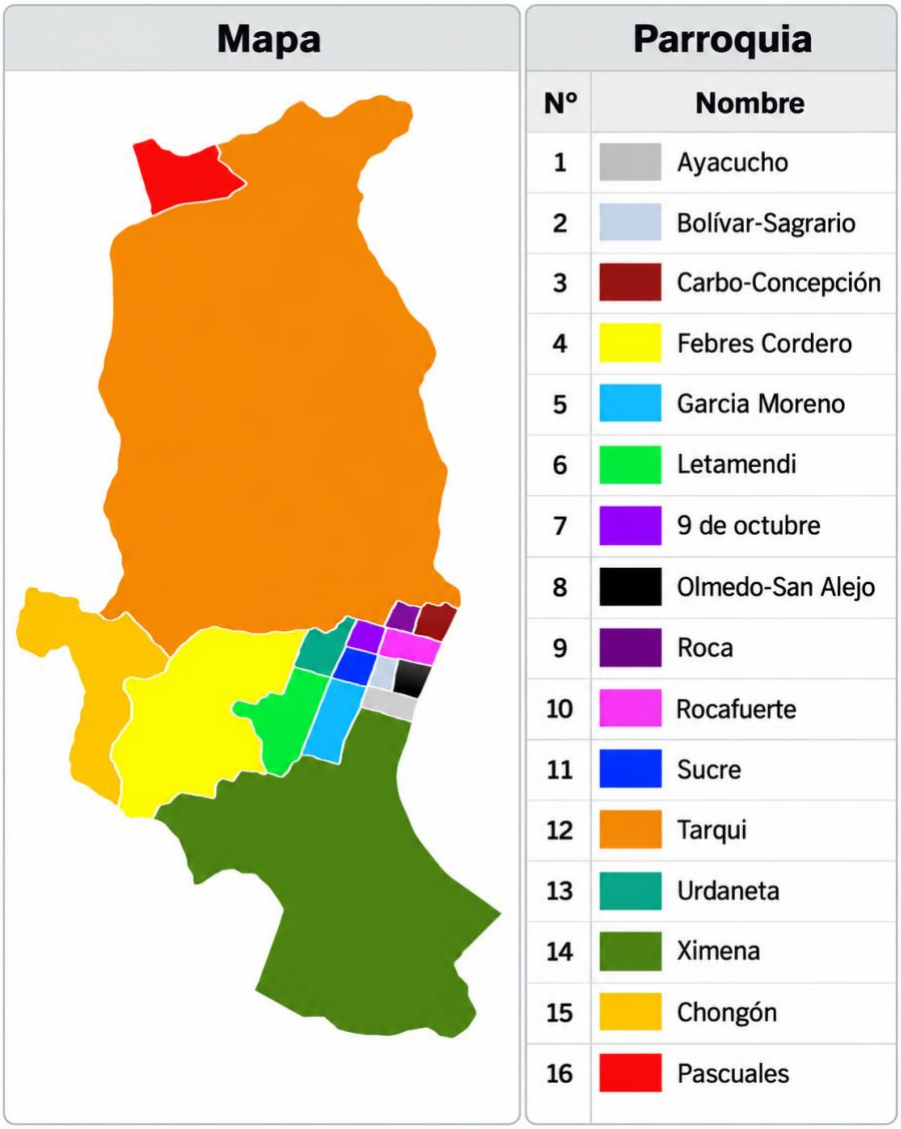
3. Perceived value, defined as the positive or negative difference between expected quality and perceived quality. Citizen experience is assessed based on the relationship between what citizens expected from the services and what they actually receive from them (PERVALU).

4. Satisfaction is measured as the number of citizens who would not change their voting intention to continue supporting the local government (SATISFAC).

The study area for this research is the city of Guayaquil, considered the second most populous canton in the Republic of Ecuador. It has a population of nearly three million and is located in the lower basin of the Guayas River, which flows into the Pacific Ocean. Guayaquil covers an area of 347 km², stretching along the Guayas River; it is bordered to the west by the Estero Salado, while to the south it extends toward the mouth of the Puntilla de Guayaquil, which reaches as far as Puná Island (Pérez & Orejuela, 2023).

Figure 2.

Theoretical Research Model



Source: Author's own work.

