

Statistical Modeling of SERVQUAL Dimensions and Guest Satisfaction Using Multiple Linear Regression: Evidence from The Natsepa Hotel

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ABSTRACT

This study statistically evaluates the association between five SERVQUAL dimensions and guest satisfaction at The Natsepa Hotel, Ambon, using multiple linear regression. A cross-sectional case-study survey was conducted among 100 hotel guests during April-June 2025 using a five-point Likert questionnaire. The analysis comprised respondent-profile summaries, response-index analysis, item validity and internal-consistency tests, graphical regression diagnostics, the overall F test, partial coefficient tests, and the coefficient of determination. The mean indices were 77.90 for tangibles, 73.57 for reliability, 78.00 for responsiveness, 74.47 for assurance, 72.80 for empathy, and 78.45 for guest satisfaction. Jointly, the five dimensions were significantly associated with satisfaction, $F(5, 94) = 5.572$, $p < 0.001$, and explained 22.9% of its observed variation. Reliability had a positive significant coefficient ($B = 0.251$, $p = 0.009$), whereas responsiveness had a negative significant coefficient ($B = -0.291$, $p = 0.001$). Tangibles, assurance, and empathy were not statistically significant. The negative responsiveness coefficient is counterintuitive and should be verified against item coding and the original statistical output before substantive interpretation. The findings demonstrate the value of an interpretable multivariable model for identifying service priorities while also showing that additional determinants are required to explain guest satisfaction more fully.

Keywords: multiple linear regression; regression diagnostics; SERVQUAL; guest satisfaction; hotel service quality; response index

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1. INTRODUCTION

Hotel guest satisfaction is increasingly treated as a measurable outcome of a service system that combines physical facilities, employee behavior, process reliability, technology, and perceived value. Recent hospitality research confirms that service quality remains a major antecedent of satisfaction and loyalty, while also showing that its effects vary across properties, service settings, and analytical methods [1]-[6]. Contemporary studies use survey modeling, importance-performance analysis, online-review analytics, ordered-probit models, and configurational methods to identify the attributes that most strongly shape hotel evaluations [5]-[11].

The Natsepa Hotel Ambon operates in a coastal and island tourism environment, where the guest experience depends not only on accommodation but also on cleanliness, communication, accessibility, safety, staff competence, and the overall value of the stay. Recent evidence shows that guest ratings are sensitive to service, rooms, cleanliness, location, price fairness, technology, sustainability practices, and electronic word of mouth [7]-[18]. These findings support a multivariable statistical assessment because the contribution of one service dimension may change after the other dimensions are controlled.

This study operationalizes service quality through five dimensions: tangibles, reliability, responsiveness, assurance, and empathy. Recent hospitality studies continue to use these dimensions or closely related performance-based constructs to structure service evaluations [1], [2], [19], [20]. Tangibles represent visible service evidence; reliability represents accurate and consistent delivery; responsiveness represents prompt assistance; assurance represents employee competence, courtesy, and safety; and empathy represents individualized attention and understanding of guest needs.

The objective is to statistically estimate the joint and partial associations of the five service-quality dimensions with guest satisfaction using multiple linear regression. Descriptive response indices, validity and reliability checks, regression diagnostics, the overall F test, partial t tests, and the coefficient of determination are reported. The data were collected from 100 guests in April-June 2025, so the results are interpreted as historical case-study evidence rather than current causal estimates.

1.1. Service Quality and Guest Satisfaction

Recent hospitality scholarship treats service quality and guest satisfaction as related but distinct constructs. Service quality is generally evaluated through specific attributes or encounters, whereas satisfaction summarizes the guest's overall judgment of the stay. Reviews of the field and recent hotel studies show that higher perceived service quality is commonly associated with satisfaction, loyalty, revisit intention, online ratings, reputation, and performance [1]-[6], [19]. However, digital-platform and mixed-method studies also identify heterogeneity across hotel categories, destinations, traveler segments, and stages of the service process [7], [10]-[18].

Contemporary research expands satisfaction measurement beyond questionnaires. Ordered-probit models, text mining, AHP-SERVPERF analysis, regression, discriminant analysis, and electronic word-of-mouth models have been used to extract satisfaction signals from online ratings and reviews [5], [10], [12], [16]-[18], [20], [27]-[30]. These studies consistently highlight the importance of service delivery, cleanliness, rooms, value, communication, and problem resolution, but they also show that the dominant predictors are context dependent.

