



RESEARCH ARTICLE

Effect of E-GOVQUAL Service Quality on Customer Satisfaction of Public Service Mall Website in Surakarta

Kristina Setyowati^{1*}, Priyanto Susilo Adi², Retno Suryawati³, Herwan Parwiyanto⁴, Septyanto Galan Prakoso⁵

^{1,2,3,4} Departement of Public Administration, Faculty of Social and Political Science, Universitas Sebelas Maret, Indonesia

⁵Departement of International Relations, Faculty of Social and Political Science, Universitas Sebelas Maret, Indonesia

⁵Doctoral Candidate, Institute of Political Science, National Sun Yat-sen University, Taiwan

ARTICLE INFO	ABSTRACT
<p>Received: Apr 22, 2024</p> <p>Accepted: June 11, 2024</p> <p>Keywords</p> <p>Service quality E-GovQual Customer satisfaction Public service mall Surakarta Indonesia</p>	<p>The use of digital technology has shaped a new form of government bureaucracy known as electronic government. The purpose of this study is to ascertain how consumer satisfaction with public service mall websites in Surakarta City is impacted by the E-GovQual service quality. This study considers e-government quality, comprising six independent variables which are ease of use (X1), trust (X2), functionality of interaction environment (X3), reliability (X4), content and appearance of information (X5), and citizen support (X6), and its effect on customer satisfaction (Y). To examine and assess cause-and-effect correlations, this quantitative study uses the Structural Equation Modeling-Partial Least Square (SEM-PLS) data analysis method, which combines factor analysis with path analysis. The population consisted of 96 respondents. The samples were estimated using the Lemeshow formula and selected using the Accidental Sampling Technique. Based on research findings, it was found that the t-table value and p-value for each independent variable are both t-statistic > 1.97 and p-value < 0.05 range. The study concludes that the variables of ease of use, trust, interaction environment functionality, content and appearance, reliability, and citizen support all significantly positively impact customer satisfaction. The interaction environment functionality variable has the largest positive influence, accounting for 28% of the total. This result proves that these variables affect customer satisfaction positively. For practical use, this study shows that E-GovQual service quality can be measured via the website of a public service provider. Specifically, this study shows that the government of Surakarta City can utilize advancements in information technology for electronic-based governance.</p>
<p>*Corresponding Author:</p> <p>kristina@staff.uns.ac.id</p>	

INTRODUCTION

The phrase "e-government" describes how the government uses information technology, such as the Internet, wide area networks, and mobile computing, to alter how it interacts with the public, private sector, and other government agencies (Ari & Hanum, 2021). Information technology is thought to be crucial for improving the efficacy and efficiency of government operations (Prasetyo et.al., 2023). The governments are required to utilize it in electronic-based government administrations in an attempt to improve public service quality. The objective of e-government is to improve public service quality by utilizing the technology in data and information processing, management systems, and electronic working processes to be accessible to the public (Setneg, 2003). The focus of innovation in

the public sector is on improving the efficiency, effectiveness, quality, and affordability of government services (Eldo et.al., 2018). With E-Government innovation, it is hoped that public services will be better, there will be an increase in the internal effectiveness of government organizations and the ease with which the public can access information within the government environment (Hikmawati et.al., 2022). The e-Government development policy and strategy aims to enable the government to utilize advancements in information technology to eliminate bureaucratic obstacles and simplify public service processes, according to Rani (Nafisah et.al., 2023). One way that government institutions apply to citizens is through the use of e-government to supply application-based public services. Governmental organizations have implemented several innovations to raise the standard of public services that are consistent with Indonesia's attitude toward bureaucratic reform (Wahid & Rohayati, 2022).

The attempt made by the governments to improve service quality is public service innovation through Public Service Mall (Indonesian: *Mal Pelayanan Publik* or MPP). Its concept according to Regulation of the Ministry of State Apparatus Utilization and Bureaucratic Reform, Number 23 of 2017 concerning the Organization of Public Service Mall, aims to provide ease, speed, affordability, safety, and comfort to get services and to improve global competitiveness based on the following principles: cohesiveness, expediency, coordination, accountability, accessibility, and comfort. Public Service Mall (MPP) is a public service transformation that integrates various services in one place to increase community satisfaction. Some examples of services that can be utilized by the public at Public Service Mall (MPP) Surakarta include business permits, Samsat services, driving licenses (SIM), passports, BPJS Health, Food and Drug Supervisory Agency (BPOM), Pratama Tax Service Office (KPP), PLN, to the Indonesian Stock Exchange (BEI) (setda.surakarta.go.id).

Service quality can be defined as an attempt to fulfill consumers' accuracy needs and wishes and delivery as consumers expect (Tjiptono, 2007). Ensuring good services is a strategic policy issue as it significantly increases public trust in the government (Holipah, 2023). Service quality can be improved and measured based on not only the company's perspectives but also customers' perspectives (perceived quality). Customer satisfaction is a condition in which customers feel satisfied with both product quality and the entire interaction they experience. A company should create customer satisfaction to create loyal customers (Kim et al., 2019).

Why is service quality important? This is because service quality can affect customer satisfaction. Service consumers hope for comfortable, fair, and equitable service (Puspitarini, 2021). In the era of regional autonomy, the government needs to provide good public services. Barnes et.al. (2003) created the Webqual method to measure the quality of electronic services, particularly e-government implementation. Several methods can be used to evaluate the quality of services on a website, including the E-GovQual, ServQual, and Webqual methods (Prita, 2016). One method of measuring website quality is Webqual, which is used based on perception. The WebQual (Web Quality) method evaluates the elements that have some effect on the quality of a website, while the ServQual method evaluates the service quality of a website in the areas of marketing and service. The ServQual method refers to five measuring dimensions, including excellence, assurance, responsiveness, empathy, and direct evidence (Parasuraman et al., 1988). E-Government Quality (E-GovQual) is a model for assessing the quality of e-government services that focuses on government websites or portals (Trientje, n.d). Therefore, this article tries to study "factors affecting customer satisfaction in Public Service malls using the E-GovQual approach" (Barnes et.al., 2003).