Guayaquil is located at coordinates 2°11'46.2" S 79°53.173' W and consists of 16 urban and 5 rural parishes (see Figure 2). The form of government is a Decentralized Municipal Government, in which the mayor— —is elected by popular vote along with 15 members of the cantonal council to serve a four-year term (Hernández et al., 2025).

The items were based on studies with similar measurement objectives (Bostancı & Erdem, 2020; Moteki, 2023). The validity of the questionnaire was ensured by using questions from previous studies (Hult et al., 2019; Psomas et al., 2024).

To measure citizens' satisfaction and loyalty regarding Guayaquil's public services, a household-level survey consisting of 67 items was administered, organized into three sections described below:

1. Questions related to expected quality, perceived quality, and perceived value, considering the areas in which the Municipality of Guayaquil has assigned responsibilities, including land-use planning, road infrastructure, public safety, social welfare, transportation, and the provision of municipal services in general.

2. Questions related to satisfaction with and loyalty toward the public administration, based on citizens' experiences with the services it provides

3. Questions aimed at identifying citizens' socioeconomic profile.

The questionnaire corresponding to the first two sections was organized using a seven-point Likert scale, where one represented the lowest rating and seven the highest rating regarding expected quality, perceived quality, and perceived value.

The data were collected through primary sources via an individual, voluntary survey administered during morning and afternoon hours. The study population consisted of 4,500 households distributed across three parishes in Guayaquil; The survey was administered to a total of 567 households selected using simple random sampling, including samples of 183, 171, and 213 households in the parishes of 9 de Octubre, Roca, and Rocafuerte, respectively. A 95% confidence level and a margin of error of 3.85% were achieved.

The structural equation modeling (PLS-SEM) approach was used; it was implemented using WarpPLS 7.0 software to estimate the models. PLS-SEM is considered an appropriate analytical technique for both theory development and testing (Cheah & Hair, 2025). The initial model was developed (see Figure 1 above) based on the American Customer Satisfaction Index (ACSI), incorporating both observed and latent variables. Table 1 presents the model's constructs along with the unobserved and latent variables, as well as the measurement errors corresponding to the proposed model.

Table 1.

Scales Used

Reference	Dimension	Indicators
Afroj et al. (2021); Das et al. (2021); Bucaite & Vilkas (2018); Gendel & Billig (2021); Martínez et al. (2015)	Expected Quality (EXPEQUAL)	(EQ1) Zoning and urban planning, (EQ2) Roads and pavements, (EQ3) Traffic management and intersections, (EC4) Public transportation services, (EQ5) Parking services, (EQ6) Directional signage, (EQ7) Transportation terminal services, (EQ8) Drinking Water Quality, (EQ9) Wastewater and Sewer Services, (EQ10) Waste Collection and Environmental Cleaning Services, (EQ11) Parks and Gardens, (EQ12) Public and Street Lighting, (EQ13) Preservation of Historical and Cultural Structures, (EQ14) Cultural Activities, (EQ15) Social and Cultural Facilities, (EQ16) Cemetery Services, (EQ17) Social Activities, (EQ18) Firefighting Services, (EQ19) Municipal Police Services, (EQ18_2) Sports Services, (EQ19_2) Veterinary Services, (EQ20) Noise reduction, (EQ21) Air pollution, (EQ22) Green spaces, (EQ23) Social assistance.
Samkar & Alpu (2013); Noda (2020); Baser & Tan (2023); Salas (2014)	Satisfaction (SATISFAC)	Satisfaction: (S1) Satisfaction with the land-use and road planning experience, (S2) Satisfaction with the municipal service provision experience, (S3) Overall satisfaction with the user experience.
Rodrigues & Tavares (2020); Ni et al. (2020); Salas (2014); Tutu et al. (2026); Alkraiji & Ameen (2022); Peighambari et al. (2016)	Loyalty (LOYALTY)	Loyalty: (L1) I would recommend that my friends or family members vote for the mayor of Guayaquil, (L2) I would vote for the mayor of Guayaquil again, (L3) I would recommend the services provided by the Municipality of Guayaquil , (L4) I would recommend that family members or friends living outside the city move to Guayaquil, (L5) I would recommend that family members or friends living outside the city visit Guayaquil as tourists.
Kowalski et al. (2020); Pinar et al. (2026); Schofield & Reeves (2025); Zenker & Rütter (2014)	Perceived Quality (PERQUAL)	Perception: (PQ1) Zoning and urban planning, (PQ2) Roads and pavements, (PQ3) Traffic management and intersections, (PQ4) Public transportation services, (PQ5) Parking services, (PQ6) Directional signage, (PQ7) Transportation terminal services, (PQ8) Drinking water quality, (PQ9) Wastewater and sewer services, (PQ10) Waste collection and environmental cleanup services, (PQ11) Parks and gardens, (PQ12) Public and street lighting, (PQ13) Preservation of historical and cultural structures, (PQ14) Cultural Activities, (PQ15) Social and Cultural Facilities, (PQ16) Cemetery Services, (PQ17) Social Activities, (PQ18) Firefighting Services, (PQ19) Municipal Police and Services, (PQ18_2) Sports Services, (PQ19_2) Veterinary Services, (PQ20) Noise reduction, (PQ21) Air pollution, (PQ22) Green spaces, (PQ23) Social assistance.