1.2. SERVQUAL Dimensions

Within the five-dimensional framework, tangibles cover buildings, interiors, facilities, cleanliness, comfort, and employee appearance. Reliability concerns delivering the promised service accurately and consistently. Responsiveness concerns speed, willingness to assist, and complaint resolution. Assurance reflects knowledge, courtesy, credibility, and security, while empathy captures accessibility, communication, and individualized care. Recent service-quality studies in hotels and hotel restaurants support the continued managerial relevance of these dimensions, although configurational evidence indicates that high satisfaction may arise from different combinations of service attributes [2], [5], [6], [19], [20], [25].

Five hypotheses were evaluated: H1, tangibles are associated with guest satisfaction; H2, reliability is associated with guest satisfaction; H3, responsiveness is associated with guest satisfaction; H4, assurance is associated with guest satisfaction; and H5, empathy is associated with guest satisfaction. The overall model and the individual coefficients were tested at a 5% significance level.

1.3. Statistical Modeling with Multiple Linear Regression

Multiple linear regression is appropriate when a continuous response is modeled as a linear combination of several predictors. In this study, guest satisfaction was modeled using the five service-quality dimensions. The population model is expressed in Equation (1):

$$Y_i = \beta_0 + \beta_1 X_{1i} + \beta_2 X_{2i} + \beta_3 X_{3i} + \beta_4 X_{4i} + \beta_5 X_{5i} + \varepsilon_i \quad (1)$$

In Equation (1), Y_i denotes the guest-satisfaction score for respondent i ; X_{1i} , X_{2i} , X_{3i} , X_{4i} , and X_{5i} denote tangibles, reliability, responsiveness, assurance, and empathy; β_0 is the intercept; β_1 – β_5 are partial regression

coefficients; and ε_i is the random error. Multiple linear regression provides an interpretable estimate of the unique association between each dimension and satisfaction while holding the remaining dimensions constant. Recent hospitality studies also combine regression with discriminant analysis, mediation models, structural equation modeling, importance-performance analysis, fsQCA, and machine-learning or text-mining approaches [3], [5], [7], [10], [16], [20]-[24], [27]-[30]. For the present historical dataset, multiple regression is retained because it directly addresses the original hypotheses and allows the reported coefficients, F statistic, p-values, and R^2 to be audited.

2. MATERIALS AND METHODS

2.1. Research Design and Respondents

The study used a cross-sectional case-study design. The observational units were visitors or guests of The Natsepa Hotel Ambon during April-June 2025. Data were collected through questionnaires completed by 100 respondents. The source manuscript does not specify the probability or non-probability sampling technique; therefore, population-level generalization should be made cautiously.

2.2. Variables and Measurement

The independent variables were tangibles (X_1 ; four indicators), reliability (X_2 ; three indicators), responsiveness (X_3 ; three indicators), assurance (X_4 ; three indicators), and empathy (X_5 ; three indicators). The dependent variable was guest satisfaction (Y ; four indicators). Responses were recorded on a five-point Likert scale from 1 (strongly disagree) to 5 (strongly agree).

For descriptive interpretation, each construct was summarized using the response index in Equation (2), where the observed weighted score is expressed as a percentage of the maximum possible score:

$$I_k = \frac{\sum_{j=1}^5 jF_{jk}}{5n} \times 100 \quad (2)$$

In Equation (2), I_k is the response index for construct k , j is the Likert score (1-5), F_{jk} is the number of respondents selecting score j for construct k , and n is the number of respondents. Using the three-category rule adopted in the source study, indices of 20.00-46.67 were classified as low, 46.68-73.34 as moderate, and 73.35-100.00 as high.

2.3. Statistical Analysis Procedure

Step 1: Data Coding and Screening

Questionnaire responses were coded from 1 (strongly disagree) to 5 (strongly agree). Before analysis, each respondent record should be checked for duplicate entries, missing responses, values outside the permitted scale, and inconsistent category labels. Variable names were standardized as X_1 (tangibles), X_2 (reliability), X_3 (responsiveness), X_4 (assurance), X_5 (empathy), and Y (guest satisfaction). The uploaded source contains summarized results rather than the raw response matrix; consequently, missing-value treatment and case-level outlier screening cannot be independently reconstructed and should be documented from the original dataset before journal submission.

Step 2: Descriptive Profiling and Response Indices

Respondent characteristics were summarized using frequencies and percentages for occupation, age, gender, monthly income, and visit frequency. Item scores were then converted into weighted totals, and construct-level indices were calculated using Equation (2). For constructs represented by several indicators, the reported construct index was obtained by averaging the corresponding item indices. These values were interpreted using the low, moderate, and high intervals described in Section 3.2.

