

Impact of Service Quality on Customer Retention: A Study of Hotels in Algiers

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Abstract: This study examines the impact of hotel service quality dimensions on customer loyalty in Algiers, Algeria. Using a stratified random sampling approach, 320 respondents from three-, four-, and five-star hotels were surveyed (response rate: 64%). The questionnaire measured five dimensions of service quality (responsiveness, empathy, tangibles, reliability, and assurance) and four dimensions of customer loyalty (word-of-mouth, repurchase intention, price tolerance, and complaint behavior). Multiple linear regression analysis revealed that service quality dimensions collectively explain 74.2% of the variance in customer loyalty ($R^2 = 0.742$, $F = 182.93$, $p < 0.001$). Tangible aspects emerged as the strongest predictor ($\beta = 0.823$, $p < 0.001$), followed by reliability ($\beta = 0.445$), security ($\beta = 0.419$), responsiveness ($\beta = 0.324$), and empathy ($\beta = 0.250$). All dimensions had statistically significant effects ($p < 0.05$). These findings suggest that hotels in Algiers should prioritize physical environment improvements, consistency, and security measures to enhance customer loyalty.

Introduction :

Service quality has become a strategic priority in the global hospitality industry, as hotels increasingly recognize its influence on customer perceptions, satisfaction, and behavioral intentions. In highly competitive urban tourism markets, such as Algiers—the political and economic capital of Algeria—hotels face mounting pressure to not only attract guests but also retain them in the long term. Retention is no longer solely driven by price or location, but by the overall quality of the guest experience, which encompasses tangible aspects (e.g., cleanliness, facilities, ambiance) and intangible dimensions (e.g., staff responsiveness, reliability, empathy, and assurance). High service quality contributes directly to guest trust, emotional attachment, and repeat patronage, all of which are essential in sustaining profitability in a market characterized by increasing competition and shifting customer expectations.

In the context of Algiers, where the hotel industry is undergoing modernization in response to both domestic tourism development and international market demands, understanding the drivers of customer loyalty has become critical. With the rise of online review platforms and booking engines, customer retention is now closely tied to consistent service delivery and perceived value. Moreover, guests in urban Algerian hotels often represent a mix of business and leisure travelers, whose expectations may differ significantly. As such, hotels must adopt a more customer-centric strategy that prioritizes service quality as a differentiator. Despite its acknowledged importance, the relationship between service quality and actual customer retention behavior remains underexplored in the Algerian context, particularly through comparative studies involving multiple hotel types and service levels. This study seeks to respond to that need by systematically analyzing how service quality influences retention across a sample of hotels operating in Algiers.

1- Research Problem:

Although the relationship between service quality and customer retention has been widely explored in global hospitality literature, empirical evidence from North African contexts—particularly Algeria—remains scarce. Existing studies tend to generalize findings across regions without accounting for the cultural, economic, and service delivery differences that characterize emerging markets. Moreover, most prior research in Algeria has focused either on customer satisfaction or service quality in isolation, with limited investigation into how service quality directly affects the long-term retention of hotel guests. There is also a lack of multi-site studies that compare service performance across different hotel establishments within the same city. This research seeks to fill these gaps by examining the direct impact of service quality on customer retention across multiple hotels in

Algiers, offering localized insights that are both theoretically valuable and practically actionable for hotel managers operating in similar urban environments.

To what extent do the dimensions of hotel service quality (responsiveness, empathy, tangibles, reliability, and security) statistically predict customer loyalty in three-, four-, and five-star hotels operating in Algiers?

2- Main Hypothesis of the Study and Sub-Hypotheses:

A. Main Hypothesis:

- Service quality dimensions have no statistically significant relationship with customer loyalty in Algerian hotels (at $\alpha = 0.05$):
- At least one dimension of hotel service quality (responsiveness, empathy, tangibles, reliability, or security) has a statistically significant positive relationship with customer loyalty in Algerian hotels ($\alpha = 0.05$).

B. Sub-Hypotheses:

1. Responsiveness has a statistically significant positive effect on customer loyalty ($p < 0.05$).
2. Empathy has a statistically significant positive effect on customer loyalty ($p < 0.05$).
3. Tangible aspects have a statistically significant positive effect on customer loyalty ($p < 0.05$).
4. Reliability has a statistically significant positive effect on customer loyalty ($p < 0.05$).
5. Security/Assurance has a statistically significant positive effect on customer loyalty ($p < 0.05$).

3. Research Objectives and Scope:

The research process was structured according to the following stages:

Stage1: Literature Review & Conceptualization (Weeks 1-2)

- Review of SERVQUAL dimensions (Parasuraman et al., 1988; 2005)
- Analysis of customer loyalty conceptualizations (Kigen & De Villiers, 2024)
- Identification of gaps in North African hotel sector research.