The E-GovQual (Electronic Government Service Quality) method is a method for evaluating e-government services. This method has dimension attributes to measure the performance of website services (perceived by end-users) and to improve service quality given by governmental institutions so that people feel satisfied with government services (Papadomichelaki et.al., 2012).

There are six dimensions of E-GovQual according to Papadomichelaki and Gregoris Mentzas (2012):

1. Ease of use (easiness of use and comfort of use)
2. Trust (firm belief).
3. Functionality of the interaction environment (Functionality of Environmental interaction).
4. Reliability (the quality of being trustworthy).
5. Data presentation of information (data essence and look).
6. Citizen support (People support)

Consumer satisfaction is defined by how close the consumer expectations and the actual performance of products or services offered (Santouridis, 2009). Customer satisfaction is a condition in which customers feel satisfied with both product quality and entire interaction experienced by customers (Kim et al., 2019). This research uses Doll's concept of satisfaction (2004). Doll reveals the importance of measuring customer satisfaction using the End User Computing Satisfactions (EUCS) instrument and of assessing the equality of measurement on all sub-population groups. EUCS has five instruments: content, format, accuracy, timeliness, and ease of use. Some arising problems related to the customers' satisfaction with e-government services in Public Service Mall are as follows: the password is poor; the page cannot be downloaded quickly; and the information and data provided are less relevant (William et al., 2004).

MATERIALS AND METHODS

This study used a quantitative approach with an explanatory or causal design, aimed to explain how a variable affects or is responsible for the changes in other variables (Cooper et al., 2011). The method used was a survey; the survey method is a method of collecting information based on the respondent questionnaire (N.K. Malhotra, 2007). Thus, this research belongs to a survey method, in which the author used a questionnaire instrument to obtain data distributed to the subjects of research in a relatively short period. The research took place in the Public Service Mall of Surakarta City.

The population was all customers using services in the Public Service Mall in April-June, 2023. The samples consisted of 96 respondents. Because the population was unknown, the samples were estimated by using Lemeshow's formula. Then, the samples were selected by using an accidental sampling technique. The Lemeshow formula test is a statistical method used to assess how well a logistic regression model fits the observed data. In essence, it evaluates whether the predicted probabilities from the model adequately match the actual outcomes.

The formula for the Lemeshow test statistic involves grouping the data into deciles or other groups based on the predicted probabilities from the logistic regression model. Then, it compares the observed frequencies of outcomes within each group with the expected frequencies under the model. The test statistic is calculated using a chi-square test, which assesses the discrepancy between observed and expected frequencies. When the chi-square test yields a significant p-value, it means that the model does not adequately match the data, suggesting that there might be some systematic deviation between the predicted and observed outcomes. Conversely, a non-significant p-value suggests that the model fits the data adequately.

In summary, the Lemeshow formula test provides a statistical measure to evaluate the fit of logistic regression models, particularly in the context of binary outcomes. It's a valuable tool for assessing the appropriateness of the model and identifying areas where the model might need improvement.

This research particularly used Papadomichelaki and Gregoris Mentzas's e-GovQual theory (Papadomichelaki, 2012) and Doll's concept of satisfaction (Doll et al., 2004) becoming the definition of the concept and the operational definition for the following research variables:

1. *Ease of Use (X1)*: This variable refers to the level of convenience for the people to use the interaction service. Its operational definitions are as follows:
 - This e-government website's format is simple to understand and straightforward.
 - The search engine on the e-government website is efficient
 - The details displayed on the e-government website are sufficiently detailed
 - The information displayed on this e-government website is new
2. *Trust (X2)*: this variable refers to the user's level of trust in using the services (including confidence, freedom of risk, and public skepticism) of the e-Government during the online service process. Its operational definitions are as follows:
 - Security of password on the e-government site
 - Data shown on this site is used for the reason posed only
3. *Functionality of the Interaction Environment (X3)*: This variable refers to the integral role of e-government including the service's ability to interact and communicate, collect information, and become a medium to send information online. Its operational definitions are as follows:
 - The presence of online help, a complaint service form
 - The use of features to facilitate interaction in the future
 - Adequate response format
4. *Reliability (X4)*: This variable talks about the function and ability of service, including *accessibility*, *availability*, and *accuracy* provided and service with very promising accuracy. Its operational definition includes:
 - This form on the e-governance website can be downloaded shortly
 - The default settings of your browser are compatible with this e-government
 - This e-government site offers timely service
 - The E-government's page has a small file size
 - This e-government website is accessible at all times
5. *Content and Appearance of Information (X5)*: this variable pertains to the presentation of information, and graphic design on the web page. Its operational definition includes:
 - Data on the e-Government website becoming complete
 - Accuracy of the information on the e-Government website
 - Relevance of the e-Government website's data and information
 - Timeliness of information on the e-Government website
 - The e-Government website's data and information may be easily understood and interpreted
 - Relevance of data/information on the e-Government website
 - The forms provided are concise and solvable
6. *Citizen Support (X6)*: This variable is viewed from how its ability can help consumers solve their problems. Its operation definition includes:
 - Employees show their sincere interest in solving the users' problem
 - Employees respond quickly to the users' questions.
 - Employees know to answer the users' questions
 - Employees can express trust and belief

7. Then, the customer satisfaction (Y) variable is defined as an individual (a customer)'s satisfied or disappointed feeling resulting from the comparison of product or output performance and expectation. Its operational definition includes:
- Equality or suitability of content (information) to the people's need
 - Equality or suitability of system accuracy level
 - Equality or suitability of useful and obvious format
 - Equality or suitability of time
 - Equality or suitability of the usable system.