Step 3: Item Validity Assessment

Item validity was evaluated using the significance of the reported item–total correlation. For each questionnaire item, the null hypothesis stated that the item score was not associated with the total construct score. An item was classified as valid when its reported p-value was below $\alpha = 0.05$. Because the source output provides p-values but not the correlation coefficients, a final submission should additionally report the corrected item–total correlation for every item so that both statistical significance and effect magnitude can be evaluated.

Step 4: Internal Consistency Reliability

Internal consistency was evaluated using Cronbach's alpha. For a construct containing k questionnaire items, the coefficient is defined in Equation (3):

$$\alpha = \frac{k}{k-1} \left(1 - \frac{\sum_{i=1}^k \sigma_i^2}{\sigma_T^2} \right) \quad (3)$$

In Equation (3), σ_i^2 is the variance of item i and σ_T^2 is the variance of the total construct score. The source study used $\alpha \geq 0.60$ as an exploratory reliability criterion. The coefficient was interpreted together with the number of items, construct content, and the available validity evidence, consistent with recent hospitality measurement research [26], [27].

Step 5: Regression Assumption Diagnostics

Three diagnostic checks were conducted before interpreting the regression coefficients. First, residual normality was assessed visually using the normal P–P plot; points that remain close to the diagonal indicate approximate normality. Second, multicollinearity was evaluated using the variance inflation factor in Equation (4):

$$VIF_j = \frac{1}{1 - R_j^2} \quad (4)$$

In Equation (4), R_j^2 is obtained by regressing predictor X_j on the remaining predictors. The source study used $VIF < 10$ as the decision rule for the absence of serious multicollinearity. Third, heteroskedasticity was examined using a scatterplot of standardized residuals against standardized predicted values. A random cloud around zero without a funnel or curved pattern was interpreted as evidence of approximately constant error variance. The reported empathy VIF of 0.065 is mathematically impossible because VIF cannot be below 1; therefore, the original SPSS output must be checked before publication.

Step 6: Multiple Linear Regression Estimation

The model in Equation (1) was estimated by ordinary least squares using guest satisfaction as the response and the five SERVQUAL dimensions as predictors. Unstandardized coefficients were retained because they express the expected change in the satisfaction score associated with a one-unit change in a predictor while the other predictors are held constant. The intercept, coefficient signs, coefficient magnitudes, and model residuals were examined before hypothesis decisions were made.

Step 7: Simultaneous and Partial Hypothesis Tests

The simultaneous test examined $H_0: \beta_1 = \beta_2 = \beta_3 = \beta_4 = \beta_5 = 0$ against the alternative that at least one slope differs from zero. The overall test statistic was evaluated using Equation (5):

$$F = \frac{\frac{SSR}{p}}{\frac{SSE}{n-p-1}} \quad (5)$$

In Equation (5), SSR is the regression sum of squares, SSE is the error sum of squares, $p = 5$ is the number of predictors, and $n = 100$ is the sample size. H_0 was rejected when the model p -value was below 0.05. When the overall test was significant, each coefficient was examined with the partial t statistic in Equation (6):

$$t_j = \frac{\hat{\beta}_j}{SE(\hat{\beta}_j)} \quad (6)$$

In Equation (6), $\hat{\beta}_j$ is the estimated coefficient for predictor j and $SE(\hat{\beta}_j)$ is its standard error. For each predictor, $H_0: \beta_j = 0$ was rejected when $p < 0.05$. The sign of $\hat{\beta}_j$ determined the estimated direction of association, whereas its absolute magnitude described the change in satisfaction for a one-unit change in the predictor, conditional on the other dimensions.

Step 8: Goodness of Fit and Statistical Reporting

Model explanatory power was summarized using the coefficient of determination in Equation (7):

$$R^2 = 1 - \frac{SSE}{SST} \quad (7)$$

In Equation (7), SST is the total sum of squares. R^2 represents the proportion of observed variation in guest satisfaction explained jointly by the five predictors. The final reporting sequence was: respondent profile, response indices, item validity, reliability, diagnostic plots and VIF values, the overall F test, partial coefficient tests, the fitted equation, and R^2 . Because the source coefficient table does not include standard errors or confidence intervals, these statistics should be added from the original software output in a future revision, following recent predictive hotel-satisfaction applications [20], [27].