Stage 2: Research Design & Instrumentation (Weeks 3-4)

- Selection of research method: Descriptive Analytical Method
- Stratified random sampling design (n=320)
- Questionnaire development (36 items total: 22 quality items + 14 loyalty items)
- Translation and validation (English, French, Arabic)

Stage 3: Reliability & Validity Testing (Week 5)

- Cronbach's Alpha testing:
 - Service Quality: $\alpha = 0.923$
 - Customer Loyalty: $\alpha = 0.846$
 - Total items: $\alpha = 0.884$
- Factor validity confirmation
- Questionnaire confirmation and authorization

Stage 4: Data Collection (July 18 - August 30, 2023)

- Distribution to 3-, 4-, and 5-star hotels (n=13 hotels)
- Stratified allocation by hotel category
- On-site data collection from hotel guests
- Data cleaning and preparation (320 valid responses)

Stage 5: Data Analysis (Week 6-7)

- Descriptive statistics and frequency analysis
- Assumption testing (Normality, Multicollinearity, Heteroscedasticity)
- Multiple linear regression analysis
- Simple linear regression for sub-hypotheses testing
- Statistical significance testing (ANOVA, F-test, T-test)
- Effect size computation and interpretation

Stage 6: Interpretation & Reporting (Week 8)

- Result interpretation within Algerian context
 - Comparison with global hospitality literature
 - Identification of practical implications
 - Formulation of recommendations
 - Documentation and final report preparation
- Total Duration: 8 weeks from July 18 to August 30, 2023

4.Literature Review

A. Definition and Importance of Service Quality

Service quality refers to the overall assessment of how well a service meets the needs, expectations, and preferences of customers. It is a multi-dimensional concept that includes both tangible and intangible aspects of the service experience (Yesitadewi& Widodo, 2024). Tangible components include the physical environment, cleanliness, equipment, and appearance of staff, while intangible aspects focus on how the service is delivered—such as the courtesy, professionalism, accuracy, empathy, and responsiveness of employees (Roncally ET AL., 2024; Saru, 2025). In the hotel industry, service quality begins before the guest arrives and continues beyond their departure (Roncally et al., 2024). It includes the ease of the booking process,

the speed and warmth of the check-in experience, the comfort and cleanliness of the room, the availability of staff when needed, and how the hotel handles requests, complaints, or special needs (Sheoran, 2025).

The importance of service quality lies in its direct influence on customer satisfaction, loyalty, and long-term business performance (Kosasih et al., 2024). In a highly competitive hospitality market, especially in urban destinations, hotels that consistently deliver high-quality service are more likely to retain customers and generate positive word-of-mouth (Bayani & Calma, 2025). High service quality creates emotional connections with guests, increases their willingness to return, and reduces the risk of losing them to competitors (Yen & Chen, 2025). Moreover, it strengthens the hotel's reputation, enhances staff morale through positive customer interactions, and leads to operational efficiency by minimizing service failures and complaints (Roncally et al., 2024). As customer expectations continue to evolve, delivering excellent service is no longer optional—it is essential for differentiation, guest retention, and sustainable success in the hospitality sector (Rachman & Hapsari, 2024).

B. Criteria for Measuring Service Quality

Service quality is assessed through a set of interrelated dimensions that capture both the technical and experiential aspects of service delivery. These dimensions typically include **reliability**, **responsiveness**, **assurance**, **tangibles**, and **empathy**, each contributing uniquely to the customer's overall perception of quality (Setiono & Putra, 2025; Asyfiya & Fariza, 2024; Ibrahim et al., 2024 ; Al-Romeedy & Hashem, 2024).

- **Reliability** refers to the service provider's ability to consistently deliver services as promised, accurately and dependably. It reflects the degree to which customers can count on the provider to fulfill commitments in a timely and effective manner.
- **Responsiveness** captures the willingness and promptness of service personnel to assist customers and provide timely services. It emphasizes the provider's readiness to address inquiries, resolve issues, and adapt to customer needs with minimal delay.
- **Assurance** represents the sense of confidence and security that customers feel in the service process. It is shaped by the competence, courtesy, and professionalism of staff, and the perceived integrity and credibility of the service provider.
- **Tangibles** encompass the physical aspects of the service environment, including the appearance of facilities, equipment, personnel, and communication materials. These elements form the visible cues that influence customers' initial impressions and reinforce their trust in the service.

- **Empathy** reflects the level of individualized attention, care, and respect provided to customers. It involves understanding customer needs, maintaining respectful interactions, safeguarding privacy, and demonstrating genuine concern for their well-being.

Together, these five dimensions provide a comprehensive framework for evaluating service quality across industries, particularly in high-contact environments such as hospitality, where customer experience is a critical determinant of satisfaction and loyalty.