Reference	Dimension	Indicators
Sánchez et al. (2019); Kato et al. (2024); Arancibia et al. (2025); Ercsey & Józsa (2015)	Perceived perceived (PERVALU)	Perceived value: Perceived value: (PV4) Public transportation services, (PV5) Parking services, (PV7) Transportation terminal services, (PV8) Drinking Water Quality, (PV9) Wastewater and Sewer Services, (PV10) Waste Collection and Environmental Cleaning Services, (PV11) Parks and Gardens, (PV12) Public and Street Lighting, (PV13) Preservation of Historical and Cultural Structures, (PV14) Cultural Activities, (PV15) Social and Cultural Facilities, (PV16) Cemetery Services, (PV17) Social Activities, (PV18) Firefighting Services, (PV19) Municipal Police Services, (PV18_2) Sports Services, (PV19_2) Veterinary Services

Source: Author's own work.

The proposed model and its coefficients were estimated using generalized least squares (GLS). This procedure incorporates the error terms, the regression coefficients (relationship between exogenous and latent endogenous variables), as well as the relationships between these variables (Table 3).

According to Goretzko et al. (2024), it is recommended to use opposite indicators to assess model fit, whose quality indices generally range from 0 to 1, with the value closest to 1 representing a perfect fit.

3. Results

This section presents the results of the descriptive analysis of the sociodemographic profile of the surveyed citizens. Next, an evaluation of the reliability and validity of the model proposed in this study is conducted, concluding with a test of the formulated hypotheses.

The sociodemographic profile of the citizens (see Table 2) who used public services in Guayaquil shows that 53.09% were men and 45.68% were women, while 1.23% of respondents chose not to specify their gender; and individuals aged 18 to 39 accounted for 76.55% of the total. 51.15% had a high school education, while 100% were Ecuadorian nationals; 70.55% reported an income of less than $400, and 85.71% confirmed that Guayaquil was their sole place of residence.

Table 2.

Sociodemographic Profile of Tourists

Variable	Categories	Absolute frequency	Percentage
Gender (n=521)			
	Male	301	53.09
	Female	259	45.68
	Prefers not to say	7	1.23
Age (n=521)			
	[Under 30]	254	44.80
	[30–39]	180	31.75
	[40–49]	73	12.87
	[50–59]	43	7.58
	[60 or more]	17	3.00
Level of education (n=521)			
	No education	1	0.18
	Elementary school	39	6.88
	Secondary education	290	51.15
	Higher education	225	39.68
	Graduate education	12	2.12
Country of origin (n=521)			
	Domestic	567	100
Income level (n=521)			
	Less than $400	400	70.55
	Between $400 and $2,000	159	28.04
	Between $2,001 and $5,000	4	0.71
	Between $5,001 and $10,000	2	0.35
	More than $10,001	2	0.35
Guayaquil was their only place of residence (n=521)			
	YES	486	85.71
	NO	81	14.29

Source: Author's own work.

Table 3 shows the relationship between the latent variables and the values of the structural coefficients, as well as the cutoff probability for each variable with respect to each latent variable, along with the number of items for each variable, thereby validating the relationship between the constructs in the proposed model.

Table 3.