3. RESULTS AND DISCUSSION

3.1. Respondent Characteristics

The sample consisted of 100 guests. Most respondents were entrepreneurs (38%), aged 19–30 years (64%), and male (71%). Thirty percent reported monthly income above IDR 2,000,000, and 61% had stayed at the hotel two to three times. Table 1 consolidates the respondent profile. Because $n = 100$, percentages were recalculated directly from the reported frequencies where the source table contained inconsistencies.

Table 1. Respondent Characteristics ($n = 100$)

Characteristic	Category	n	%
Occupation	Civil servant	26	26
	Private employee	27	27
	Entrepreneur	38	38
	Homemaker	9	9
	Student	0	0
Age	< 18 years	9	9
	19–30 years	64	64
	31–50 years	27	27
Gender	Male	71	71
	Female	29	29
Monthly income	< IDR 500,000	9	9
	IDR 500,000–1,000,000	17	17
	IDR 1,000,000–1,500,000	24	24
	IDR 1,500,000–2,000,000	20	20

Characteristic	Category	n	%
	> IDR 2,000,000	30	30
Visit frequency	2–3 stays	61	61
	3–5 stays	20	20
	> 5 stays	19	19

3.2. Response Indices

Guests generally reported favorable perceptions. Responsiveness had the highest service-quality index (78.00), followed by tangibles (77.90), assurance (74.47), reliability (73.57), and empathy (72.80). Empathy was the only service-quality construct classified as moderate, although its score was close to the high-category threshold. The guest-satisfaction index was 78.45, indicating a high overall evaluation.

Table 2. Construct-Level Response Indices

Construct	Mean index	Category
Tangibles (X ₁)	77.90	High
Reliability (X ₂)	73.57	High
Responsiveness (X ₃)	78.00	High
Assurance (X ₄)	74.47	High
Empathy (X ₅)	72.80	Moderate
Guest satisfaction (Y)	78.45	High

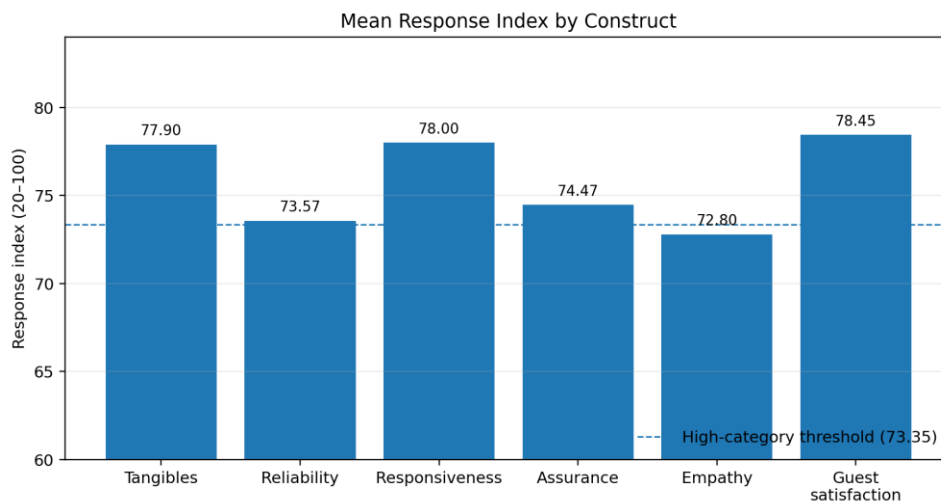


Figure 1. Mean Response Index by Construct

At the item level, the strongest ratings were recorded for 24-hour service (81.20), prompt responses to complaints (81.00), satisfaction with employee attention and service (79.60), and intention to return (79.40). The weakest ratings concerned employees' understanding of guest needs (67.20), employees' breadth of knowledge (69.60), hotel communication (70.00), and the simplicity of registration procedures (70.20). These results suggest that guests valued availability and complaint handling, while personalized understanding, staff knowledge, communication, and process simplicity remained improvement priorities.

3.3. Validity and Reliability

All questionnaire indicators were reported as valid because their item-level p-values were below 0.05. Cronbach's alpha values ranged from 0.654 to 0.782 and exceeded the 0.60 criterion used in the source study.

Responsiveness had the highest internal consistency, whereas assurance had the lowest. The coefficients indicate acceptable exploratory reliability, although future work should use refined scales and report additional evidence such as corrected item–total correlations and factor validity.