Following the successful data collection, analysis was conducted by using the PLS-SEM method. In this research, the data analysis used a statistical method with structural equation modeling to test and evaluate the causal relationship by combining factor and path analyses (Jagiyanto, 2011). Variant-based SEM is the one using variants or variant blocks in interactive processes between indicators or parameters evaluated in one latent variable without correlating them to the indicators of other latent variables in one research model (Jagiyanto, 2011). Variable-based SEM starting to be used widely is PLS. The procedure of SEM PLSE analysis is divided into some stages below:

Measurement model test (the outer model)

The measurement model (the model) tested the validity and reliability of the device design. In the measurement model equipped with a reflective indicator, convergent and discriminant validities of the indicator and reliability of combined block indicators are evaluated (I. Ghozali, 2014). The loading factor and AVE (Average Variance Extracted) figures provide information about the parameters of the convergent validity test. The square root of the Average Variance Extracted from the construct, which should be larger than the correlation between the variables, is used to compare parameters in testing the discriminant validity. Alternatively, cross-loading values were also checked. In addition to assessing convergent and discriminant validities, a reliability test was also conducted in which Cronbach's alpha and reliability values are composite.

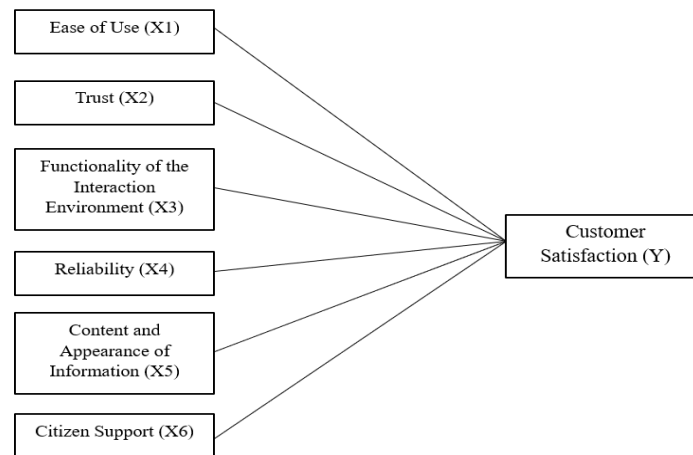
Structural model test (the inner model)

The PLS structural model is estimated using R^2 , way coefficients, or t values for each way to test the importance of developments within the auxiliary demonstration (Jagiyanto, 2011). The R^2 value is used to see the variety of independent/independent variables between dependent/dependent variables. The significant measurement of hypothesis support can be used to compare t -table and t -statistic values (Jagiyanto, 2011). If the value of the t -statistic is bigger than the esteem of the t -table, the hypothesis is verified if, at a confidence level of 95 % (alpha 5 %), the value of the t -table for the r -two-sided hypothesis is ≥ 1.96 and that for the one-sided hypothesis is 1.6 (Jagiyanto, 2011). The criteria of PLS evaluation necessary to conduct analysis are presented in Table 1. Model testing occurs in the form of external and internal model analyses. The external model testing consisted of construct validity, discriminant validity, and construct reliability tests. Internal model testing can be seen from the R^2 value and way coefficient. Considering the result of the analysis that conclusion can be drawn and a research proposal can be written.

Table 1: Criteria of PLS assessment

Model Test	Criteria	Explanation
The outer model (Indicator Test)	Loading factor	The loading factor value must be higher than 0.70
	Discriminant Validity	The Square Root Average Variance Extracted (AVE) value ought to be higher than the relation coefficient between latent variables
	Average Variance Extracted (AVE)	Average Variance Extracted (AVE) value should be higher than 0.50
	Composite reliability	Composite reliability measures internal consistency and its value should be higher than 0.6
The inner model (Hypothesis test)	R ² for endogenous latent variable	R ² values of 0.67; 0.33; and 0.19 for endogenous latent variables in the structural model indicate that the model is "good", "moderate", and "weak"
	Estimated path coefficient	The estimated value for path correlation in the structural model should be significant and can be obtained using the bootstrapping procedure

The framework of research on the factors affecting customer satisfaction in Public Service Mall in Surakarta with the e-GovQual dimension as X variable and customer satisfaction as Y variable is illustrated in Figure 1 below:

**Figure 1: Theoretical framework**

Considering the theory and the problem aforementioned, six hypotheses are found in this research:

H1 = The factor of ease of use affects the satisfaction of MPP website users

H2 = The factor of Trust affects the satisfaction of MPP website users

H3 = The factor of the usefulness of the interaction environment affects the satisfaction of MPP website users

H4 = The factor of reliability affects the satisfaction of MPP website users

H5 = The factor of Content and appearance of information affects the satisfaction of MPP website users

H6 = The factor of citizen support affects the satisfaction of MPP website users.