Standardized structural coefficients of the observed variables with respect to the latent variables

Latent Variables	Observed Variables	Coefficients	P-value
EXPQUAL	(EQ1) Expectations: Zoning and Urban Planning	0.808	< 0.001
	(EQ2) Expectations Regarding Roads and Pavements	0.854	< 0.001
	(EQ3) Expectations Regarding Traffic Organization and Intersections	0.856	< 0.001
	(EQ4) Expectations Regarding Public Transportation Service	0.878	< 0.001
	(EQ5) Expectations Regarding Parking Services	0.824	< 0.001
	(EQ6) Expectations Regarding Directions	0.846	< 0.001
	(EQ7) Expectations regarding transportation terminal services	0.907	< 0.001
	(EQ8) Expectations regarding drinking water quality	0.876	< 0.001
	(EQ9) Expectations Regarding Wastewater and Sewer Services	0.879	< 0.001
	(EQ10) Expectations for Garbage Collection and Environmental Cleaning Services	0.855	< 0.001
	(EQ11) Expectations for Parks and Gardens	0.849	< 0.001
	(EQ12) Expectations for Public and Street Lighting	0.894	< 0.001
	(EQ13) Expectations regarding the preservation of historical and cultural structures	0.853	< 0.001
	(EQ14) Expectations regarding cultural activities	0.862	< 0.001
	(EQ15) Expectations: Social and Cultural Facilities	0.872	< 0.001
	(EQ16) Expectations: Cemetery Services	0.883	< 0.001
	(EQ17) Expectations regarding social activities	0.882	< 0.001
	(EQ18) Expectations: Firefighting Services	0.866	< 0.001

Latent Variables	Observed Variables	Coefficients	P-value
	(EQ19) Expectations for Municipal Police Services	0.834	< 0.001
	(EQ18_2) Expectations regarding sports services	0.875	< 0.001
	(EQ19_2) Expectations for Veterinary Services	0.873	< 0.001
	(EQ20) Expectations regarding noise reduction	0.824	< 0.001
	(EQ21) Expectations: Air Pollution	0.871	< 0.001
	(EQ22) Expectations for Green Spaces	0.872	< 0.001
	(EQ23) Expectations regarding social assistance	0.866	< 0.001
PERCQUA	(PQ1) Perception of Zoning and Urban Planning	0.708	< 0.001
	(PQ2) Perception of Roads and Pavements	0.700	< 0.001
	(PQ3) Perception of Traffic Organization and Intersections	0.617	< 0.001
	(PQ4) Perception of Public Transportation Service	0.671	< 0.001
	(PQ5) Perception of Parking Services	0.648	< 0.001
	(PQ6) Perception of Directional Information	0.729	< 0.001
	(PQ7) Perception of Transportation Terminal Services	0.780	< 0.001
	(PQ8) Perception of Drinking Water Quality	0.668	< 0.001
	(PQ9) Perception of wastewater and sewer services	0.650	< 0.001
	(PQ10) Perception of Garbage Collection and Environmental Cleaning Services	0.735	< 0.001
	(PQ11) Perception of Parks and Gardens	0.693	< 0.001
	(PQ12) Perception of Public and Street Lighting	0.684	< 0.001
	(PQ13) Perception: Preservation of Historical and Cultural Structures	0.728	< 0.001
	(PQ14) Perception of cultural activities	0.743	< 0.001
	(PQ15) Perception of Social and Cultural Facilities	0.759	< 0.001
	(PQ16) Perception of cemetery services	0.666	< 0.001
	(PQ17) Perception of Social Activities	0.722	< 0.001
	(PQ18) Perception of Firefighting Services	0.718	< 0.001
	(PQ19) Perception of Municipal Police Services	0.563	< 0.001