Table 3. Measurement Quality

Construct	Items	Validity	Cronbach's α	Decision
Tangibles	4	All valid	0.659	Reliable
Reliability	3	All valid	0.716	Reliable
Responsiveness	3	All valid	0.782	Reliable
Assurance	3	All valid	0.654	Reliable
Empathy	3	All valid	0.689	Reliable
Guest satisfaction	4	All valid	0.696	Reliable

3.4. Regression Diagnostics

The normal P-P plot shows that the standardized residual points lie close to the diagonal line, supporting an approximately normal residual distribution (Figure 2). The residual-versus-predicted scatterplot shows no clear funnel or systematic pattern and has points distributed above and below zero, providing no strong graphical evidence of heteroskedasticity (Figure 3). These are visual diagnostics and should ideally be supplemented with numerical tests and influence statistics in a future reanalysis.

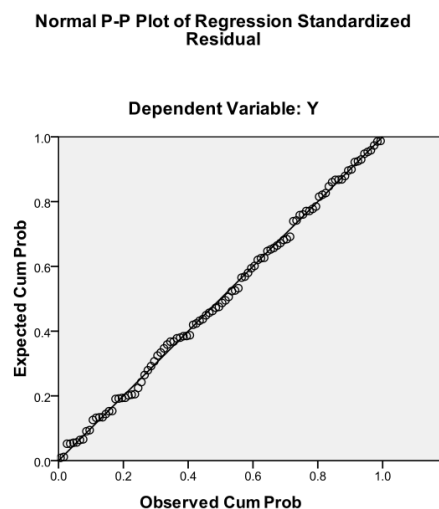


Figure 2. Normal P–P Plot of Standardized Regression Residuals

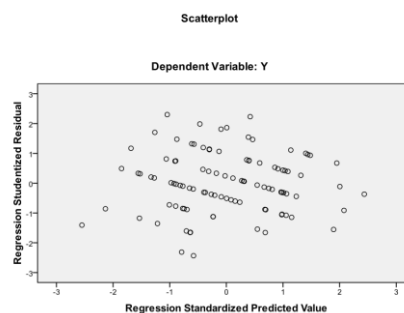


Figure 3. Scatterplot of Standardized Residuals and Predicted Values

Table 4. Reported Variance Inflation Factors

Predictor	Reported VIF	Interpretation
Tangibles	1.044	No multicollinearity
Reliability	1.038	No multicollinearity
Responsiveness	1.099	No multicollinearity
Assurance	1.033	No multicollinearity
Empathy	0.065*	Verify source output

*The source table reports a VIF of 0.065 for empathy. Because a VIF cannot be below 1, this value is likely a transcription or column-label error and must be checked against the original SPSS output before submission.

3.5. Multiple Linear Regression and Hypothesis Testing

The overall regression was statistically significant, $F(5, 94) = 5.572$, $p < 0.001$. Thus, the five service-quality dimensions jointly contributed to explaining differences in guest satisfaction. The coefficient of determination was $R^2 = 0.229$, indicating that the model explained 22.9% of the observed variation. The corresponding adjusted R^2 , derived from $n = 100$ and five predictors, is approximately 0.188. Most of the variation therefore remained associated with factors outside the model.

Table 5. Multiple Linear Regression Results

Term	B	p-value	Decision ($\alpha = 0.05$)
Constant	15.300	< 0.001	Significant
Tangibles (X_1)	0.024	0.830	Not significant
Reliability (X_2)	0.251	0.009	Significant
Responsiveness (X_3)	-0.291	0.001	Significant
Assurance (X_4)	-0.068	0.523	Not significant
Empathy (X_5)	0.129	0.235	Not significant

The estimated unstandardized regression model is presented in Equation (8):

$$\hat{Y} = 15.300 + 0.024X_1 + 0.251X_2 - 0.291X_3 - 0.068X_4 + 0.129X_5 \quad (8)$$

Table 6. Analysis of Variance for the Regression Model

Source	Sum of squares	Df	Mean square	F	p-value
Regression	52.444	5	10.489	5.572	< 0.001
Residual	176.946	94	1.882		
Total	229.390	99			

3.6. Discussion

Reliability was positively and significantly associated with guest satisfaction. Holding the other dimensions constant, a one-unit increase in reliability was associated with a 0.251-unit increase in satisfaction. This result is consistent with recent evidence that accurate service delivery, dependable processes, and the fulfillment of service promises are central to satisfaction and loyalty [2], [6], [19], [20]. The relatively weak score for registration simplicity also indicates a specific process-improvement opportunity.

Responsiveness was statistically significant but had a negative coefficient. This sign conflicts with the high descriptive responsiveness index and with studies that generally link prompt assistance and effective problem resolution to favorable guest evaluations [2], [7], [25]. Recent configurational and nonlinear research nevertheless shows that service attributes can have asymmetric or context-dependent effects when analyzed

jointly [5], [20], [23]. The coefficient may therefore reflect reverse coding, suppression among correlated dimensions, omitted variables, or influential observations. It should not be interpreted managerially until the raw data and original SPSS output are verified.