LITERATURE REVIEW

1. The following are some previous studies related to the factors affecting the satisfaction of service users:
2. Irawan (2012) in a study entitled “Evaluasi Kualitas Website Pemerintah Daerah Dengan Menggunakan Webqual (An Evaluation on the Quality of Regional Government using Webqual)” which formed the basis for the development of SERVQUAL, showed that WebQual is a method for measuring website quality. Based on user perception, the WebQual measurement technique was put into practice. The aspects that affect the quality of a website were examined using the WebQual (web quality) technique (Candra, 2012). This research uses user perceptions in the form of usability, information quality, and quality service interaction to evaluate the quality of the website under study. The research results show that WebQual dimensions (usability, information quality, and interaction quality) contribute positively to website quality.
3. Dwi Prasetyanto, et al. (2021) in a study entitled “Kajian Faktor-Faktor yang Mempengaruhi Kepuasan Konsumen Bus Trans Metro Bandung (A Study on the Factors Affecting the Satisfaction of Bus Trans Metro Bandung Customers)” used the SEM-PLS method, two testing models were used: inner model and outer model. The outer model analysis was conducted to test composite reliability, convergent validity, and discriminant validity. The inner model analysis was conducted to test the path coefficient and R-squared (Prasetya et al.). Based on measuring consumer satisfaction using the variables’ reliability, tangibles, assurance, responsiveness, and empathy as influencing factors, the results obtained show that the reliability dimension has the most significant influence on consumer satisfaction.
4. Munahaji Lukaraja, et al. (2020) in a study entitled “Structural Equation Modeling (SEM) untuk Menganalisis Faktor-Faktor yang Mempengaruhi Kualitas Pelayanan Jasa PT. PLN (Persero) terhadap Kepuasan Pelanggan (Structural Equation Modeling (SEM) to analyze the Factors Affecting Service quality in PT. PLN (Persero) on Customer Satisfaction)” used four variables: Service Quality (X1), cost (X2), product (X3), and satisfaction (Y). The method of analyzing data used PLS-SEM (Munahaji et al., 2021). Research concluded that the higher the level of satisfaction, the higher the quality of service.
5. Septa and Fadlil (2019) in a study entitled “Analisis Kualitas Layanan E-government dengan Pendekatan E-GovQual Modifikasi (An Analysis on the Quality of E-government service quality using Modified E-GovQual Approach)” used the modified E-GovQual method, which used six independent variables and one dependent variable to test the responses to the questionnaires distributed to 500 respondents with validity test, reliability test, multiple linear regression analysis, t-test, and F-test. The result of the study shows that the SIMSARPRAS website as an application for organizing public services has a high service quality, with a correlation coefficient of 78.5% and a significant relationship between the service quality of the e-government website and customer satisfaction (Septa et al., 2009).
6. William J. Doll (2004) in research entitled “The Meaning and Measurement of User Satisfaction: A Multigroup Invariance Analysis of the End-User Computing Satisfaction” studied the importance of measuring customer satisfaction using End User Computing Satisfaction (EUCS) instrument, and of assessing the equality of measurements in all subpopulation groups. The EUCS instrument was tested to measure invariance across four dimensions; respondent position, application type, hardware platform, and development mode. EUCS has five instruments: content, format, accuracy, timeliness, and ease of use. The method of analyzing data used CFA (Confirmatory Factor Analysis) (Doll et al., 2004).
7. Beny Prasetyo, et al. (2022) in research entitled “Evaluasi Kualitas Layanan Electronic

Pendapatan Asli Daerah (E-PAD) Di Kabupaten Banyuwangi Menggunakan Metode E-GovQual dan IPA” used E-GovQual method and Importance Performance Analysis (IPA) method. In this research, two IPA analyses were used, namely suitability analysis to measure the level of conformity of the services provided with the interests of use and quadrant analysis to measure attributes that require improvement (Beny et al., n.d). The results of the research show that the E-PAD service already has good performance according to user perception.

8. Wahono in a study entitled “Penerapan E-Govqual dalam Sistem Evaluasi Penilaian Kualitas Layanan E-Government Pemerintah Kabupaten Malang” used five dimensions of E-GovQual (ease of use, trust, functionality of the interaction environment, reliability, content and appearance of information, citizen support) and 28 attributes of E-Govqual to analyze the quality of service on government websites, namely www.ntbprov.go.id (Wahono, 2017).
9. The purpose of this study is to see what affects customer satisfaction at the Surakarta Public Service Mall the most and what affects their satisfaction the most. The focus of this study is the E-Govqual satisfaction dimension, which includes factors such as ease of use, trust, functionality of interaction in the environment, reliability, information content and display, and citizen support.

RESULTS AND DISCUSSION

SEM was used in the data analysis procedure. A multivariate analysis technique called structural equation modeling (SEM) allows you to represent simultaneous linear relationships between latent variables (also called latent variables) and observable variables (also called indicators). The latent variable is not observed or unmeasured, but it needs to be measured by some indicators. Sholiha & Salamah (2016) explain this method. In SEM there are two types of latent variables: endogenous (η) and exogenous (ξ) (Sholihah & Salaman, 2016). Furthermore, the *Partial Least Square* (PLS) method was also used. The PLS method is a strong method of analysis due to the less dependence on measurement scale (e.g. measurement needing interval scale or ratio), sample size, and residual distribution. Indicators in PLS can be formatted in reflective or formative type (Sholihah & Salaman, 2016).

Validity and reliability (The Outer Loading Evaluation)

Validity:

The measurement model is evaluated based on convergent reliability, discriminant validity, and validity. The validity of convergence intended to measure a construct must have a high correlation. To evaluate the convergent validity, it is assumed that the indicator with a value of loading factor higher than 0.70 will be maintained and the indicator with a lower value will be removed (Purwanto, 2021). The result of outer loading is shown in the table below:

Table 2: Result of outer loading

	Citizen Support	Content and Appearance	Ease of Use	Functionality of The Interaction Environment	Customer Satisfaction	Reliability	Trust
CA1		0.733					
CA2		0.732					
CA3		0.732					
CA4		0.722					
CA5		0.733					

CA6		0.712					
CA7		0.717					
CS1	0.763						
CS2	0.743						
CS3	0.829						
E1			0.710				
E2			0.720				
E3			0.741				
E4			0.725				
F1				0.761			
F2				0.828			
F3				0.763			
K1					0.774		
K2					0.766		
K3					0.767		
K4					0.757		
K5					0.754		
R1						0.777	
R2						0.781	
R3						0.794	
R4						0.796	
R5						0.780	
T1							0.875
T2							0.845

Source: Data processed from the output of SmartPLS 3.0

Considering the result, no indicator will be removed because all indicators have values higher than 0.7. Thus, it can be said that the indicator has convergent validity, meaning that each of the questions is a valid measuring instrument reflecting respective variables (Purwanto, 2021).