Latent Variables	Observed Variables	Coefficients	P-value
	(PQ18_2) Perception of Sports Services	0.722	< 0.001
	(PQ19_2) Perception of Veterinary Services	0.642	< 0.001
	(PQ20) Perception of Noise Minimization	0.623	< 0.001
	(PQ21) Perception of Air Pollution	0.535	< 0.001
	(PQ22) Perception of Green Spaces	0.683	< 0.001
	(PQ23) Perception of Social Assistance	0.625	< 0.001
PERVALU	(PV4) Perceived Value of Public Transportation Service	0.646	< 0.001
	(PV5) Perceived Value of Parking Services	0.641	< 0.001
	(PV7) Perceived value of transportation terminal services	0.762	< 0.001
	(PV8) Perceived value of drinking water quality	0.529	< 0.001
	(PV9) Perceived value of wastewater and sewer services	0.634	< 0.001
	(PV10) Perceived value of waste collection and environmental cleanup services	0.759	< 0.001
	(PV11) Perceived value: Parks and gardens	0.747	< 0.001
	(PV12) Perceived value of street and road lighting	0.634	< 0.001
	(PV13) Perceived value: Preservation of historical and cultural structures	0.758	< 0.001
	(PV14) Perceived value: Cultural activities	0.797	< 0.001
	(PV15) Perceived value of social and cultural facilities	0.788	< 0.001
	(PV16) Perceived value of cemetery services	0.606	< 0.001
	(PV17) Perceived value of social activities	0.775	< 0.001
	(PV18) Perceived value of firefighting services	0.695	< 0.001
	(PV19) Perceived value of municipal police services	0.557	< 0.001
	(PV18_2) Perceived value of sports services	0.730	< 0.001
	(PV19_2) Perceived value of veterinary services	0.629	< 0.001
SATISFACTION	(S1) Satisfaction with the land-use planning and road infrastructure experience	0.842	< 0.001
	(S1) Satisfaction with the experience of municipal service provision	0.901	< 0.001

Latent Variables	Observed Variables	Coefficients	P-value
	(S3) Overall satisfaction with the user experience	0.891	< 0.001
LOYALTY	(L1) Loyalty I would recommend that my friends or family members vote for the mayor of Guayaquil	0.907	< 0.001
	(L2) Loyalty I would vote for the mayor of Guayaquil again	0.887	< 0.001
	(L3) Loyalty: I would recommend the services provided by the Municipality of Guayaquil	0.905	< 0.001
	(L4) Loyalty: I would recommend that family members or friends living outside the city move to Guayaquil	0.834	< 0.001
	(L5) Loyalty: I would recommend that family members or friends who live outside the city visit Guayaquil as tourists	0.806	< 0.001

Source: Author's own work.

The evaluation of the model establishing the reliability and validity of the constructs was conducted by determining whether they were reflective or formative; the formative constructs included in the model, corresponding to loyalty, were assessed as suggested by (Bollen & Diamantopoulos, 2017; J. Hair et al., 2020). Of the 70 reflective items, 48 had factor loadings greater than 0.707 (Table 3), indicating adequate individual reliability for the items comprising each first-order construct.

Table 4.

Item-Wisdom Reliability (Formative)

Observed variable	Factor loading
L1	0.907
L2	0.887
L3	0.905
L4	0.834
L5	0.806

The validity and reliability of the construct measures were examined before drawing conclusions about the relationships among them (Benitez et al., 2020; Ringle et al.,

2023). Subsequently, multicollinearity was analyzed using the variance inflation factor (VIF), whose values were below 5.0, indicating the absence of multicollinearity among the variables of the loyalty construct. The five factor loadings (Table 4) exceeded 0.707, and their weights were nonzero in all cases; therefore, it was decided to retain them in the model.

The evaluation of the reflective constructs—corresponding to satisfaction, expectations, and quality—included the individual reliability of the indicators, the internal consistency of the construct, and the convergent and discriminant validity of the reflective constructs (Cheung et al., 2023). The results showed adequate individual reliability, with a minimum coefficient of 0.505. The loadings reached statistical significance at the 99.99% level; consequently, the model was considered valid.

The composite reliability and Cronbach's alpha coefficients allow for the evaluation of the latent variable they represent, with a score of 0.70 for Cronbach's alpha and 0.50 for the composite reliability coefficient considered satisfactory (Panahi et al., 2023; Shela et al., 2023). Table 5 shows that the five constructs achieved coefficients greater than 0.5 and 0.70, respectively.

Cronbach's alpha coefficient showed that four of the five constructs exceeded 0.9 in their measurements (Loyalty, Expected Quality, Perceived Value, and Perceived Quality) and that one construct (Satisfaction) scored 0.851, thereby validating all five constructs. The composite reliability coefficients indicated that each of the five constructs had a satisfactory score above 0.9 (Loyalty, Satisfaction, Expected Quality, Perceived Value, and Perceived Quality).

Table 5.