Tangibles, assurance, and empathy were not statistically significant after adjustment for the other dimensions, despite favorable descriptive indices. Similar recent research shows that the importance of specific hotel attributes can vary by destination, traveler group, hotel category, technology adoption, sustainability orientation, and the rating platform used [4], [8], [9], [15]-[18], [22]-[25]. A non-significant partial coefficient therefore indicates insufficient evidence of a unique linear effect in this sample, not that the dimension is irrelevant to the guest experience.

The model explained 22.9% of the variation in satisfaction, which is meaningful but modest. Recent studies identify additional determinants including price fairness, perceived value, room and facility quality, online reputation, e-WOM credibility, technological interfaces, sustainability practices, and service-failure responses [6]-[11], [14], [18], [21]-[24], [28]-[30]. Future models for The Natsepa Hotel should incorporate these variables and compare linear regression with mediation, structural-equation, configurational, or predictive models.

4. CONCLUSION

The 2025 survey of 100 guests at The Natsepa Hotel Ambon found high mean indices for tangibles, reliability, responsiveness, assurance, and guest satisfaction, while empathy was rated moderate. All indicators were reported as valid, and all construct reliability coefficients exceeded the exploratory 0.60 criterion. The multiple linear regression model was statistically significant and explained 22.9% of the observed variation in guest satisfaction.

Reliability had a positive significant coefficient, indicating that consistent and dependable service was the clearest positive predictor in the model. Responsiveness had a significant negative coefficient, but this counterintuitive sign requires verification before managerial interpretation. Tangibles, assurance, and empathy did not have statistically significant unique coefficients after adjustment for the other dimensions.

4.1. Recommendations and Limitations

The hotel should prioritize reliable service delivery, simplify guest-registration procedures, strengthen staff knowledge and communication, and improve employees' understanding of individual guest needs. Management should also collect updated data and extend the statistical model to include perceived value, price fairness, room quality, food and beverage quality, technology, online reputation, and service recovery.

This study is limited by its single-hotel case design, sample size of 100, historical 2025 data, unspecified sampling technique, and reliance on a cross-sectional self-report questionnaire. The original output also contains a VIF value that requires verification, and the negative responsiveness coefficient should be audited using the raw data. Future research should employ a larger and more recent sample, clearly document sampling and ethics procedures, validate the measurement model using factor analysis, and report standardized effects, confidence intervals, influence diagnostics, adjusted R^2 , and robustness checks.

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FUNDING

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ETHICS STATEMENT

The source manuscript does not provide an institutional ethics approval or informed-consent statement. Because the respondent profile includes participants younger than 18 years, the authors must document the applicable ethics review, participant assent, and parent or guardian consent procedures before journal submission.

AUTHOR CONTRIBUTIONS

Author roles for conceptualization, methodology, data collection, statistical analysis, visualization, drafting, and manuscript review should be completed using the journal's required contribution taxonomy.

DATA AVAILABILITY STATEMENT

The anonymized raw questionnaire data and original statistical output were not included in the uploaded source files. The authors should provide an appropriate data-availability statement and retain the source output for verification.

CONFLICTS OF INTEREST

The authors should disclose any actual or potential conflict of interest before submission.