In this research, discriminant validity was assessed using some methods including, among others, *cross-loading value*, and *average variance extract (AVE)*. The cross-loading value measures the extent to which an item correlates with its construction rather than with other constructions. Fornell-Larcker's criteria assess the variant level divided into some constructs. The result of cross-loading is shown in the table below:

Table 3: Result of Cross Loadings

	Citizen Support	Content and Appearance	Ease of Use	Functionality of The Interaction Environment	Customer Satisfaction	Reliability	Trust
CA1	0.490	0.733	0.544	0.554	0.642	0.651	0.556
CA2	0.518	0.732	0.580	0.557	0.651	0.632	0.551
CA3	0.397	0.732	0.496	0.561	0.575	0.575	0.507
CA4	0.459	0.722	0.533	0.584	0.581	0.567	0.544
CA5	0.444	0.733	0.605	0.516	0.570	0.614	0.428
CA6	0.488	0.712	0.569	0.597	0.619	0.641	0.522
CA7	0.457	0.717	0.512	0.572	0.605	0.590	0.459
CS1	0.763	0.580	0.585	0.654	0.695	0.687	0.574
CS2	0.743	0.450	0.305	0.432	0.480	0.474	0.313

CS3	0.829	0.433	0.368	0.414	0.503	0.525	0.408
E1	0.431	0.645	0.710	0.559	0.622	0.603	0.494
E2	0.421	0.460	0.720	0.608	0.622	0.556	0.441
E3	0.381	0.527	0.741	0.608	0.587	0.606	0.534
E4	0.406	0.556	0.725	0.542	0.573	0.584	0.559
F1	0.558	0.584	0.640	0.761	0.707	0.673	0.601
F2	0.461	0.640	0.664	0.828	0.716	0.695	0.679
F3	0.553	0.601	0.580	0.763	0.709	0.698	0.578
K1	0.505	0.658	0.694	0.734	0.774	0.681	0.724
K2	0.540	0.660	0.663	0.658	0.766	0.731	0.602
K3	0.492	0.653	0.631	0.758	0.767	0.674	0.624
K4	0.560	0.577	0.580	0.653	0.757	0.655	0.626
K5	0.736	0.644	0.601	0.655	0.754	0.739	0.587
R1	0.517	0.682	0.664	0.736	0.734	0.777	0.671
R2	0.577	0.640	0.621	0.644	0.721	0.781	0.650
R3	0.640	0.670	0.641	0.732	0.729	0.794	0.549
R4	0.572	0.665	0.657	0.700	0.718	0.796	0.580
R5	0.617	0.648	0.602	0.634	0.676	0.780	0.542
T1	0.503	0.597	0.604	0.719	0.747	0.664	0.875
T2	0.495	0.616	0.600	0.638	0.677	0.648	0.845

Source: Data processed from the output of SmartPLS 3.0

Table 2 presents data of cross-loading value indicating that each of the indicators existing in one variable had a higher value in its correlation to the variable itself than to other variables. Therefore, discriminant validity could be met. Next, the AVE value is calculated, which can be found in the following table:

Table 4: Average Variance Extracted (AVE)

Variable	Average Variance Extracted (AVE)
Citizen Support	0.607
Content and Appearance	0.527
Ease of Use	0.524
Functionality of The Interaction Environment	0.615
Customer satisfaction	0.583
Reliability	0.617
Trust	0.740

Source: Data processed from the output of SmartPLS 3.0

Table 3 shows the data of average *variance extracted* (AVE) value. In this research, the value of AVE is higher than 0.5 for each of the constructs, meaning that the indicator in each construct is closely interrelated, indicating a high level of convergent validity.

Reliability

When an instrument measures multiple constructs, the reliability test used indicates the consistency, accuracy, and precision of the instrument. Reliability can be measured in two ways, through

Cronbach's alpha reliability and composite reliability. Composite reliability indicates that the latent variable can accurately assess the internal consistency of indicators in the latent variable (Hair et al., 2019). To assess construct reliability, a composite reliability value is used, which should be greater than 0.70. However, since the value of Cronbach's alpha results in an underestimation, it is recommended to use the composite value (Faradilla et al., 2022). The Composite Reliability value can be found in the following table below:

Table 5: Composite reliability

	Composite Reliability
Citizen Support	0.822
Content and Appearance	0.886
Ease of Use	0.815
Functionality of The Interaction Environment	0.827
Customer satisfaction	0.875
Reliability	0.890
Trust	0.851

Source: Data processed from the output of SmartPLS 3.0

Table 4 shows that the composite reliability values of respective variables were met or had a score of >0.7. In other words, all variables of research have been reliable.