Composite Reliability and Cronbach's Alpha

Construct		Composite Reliability	Cronbach's Alpha
LOYALTY	Loyalty	0.939	0.918
SATISFACTION	Satisfaction	0.910	0.851
EXPQUAL	Expected Quality	0.986	0.986
PERVALU	Perceived value	0.939	0.930
PERCQUA	Perceived quality	0.956	0.952

Convergent validity allows us to determine whether a set of variables measures the same construct and not a different one; this criterion is obtained through the extracted average e variance (AVE), according to (Cardella et al., 2021). The AVE value must be

greater than 0.5, which indicates that the construct shares more than half of its variance with the indicators that comprise it.

Table 6.

Model Fit and Quality Indices

Fit Measures / Quality Indices	Value	p-value / Ranges
Average path coefficient (APC)	0.459	<0.001
Average R-squared (ARS)	0.614	<0.001
Average adjusted R-squared (AARS)	0.613	<0.001
Average block VIF (AVIF)	3.323	acceptable if ≤ 5, ideally ≤ 3.3
Average full collinearity VIF (AFVIF)	4.647	
Tenenhaus GoF (GoF)	0.628	small ≥ 0.1, medium ≥ 0.25, large ≥ 0.36
Simpson's paradox ratio (SPR)	1.000	acceptable if >= 0.7, ideally = 1
R-squared contribution ratio (RSCR)	1.000	acceptable if ≥ 0.9, ideally = 1
Statistical suppression ratio (SSR)	1.000	acceptable if ≥ 0.7
Nonlinear Bivariate Causality Direction Ratio (NLBCDR)	1.000	

This criterion applies to latent variables with reflective indicators or to second-order constructs; the dimensions identified within the Loyalty scale share more than 50% of their variance with the corresponding items, and therefore meet the established parameter.

Table 7.

Hypothesis Testing

Hypothesis	Effect	Path Coefficient	p-Value	Supported?
H1: Expected Quality – Perceived Quality	+	0.78	0.000 ***	YES
H2: Expected Quality – Perceived Value	+	0.122	0.003 **	YES
H3: Perceived Quality – Perceived Value	+	0.833	0.000 ***	YES
H4: Perceived Quality – Satisfaction	+	0.257	0.000 ***	YES
H5: Perceived Values - Satisfaction	+	0.417	0.000 ***	YES
H6: Perceived Quality - Loyalty	+	0.213	0.000 ***	YES
H7: Satisfaction - Loyalty	+	0.589	0.000 ***	YES

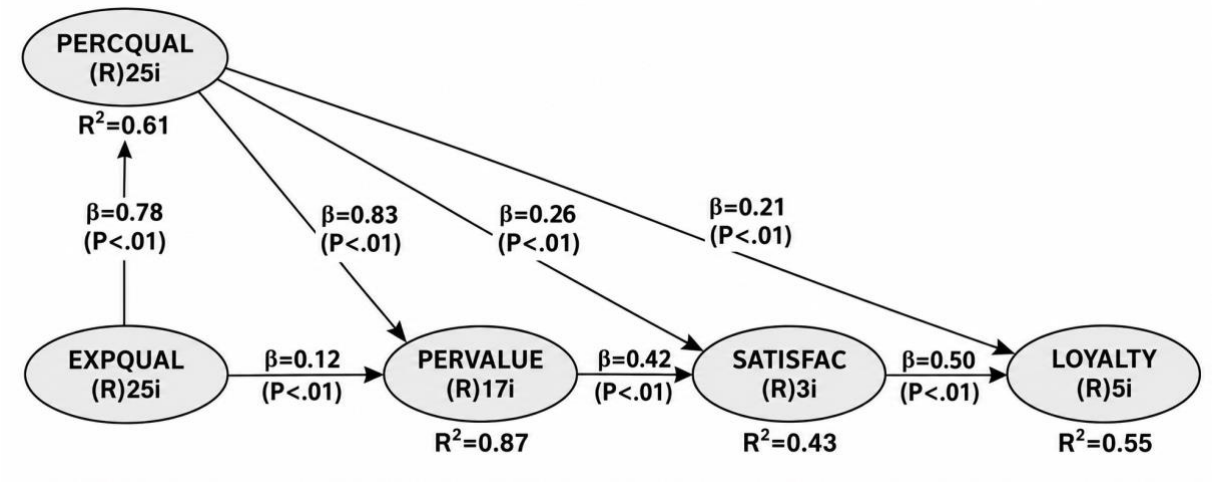
To test the fit of the proposed model and support the hypotheses, the goodness-of-fit measures and quality indices presented in Table 6 were calculated. Based on the results obtained, it was evident that the formulated model achieved adequate levels of fit and quality; consequently, its validity and applicability were confirmed.