REFERENCES

- [1] P. J. Shyju, K. Singh, J. Kokkranikal, R. Bharadwaj, S. Rai, and J. Antony, "Service quality and customer satisfaction in hospitality, leisure, sport and tourism: An assessment of research in Web of Science," *Journal of Quality Assurance in Hospitality & Tourism*, vol. 24, no. 1, pp. 24–50, 2023, doi: 10.1080/1528008X.2021.2012735.
- [2] O. Abdullah, T. Sufi, and S. Kumar, "Service quality and its influence on customer satisfaction and customer loyalty in the restaurants of five-star hotels," *African Journal of Hospitality, Tourism and Leisure*, vol. 11, no. 6, pp. 2173–2189, 2022, doi: 10.46222/ajhtl.19770720.349.
- [3] V. Sharma and D. A. R. Bhat, "Co-creation and technological innovation: The predictors of guest satisfaction and revisit intention in hospitality industry," *International Journal of Hospitality & Tourism Systems*, vol. 15, no. 1, pp. 91–100, 2022.
- [4] Y. Song, K. Liu, L. Guo, Z. Yang, and M. Jin, "Does hotel customer satisfaction change during the COVID-19? A perspective from online reviews," *Journal of Hospitality and Tourism Management*, vol. 51, pp. 132–138, 2022, doi: 10.1016/j.jhtm.2022.02.027.
- [5] M. Ntemi and C. Kotropoulos, "Online hotel rating prediction through a dynamic weighted ordered probit model," *Digital Signal Processing*, vol. 120, Art. no. 103310, 2022, doi: 10.1016/j.dsp.2021.103310.
- [6] A. Orea-Giner, L. Fuentes-Moraleda, T. Villacé-Molinero, A. Muñoz-Mazón, and J. Calero-Sanz, "Does the implementation of robots in hotels influence the overall TripAdvisor rating? A text mining analysis from the Industry 5.0 approach," *Tourism Management*, vol. 93, Art. no. 104586, 2022, doi: 10.1016/j.tourman.2022.104586.
- [7] M. Preziosi, A. Acampora, M. C. Lucchetti, and R. Merli, "Delighting hotel guests with sustainability: Revamping importance-performance analysis in the light of the three-factor theory of customer satisfaction," *Sustainability*, vol. 14, no. 6, Art. no. 3575, 2022, doi: 10.3390/su14063575.
- [8] E. Sánchez-Vargas, A. M. Campón-Cerro, E. Prado-Recio, B. S. Pasaco-González, and A. Moreno-Lobato, "Exploring the hotel experience in a cultural city through a UGC analysis," *Sustainability*, vol. 14, no. 23, Art. no. 15695, 2022, doi: 10.3390/su142315695.

- [9] A. Williady, H. N. Wardhani, and H.-S. Kim, "A study on customer satisfaction in Bali's luxury resort utilizing big data through online review," *Administrative Sciences*, vol. 12, no. 4, Art. no. 137, 2022, doi: 10.3390/admsci12040137.
- [10] Y. Yang, "Impacts of temporal contiguity on creation and consumption of e-WOM in hotel context: A combined perspective of review rating and text," *International Journal of Hospitality Management*, vol. 105, Art. no. 103256, 2022.
- [11] F. Ye, Q. Xia, M. Zhang, Y. Zhan, and Y. Li, "Harvesting online reviews to identify the competitor set in a service business: Evidence from the hotel industry," *Journal of Service Research*, vol. 25, no. 2, pp. 301–327, 2022.
- [12] H. T. T. Nguyen and T. X. Nguyen, "Understanding customer experience with Vietnamese hotels by analyzing online reviews," *Humanities and Social Sciences Communications*, vol. 10, no. 1, Art. no. 618, 2023.
- [13] N. Mekoth, A. R. Thomson, and A. Unnithan, "The mediating role of satisfaction on the relationship between professionalism and employee continuity in hospitality industry," *Journal of Quality Assurance in Hospitality & Tourism*, vol. 24, no. 4, pp. 477–503, 2023.
- [14] U. Pandey, M. T. Islam, and M. I. Hossain, "Servicescape, e-WOM, and satisfaction on tourists' revisit intention to a yoga tourist destination: Evidence from Patanjali Yogpeeth, India," *Revista Turismo & Desenvolvimento*, vol. 44, pp. 313–333, 2023.
- [15] G. Perić, M. Slavković, M. Gašić, B. Đurović, and S. Dramićanin, "Unboxing the complex between job satisfaction and intangible service quality: A perspective of sustainability in the hotel industry," *Sustainability*, vol. 15, no. 18, Art. no. 14019, 2023, doi: 10.3390/su151814019.
- [16] Z. Shu, M. Houghton Torralba, R. A. Carrasco, and M. F. Blasco López, "Assessing customer satisfaction of London luxury hotels with the AHP method and the SERVPERF scale: A case study of customer reviews on TripAdvisor," *Procedia Computer Science*, vol. 221, pp. 73–80, 2023.
- [17] A. Valenzuela-Ortiz, J. A. Castañeda, and J. Chica-Olmo, "Good or excellent? Factors determining online hotel ratings: A spatial approach," *Journal of Hospitality Marketing & Management*, vol. 33, no. 2, pp. 208–232, 2024, doi: 10.1080/19368623.2023.2246457.
- [18] D. Verma, P. P. Dewani, A. Behl, V. Pereira, Y. K. Dwivedi, and M. Del Giudice, "A meta-analysis of antecedents and consequences of eWOM credibility: Investigation of the moderating role of culture and platform type," *Journal of Business Research*, vol. 154, Art. no. 113292, 2023, doi: 10.1016/j.jbusres.2022.113292.
- [19] M. H. Asgeirsson, T. Gudlaugsson, and G. T. Jóhannesson, "The relationships between service quality, reputation, and performance in hospitality," *Tourism and Hospitality*, vol. 5, no. 3, pp. 736–752, 2024, doi: 10.3390/tourhosp5030043.
- [20] V. Perdomo-Verdecia, P. Garrido-Vega, and M. Sacristán-Díaz, "An fsQCA analysis of service quality for hotel customer satisfaction," *International Journal of Hospitality Management*, vol. 122, Art. no. 103793, 2024, doi: 10.1016/j.ijhm.2024.103793.
- [21] A. Vives and L. Ostrovskaya, "Exploring the impact of hotel attributes and services on price and revenue: A hedonic pricing model approach with a focus on internal and external segmentation and repeat customers," *Tourism Economics*, vol. 30, no. 4, pp. 813–843, 2024.
- [22] X. Wu, H. Xiang, Y. Wang, and Y. Huo, "How does customer satisfaction change after hotels start using self-service kiosks?" *International Journal of Hospitality Management*, vol. 122, Art. no. 103872, 2024, doi: 10.1016/j.ijhm.2024.103872.
- [23] Z. Zhao, M. Cheng, K. Lv, and L. Huang, "What matters most? A sustainable or a conventional hotel experience? The interaction effect on guest satisfaction: A mixed-methods approach," *International Journal of Hospitality Management*, vol. 124, Art. no. 103988, 2024, doi: 10.1016/j.ijhm.2024.103988.