The inner loading evaluation

Coefficient of determination

The coefficient of Determination is used to find out the endogenous variables' ability to explain the diversity of exogenous variables using r-square. This procedure is tested using SmartPLS. The R-Square in this research is presented in Table 5:

Table 5: Coefficient of Determination Value

	R Square	R Square Adjusted
Customer Satisfaction	0.916	0.910

Source: Data processed from the output of SmartPLS 3.0

Table 5 shows the measurement results for the customer satisfaction variable, with an R-square of 0.916, indicating that the following variables can affect customer satisfaction by 91.6%: usability variety, trust, environment interaction functionality, reliability, information content and display, and citizen support. Other variables not discussed in this study exert influence. In addition, the r-square score of 0.916 could be interpreted as the model used in this research belonging to the strong category, because the r-square score is higher than 0.5 (Purwanto, 2021).

Path Coefficient

Furthermore, the *path coefficient* can be defined as the inter-variable relation occurring in a structural model (Hair et al., 2019). If this coefficient is positive, there will be a positive relationship between dependent and independent variable constructs. On the contrary, if the path coefficient is negative, a negative relationship will arise in the inter-variable constructs.

To investigate the result of the test on the influence test using the *software SmartPLS*, the t-statistic (bootstrapping) test is carried out to test the hypothesis at the significance level of 5% (Purwanto,

2021). is lower than the t-table (<1.97), the effect is considered not significant. However, if t-statistic > 1.97 , it is considered as significant (Hair et al., 2019). In addition, it can also be seen from the p-value. If the p-value < 0.05 , the variable is considered to have an effect; and if the p-value > 0.05 , it does not have an effect. From the result of bootstrapping, some effects can be identified, as presented in Table 6 below:

Table 6: Bootstrapping test value

Hypotheses	Effect	Path Coefficient	T Statistics	P Values	Note
H1	Ease of Use (X1)-> Customer Satisfaction (Y)	0.139	2.441	0.015	Verified
H2	Trust (X2) -> Customer Satisfaction (Y)	0.190	3.828	0.000	Verified
H3	Functionality of The Interaction Environment (X3) -> Customer Satisfaction (Y)	0.281	3.176	0.002	Verified
H4	Content and Appearance of Information (X4) -> Customer Satisfaction (Y)	0.121	2.024	0.043	Verified
H5	Reliability (X5) -> Customer Satisfaction (Y)	0.205	2.199	0.028	Verified
H6	Citizen Support (X6) -> Customer Satisfaction (Y)	0.135	2.797	0.005	Verified

Source: Data processed from the output of SmartPLS 3.0

The output of bootstrapping shows that all of the proposed hypotheses (prediction) were verified with the t-statistic value of >1.97 , meaning that there was a positive effect of ease of use, citizen support, trust, reliability, functionality of the interaction environment, appearance of information, and content on the customer satisfaction of Public Service Mall website.

CONCLUSION

In summary, the findings of this study indicate that the variables included in E-GovQual influence customer satisfaction in Surakarta Public Service Mall. The variables included in E-GovQual (ease of use, citizen support, trustworthiness, reliability, functionality of the interaction environment, appearance of information, and content) are likely to influence customer satisfaction with an R-squared value of 9.16, meaning that the variables included in E-GovQual can influence customer satisfaction by 91.6%, while the rest is influenced by other variables that were excluded from this research.

The *Ease of Use* variable affected the customer satisfaction of the Public Service Mall Website of Surakarta positively and significantly with a T-statistic value of 2.797 and a p-value of 0.015. The *Trust* variable affected the customer satisfaction of the Public Service Mall Website of Surakarta positively and significantly with a t-statistic value of 3.828 and a p-value of 0.000. The *Reliability* variable affected the customer satisfaction of the Public Service Mall Website of Surakarta positively and significantly with a T-statistic value of 2.199 and a p-value of 0.028. The *Content and Appearance of Information* variable affected the customer satisfaction of the Public Service Mall Website of Surakarta positively and significantly with a T-statistic value of 2.024 and a p-value of 0.043. The citizen support variable affected the customer satisfaction of the Public Service Mall Website of Surakarta positively and significantly with a T-statistic value of 2.797 and a value of 0.005. The *Functionality of the Interaction Environment* variable affected the customer satisfaction of the Public Service Mall Website of Surakarta positively and significantly with a t-statistic value of 3.176 and a t-value of 0.002.

The theoretical implications derived from the research emphasize the significance of e-government quality dimensions in shaping customer satisfaction outcomes on Public Service Mall Surakarta websites. By recognizing and addressing the key factors that influence user perceptions and satisfaction, public service providers can optimize their online platforms to better meet the needs and expectations of citizens, ultimately enhancing the effectiveness and usability of e-government services. Meanwhile, the practical implications derived from the research emphasize the value of focusing on e-government quality dimensions to enhance customer satisfaction and user experiences on the Public Service Mall Surakarta website. By implementing strategies to improve ease of use, citizen support, trustworthiness, reliability, functionality of the interaction environment, appearance of information, and content, public service providers can create more effective and user-centric digital platforms that meet the evolving needs and expectations of citizens. Last but not least, the contextual findings from the research shed light on the unique factors influencing customer satisfaction on public service mall websites in Surakarta. By identifying the key variables that significantly impact user perceptions and experiences in the specific context, the study provides valuable insights for public service providers to tailor their digital platforms to meet the needs and expectations of citizens in Surakarta and similar urban settings.

The limitations of the research include the use of an accidental sampling technique to select due to the unknown population size, which may affect the generalizability of the findings. For future research, it is recommended to explore additional factors that may influence customer satisfaction on public service websites beyond the dimensions studied in this research. Additionally, conducting comparative studies across different cities or regions could provide insights into the variations in user perceptions and satisfaction levels based on the local context and service delivery models.

AUTHOR CONTRIBUTIONS

Kristina Setyowati as the first and corresponding author conceived and designed the study, analyzed the data, conducted statistical analyses, and wrote the main parts of the manuscript. Priyanto Susiloadi and Retno Suryawati contributed to the study design and also collected and interpreted the data. Herwan Parwiyanto and Septyanto Galan Prakoso contributed to manuscript preparation, critically revised the manuscript, and grammar checking. All authors reviewed and approved the final version of the manuscript.