The significance of the path coefficients was evaluated for each of the formulated hypotheses, all of which were supported. The hypotheses revealed positive relationships between the variables, as shown in Table 7.

Figure 3 presents the hypotheses and the relationships established among them; (R) represents the number of questions included in each construct. Additionally, the R^2 values and p-values corresponding to each proposed hypothesis are included.

Figure 3.

Theoretical Research Model



Source: Author's own work.

4. Discussion

T The study analyzed citizens' satisfaction with the provision of municipal services, examined the factors that foster their continued loyalty to the local government, as well as the relationship between these factors and expected quality and perceived value. A structural equation modeling (SEM) approach, based on the American Customer Satisfaction Index (ACSI), was applied using a household-level survey with a sample of 567 completed questionnaires.

Citizen loyalty is a fundamental aspect for the continuity of a local government's operations; therefore, the variables that influence this loyalty are relevant for guiding decision-making by the corresponding public administration. The research confirmed each of the formulated hypotheses, which may help the local government strengthen the delivery of public services aimed at the citizens of the city it represents.

The variables that influenced citizens' intention to continue voting for the local government were the perceived quality of municipal public services and perceived value; the latter stemmed from the relationship between expectations and actual experience, which in turn affected the assessment of satisfaction with municipal public services and the willingness to recommend voting for the local government.

Hypothesis 1 was confirmed, showing that the expected quality of municipal services influences perceived quality; this relationship between the two variables is supported in the literature by various authors (Ochoa et al., 2023; Romero et al., 2022).

Hypothesis 2 was also confirmed in the study, as citizens' expected quality of municipal services influenced perceived value; this relationship was consistent with previous studies (Pham et al., 2023). Hypothesis 3 was likewise confirmed and showed a significant relationship between the perceived quality of a municipal service and the value attributed to it by citizens, in line with previous research (Li & Shang, 2020; Santos et al., 2022).

Hypothesis 4 was confirmed and demonstrated that the perceived quality of a service has a direct influence on citizen satisfaction; therefore, it is established that the higher the perceived quality of a public service, the more favorable its effect on citizen satisfaction will be.

Hypothesis 5 confirmed that the value citizens perceive in municipal services influences their level of satisfaction (Alkraiji & Ameen, 2022). While Hypothesis 6 demonstrated that the perceived quality of municipal services is positively related to citizen loyalty, in line with previous studies (Meirinhos et al., 2022; Pham et al., 2023), the final Hypothesis 7 demonstrated the influence of citizen satisfaction on loyalty toward local public administration.

5. Conclusions

The study confirmed a strong relationship between citizen satisfaction with public services in the Guayaquil canton and citizens' willingness to maintain their voting intention, as well as to recommend it to others with the aim of retaining the local public administration. This demonstrates that citizen loyalty is grounded in factors such as road conditions, water quality, trash collection, parks and green spaces, public transportation, and the maintenance of these services.

Conversely, aspects were identified that represent opportunities for improvement, including perceptions of the municipal police, traffic management, difficulties faced by pedestrians when crossing the street, and social assistance programs that do not fully meet citizens' expectations. Consequently, the study offers practical implications for local administrators in Guayaquil, in addition to identifying key factors in the development of civic loyalty that are applicable to cities with similar socioeconomic and cultural characteristics.

The main limitation of the study relates to the sample, as the data were collected through household surveys in three parishes in Guayaquil with a middle-income socioeconomic profile, which could indicate that the information obtained primarily represents this specific segment. This limitation could be overcome by including rural parishes, with the aim of creating a more diverse and heterogeneous sample.

A second limitation stems from the cross-sectional nature of the research; therefore, to broaden its scope, it would be necessary to conduct an additional study that analyzes public perception over time and examines its evolution across different periods.

The contributions of this research to policies related to municipal services require appropriate evaluation processes and reliable results; this approach facilitates the generation of new information so that local and national governments can interpret the factors that influence citizen satisfaction , taking into account the socioeconomic and demographic characteristics of each parish.

Local public services vary according to the diversity and specific conditions of each country; therefore, municipal administrators can assess the results based on the characteristics of their environment and address the factors associated with

dissatisfaction, with the aim of improving the quality of and satisfaction with municipal services.

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