-
- [24] F. Zhou, S. Huang, and M. Matthews, "Understanding solo female travellers in Canada: A two-factor analysis of hotel satisfaction and dissatisfaction using TripAdvisor reviews," *Tourism and Hospitality*, vol. 5, no. 1, pp. 167–186, 2024.
- [25] K. Kalnaovakul, K. Balasubramanian, and S. H.-W. Chuah, "Service quality, customer sentiment and online ratings of beach hotels: An analysis of moderating factors," *Journal of Hospitality and Tourism Insights*, vol. 8, no. 3, pp. 988–1009, 2025, doi: 10.1108/JHTI-06-2024-0591.
- [26] A. Ntalakos, D. Belias, A. Koustelios, and N. Tsigilis, "Examining the validity of organizational behavior measurement scales in the Greek hospitality industry," *International Journal of Hospitality and Tourism Systems*, vol. 18, no. 1, pp. 1–16, 2025.
- [27] Q. J. De Oliveira-Cardoso, J. A. Martínez-González, and C. D. Álvarez-Albelo, "Hotel guest satisfaction: A predictive and discriminant study using TripAdvisor ratings," *Administrative Sciences*, vol. 15, no. 7, Art. no. 264, 2025, doi: 10.3390/admsci15070264.
- [28] I. G. Andirasdini, D. M. Aliem, and A. Sofia, "Regression models with ARMA errors for predicting tabarru fund in Islamic insurance: A normally distributed simulation approach," *Parameter: Jurnal Matematika, Statistika dan Terapannya*, vol. 4, no. 2, pp. 239–248, 2025, doi: 10.30598/parameterv4i2pp239-248.
- [29] Z. Shu, M. Llorens-Marin, R. A. Carrasco, and M. S. Romero, "Customer electronic word-of-mouth management strategies based on computing with words: The case of Spanish luxury hotel reviews on TripAdvisor," *Electronics*, vol. 14, no. 2, Art. no. 325, 2025, doi: 10.3390/electronics14020325.
- [30] M. Y. Matdoan, M. Wance, and A. M. Balami, "Ridge regression modeling in overcoming multicollinearity problems in multiple linear regression models (case study: Life expectancy in Maluku Province)," *AIP Conference Proceedings*, vol. 2360, no. 1, Art. no. 020014, 2021, doi: 10.1063/5.0059483.
- [31] M. Zhang, S. Cai, and T. Qiao, "Service failure type, response strategy and observers' perceived helpfulness: Evidence from TripAdvisor," *International Journal of Contemporary Hospitality Management*, vol. 37, no. 3, pp. 871–889, 2025.
- [32] N. P. Rana, N. Begum, M. N. Faisal, and A. Mishra, "Customer experiences with service robots in hotels: A review and research agenda," *Journal of Hospitality Marketing & Management*, vol. 34, no. 2, pp. 145–174, 2025, doi: 10.1080/19368623.2024.2403640.