ACKNOWLEDGMENTS

The authors would like to express their gratitude to The Government of the City of Surakarta, Central Java Province, Indonesia, for their invaluable assistance and support throughout this research project.

REFERENCES

- Ari, D. P. S., & Hanum, L. (2021). Pengaruh Kualitas Pelayanan Website Djp Terhadap Kepuasan Pengguna Dengan Modifikasi E Govqual. *Profit: Jurnal Administrasi Bisnis*, 15(1), 104-111.
- Barnes, S. J., & Vidgen, R. (2003). Measuring web site quality improvements: a case study of the forum on strategic management knowledge exchange. *Industrial management & Data systems*, 103(5), 297-309. <https://doi.org/10.1108/02635570310477352>
- Cooper, D. R., & Schindler, P. (2014). *Business research methods*. McGraw-hill.
- Doll, W. J., Deng, X., RAGHUNATHAN, T. S., Torkzadeh, G., & Xia, W. (2004). The meaning and measurement of user satisfaction: A multigroup invariance analysis of the end-user computing satisfaction instrument. *Journal of Management Information Systems*, 21(1), 227-262. <https://doi.org/10.1080/07421222.2004.11045789>

- Eldo, D. H. A. P., & Mutiarin, D. (2018). Analisis Best Practice Inovasi Pelayanan Publik (Studi pada Inovasi Pelayanan “Kumis MbahTejo” di Kecamatan Tegalrejo Kota Yogyakarta). *Jurnal Manajemen Pelayanan Publik*, 1(2), 156-167. <https://doi.org/10.24198/jmpp.v1i2.16753>
- Fachrizar, M. R., Wibawa, J. C., Fauzan, R., & Radliya, N. R. (2023). Aplikasi Pendukung Pelayanan Publik Berbasis Mobile Dalam Mendukung Penerapan E-Government Pada Mal Pelayanan Publik Kota Cimahi. *Majalah Ilmiah UNIKOM*, 21(1), 21-28. <https://doi.org/10.34010/miu.v21i1.10686>
- Fachrizar, Muhammad Rajab, Julian Chandra Wibawa, Rauf Fauzan, and Nizar Rabbi Radliya, APLIKASI PENDUKUNG PELAYANAN PUBLIK BERBASIS MOBILE DALAM MENDUKUNG PENERAPAN E-GOVERNMENT PADA MAL PELAYANAN PUBLIK KOTA CIMAHI. <https://doi.org/10.34010/miu.v21i1.10686>
- Faradilla, M. A., & Andarini, S. (2022). Pengaruh Brand Ambassador Terhadap Minat Beli Produk Maybelline New York Melalui Sikap pada Iklan Sebagai Variabel Mediasi. *Jurnal Administrasi Bisnis (JAB)*, 12(1), 97-104. <https://doi.org/10.35797/jab.v12.i1.97-104>
- Ghozali, I., 2014. Structural Equation Modeling Metode Alternatif Dengan Partial Least Square: Itas Diponegoro, Universitas Diponegoro, Semarang.
- Ghozali, I., and H Latan, 2015. Partial Least Squares: Konsep, Teknik Dan Aplikasi Menggunakan Program SmartPLS 3.0.:Semarang: Badan Penerbit Universitas Diponegoro.
- Hair, J. F., Risher, J. J., Sarstedt, M., & Ringle, C. M. (2019). When to use and how to report the results of PLS-SEM. *European Business Review*, 31(1), 2-24. <https://doi.org/10.1108/EBR-11-2018-0203>
- Haryani, Prita, Simposium Nasional RAPI XV-2016 FT UMS.
- Hikmawati, Nina Kurnia, 2022. Analisis Kualitas Layanan My Pertamina Menggunakan Pendekatan E-GovQual Pada Beberapa Kota Percobaan: *Jurnal Manajemen Informatika (JAMIKA)*, 12.2: 100-111. <https://doi.org/10.34010/jamika.v12i2.7977>
- Holipah, 2023. Penyelenggaraan Mal Pelayanan Publik Untuk Masyarakat Di Kota. *Jurnal Ilmiah Multidisiplin, Madani*. <https://doi.org/10.5281/zenodo.8116051>
- Irawan, Candra, 2012. Evaluasi Kualitas Website Pemerintah Daerah Dengan Menggunakan Webqual (Studi Kasus Pada Kabupaten Ogan Ilir): *Jurnal Sistem Informasi (JSI)*, 4.2: 488-502. <https://doi.org/10.18495/jsi.v4i2.1272>
- Jogiyanto, 2011. Konsep Dan Aplikasi Structural Equation Modeling (Sem) Berbasis Varian Dalam Penelitian Bisnis: Unit Penerbit dan Percetakan STIM YKPN Yogyakarta, Yogyakarta.
- Kim, W. H., Cho, J. L., & Kim, K. S. (2019). The relationships of wine promotion, customer satisfaction, and behavioral intention: The moderating roles of customers' gender and age. *Journal of Hospitality and Tourism Management*, 39, 212-218. <https://doi.org/10.1016/j.jhtm.2019.03.001>
- Lukaraja, Munahaji, Elvinus P. Persulesy, Yopi Andry Lesnussa, and Muhammad Yahya Matdoan, 2021. STRUCTURAL EQUATION MODELING (SEM) UNTUK MENGANALISIS FAKTOR-FAKTOR YANG MEMPENGARUHI KUALITAS PELAYANAN JASA PT. PLN (Persero) TERHADAP KEPUASAN PELANGGAN DI DESA BUANO UTARA: *Journal of Statistics and Its Applications*, 2.2: 93-102. <https://doi.org/10.30598/variancevol2iss2page93-102>
- Malhotra, N.K, 2007. Marketing Research: An Applied Orientation: Pearson Education, Inc, New Jersey.
- Papadomichelaki, X., & Mentzas, G. (2012). e-GovQual: A multiple-item scale for assessing e-government service quality. *Government Information Quarterly*, 29(1), 98-109. <https://doi.org/10.1016/j.giq.2011.08.011>
- Parasuraman, A., Zeithaml, V. A., & Berry, L. L. (1988). SERVQUAL: A multiple-item scale for measuring consumer perceptions of service quality *Journal of Retailing* Vol. 64.
- Prasetyo, A., Irawan, D., Sensuse, D. I., Lusa, S., Wibowo, P. A., & Yulfitri, A. (2023). Evaluation of e-Service Quality Impacts Customer Satisfaction: One-Gate Integrated Service Application in

- Indonesian Weather Agency. *International Journal of Advanced Computer Science and Applications*, 14(1).
- Prasetyo, Beny, Fahrobby Adnan, and Randika Andi Syahputra, Evaluasi Kualitas Layanan Electronic Pendapatan Asli Daerah (E-PAD) Di Kabupaten Banyuwangi Menggunakan Metode E-GovQual Dan IPA. 16.1. <https://doi.org/10.33365/jtk.v16i1.1857>
- Purwanto, A. (2021). Partial least squares structural equation modeling (PLS-SEM) analysis for social and management research: a literature review. *Journal of Industrial Engineering & Management Research*. DOI: <https://doi.org/10.7777/jiemar.v2i4>
- Purwanto, Agus, and Yuli Sudargini, Partial Least Squares Structural Equation Modeling (PLS-SEM) Analysis for Social and Management Research : A Literature Review: *Journal of Industrial Engineering & Management Research*, 2.4. DOI: <https://doi.org/10.7777/jiemar.v2i4>
- Puspitarini, R. C. (2021). Analisis indeks kepuasan masyarakat mal pelayanan publik kota probolinggo. *Publicio: Jurnal Ilmiah Politik, Kebijakan Dan Sosial*, 3(1), 56-61. <http://download.garuda.kemdikbud.go.id/article.php?article=2635071&val=24571&title=ANALISIS%20INDEKS%20KEPUASAN%20MASYARAKAT%20MAL%20PELAYANAN%20PUBLIK%20KOTA%20PROBOLINGGO>
- Rani, N. A., & Samin, R. (2023). Strategi Pengembangan e-Government di Dinas Komunikasi dan Informatika Kota Tanjungpinang. *Jurnal Ilmu Administrasi Negara ASIAN (Asosiasi Ilmuwan Administrasi Negara)*, 11(2), 1-14. <https://doi.org/10.47828/jianaasian.v11i2.153>
- Santouridis, I. (2009). E-Service quality and its impact on customer satisfaction and trust: An empirical study on Greek customers of Internet shops. In *Proceedings of the 6th International Conference on Enterprise Systems, Accounting and Logistics, Thessaloniki, Greece* (pp. 18-19).
- Septa, Frandika, Anton Yudhana, and Abdul Fadlil, 2019. Analisis Kualitas Layanan E-Government Dengan Pendekatan E-GovQual Modifikasi: *JURNAL SISTEM INFORMASI BISNIS*, 9.2: 157. <http://ejournal.undip.ac.id/index.php/jsinbis>
- Setneg, 2003. Instruksi Presiden Nomor 3 Tahun 2003 Tentang Kebijakan Dan Strategi Nasional Pengembangan E-Government: Jakarta, Indonesia.
- Sholiha, E. U. N., & Salamah, M. (2016). Structural equation modeling-partial least square untuk pemodelan derajat kesehatan kabupaten/kota di Jawa Timur (studi kasus data indeks pembangunan kesehatan masyarakat Jawa Timur 2013). *Jurnal Sains dan Seni ITS*, 4(2). <http://dx.doi.org/10.12962/j23373520.v4i2.10443>
- Suryana, O. (2019). Analisis Survei Kepuasan Masyarakat Pada Mal Pelayanan Publik (MPP) Kota Batam. *Jurnal Transformasi Administrasi*, 9(1), 56-70. https://jta.lan.go.id/index.php/jta/article/view/jta-vol-9-1_05-Ohan-Suryana
- Suryana, O. (2019). Analisis Survei Kepuasan Masyarakat Pada Mal Pelayanan Publik (MPP) Kota Batam. *Jurnal Transformasi Administrasi*, 9(1), 56-70. https://jta.lan.go.id/index.php/jta/article/view/jta-vol-9-1_05-Ohan-Suryana
- Tamtelahitu, T. M. (2022). Analisa kualitas website info covid-19 provinsi maluku menggunakan metode e-govqual dan importance performance analysis. *JUPI (Jurnal Ilmiah Penelitian dan Pembelajaran Informatika)*, 7(2), 574-582.
- Tjiptono, F. (2007). Strategi Pemasaran, edisi kedua. *Yogyakarta: Andi*.
- Wahid, M., & Rohayati, W. (2022). *KUALITAS ELECTRONIC GOVERNMENT DALAM PELAYANAN KESEHATAN DIMASA PANDEMI COVID-19 PADA APLIKASI SISTEM INFORMASI KOTA JAMBI (SIKOJA)* (Doctoral dissertation, universitas jambi).
- Wahono, R. A. (2017). Penerapan e-govqual dalam sistem evaluasi penilaian kualitas layanan E-Government pemerintah kabupaten malang.