C- Definition of Customer Loyalty and How to Enhance it

Customer loyalty refers to a customer's consistent preference and repeated engagement with a specific brand, product, or service over time, often accompanied by a willingness to recommend it to others (Kigen & De Villiers, 2024). It goes beyond simple satisfaction, reflecting a deeper emotional connection and trust developed through positive, value-driven experiences. Loyal customers tend to exhibit repeated purchasing behavior, resistance to switching even when competitors offer alternatives, and a higher lifetime value to the organization. In the hospitality industry, customer loyalty is especially vital due to the highly competitive nature of the market and the experiential nature of the service. A loyal hotel guest, for instance, is more likely to rebook, leave favorable reviews, and contribute to positive word-of-mouth, making loyalty a key driver of long-term business sustainability and profitability (Gaafar & Al-Romeedy, 2024).

Enhancing customer loyalty requires a strategic focus on delivering consistent service quality, creating personalized experiences, and building emotional engagement with the brand (Nader et al., 2025). Hospitality organizations can foster loyalty by ensuring reliability in service delivery, responding promptly to customer needs, and demonstrating genuine care and empathy throughout the guest journey (Wilson, 2024). Loyalty programs, targeted communication, and post-stay follow-ups are additional tools that help reinforce the relationship and make customers feel valued (Toker, 2024). Moreover, empowering frontline staff, investing in customer service training, and collecting feedback to improve offerings can significantly increase customer retention. In a digital era where guests often share their experiences publicly, every interaction becomes an opportunity to strengthen loyalty or risk losing it making proactive loyalty management essential for sustainable success (Shumaker, 2024 ; Al-Romeedy, 2024).

D- Criteria for Measuring Customer Loyalty

Customer loyalty can be evaluated through four key dimensions that reflect both behavioral and attitudinal commitment to a brand or service provider (Ngo et al., 2025 ; Baines et al., 2017 ; Fifield, 2012).

- **Word-of-mouth communication** refers to the customer's willingness to actively recommend the product, service, or institution to others, serving as a form of unpaid promotion and social endorsement.
- **Repurchase intention** captures the customer's likelihood of engaging in repeated transactions with the organization, indicating long-term preference and trust.
- **Price tolerance** reflects the customer's relative insensitivity to price increases, demonstrating their perception of value and emotional attachment to the brand, even in the presence of cheaper alternatives.
- **Complaint behavior** is observed in the customer's patience and continued loyalty despite occasional service failures, highlighting their commitment to the brand and belief in its overall quality and reliability.

5- Research Methodology Procedures

A- Study Method:

This research relies on the descriptive analytical method using a sampling approach. The descriptive method refers to a research approach that involves surveying all or a significant portion of the research population in order to describe the phenomenon under study, focusing on its nature and extent.

B- Research Community:

The study community consists of all customers of five-star, four-star, and three-star hotels residing in those hotels during the field study conducted in Algiers from July 18 to August 30, 2023. A total of 500 questionnaires were distributed to hotels in Algiers to be distributed to customers by the hotel reception staff, resulting in the retrieval of 345 questionnaires, of which 320 were completed, meaning that 25 questionnaires were excluded, resulting in a response rate of 64%.

C- Research Sample:

Due to the presence of different categories of hotels in the study (five-star, four-star, and three-star), a stratified random sample was used to represent each category (stratum) of the research community in the research sample. The table below presents the number of items for each stratum.

Table 1: Number of Research Sample Items for Hotels:

HotelCategory	Number of Hotels	Number of Items per Category
Five Stars	3	42
Four Stars	2	79
Three Stars	8	199

The Source :Prepared by the researchers

D- Study Tool:

The questionnaire was used as a tool to collect primary research data, which was distributed to a sample of five-star, four-star, and three-star hotel customers in Algiers. We also translated it into French and English to obtain more accurate data from customers of different nationalities.

E- Content of the Study Tool:

The questionnaire contained two sections of data. The first section included personal information about hotel customers, while the second section of the survey included a set of items related to dimensions of service quality, relying on a scale that consists of 22 statements, in addition to a set of statements regarding customer loyalty, which amounted to 14 statements. All of these items were measured according to a five-point Likert scale, constructed as follows:

Classification	I completely agree	I agree	Neutral	I disagree	I completely disagree
Score	5	4	3	2	1

F- Reliability of the Study Tool:

This refers to the degree to which the scale provides consistent readings each time it is used, or what is the level of its consistency, coherence, and continuity when repeated across different times and different people. We used the Cronbach's Alpha method to measure the reliability of the study tool; through this method, the internal consistency among the questions can be assessed.

Table 2: Reliability Coefficients - Cronbach's Alpha

Scale	Number of Items	Cronbach's Alpha
Service Quality	22	0.923
Customer Loyalty	14	0.846
All Items	36	0.884

The Source: Prepared by the researchers based on the results of the statistical program (spssv19)

It is clear from Table No. (02) that the reliability coefficients are high, ranging from 0.923 to 0.846, with the overall reliability coefficient for all items being 0.884, which corresponds to 88.4%. This value is higher than the 60% minimum acceptable threshold in social cases. Thus, the questionnaire enjoys a high level of reliability.

G- Examining the Hypotheses of the Study:

To begin with, the primary hypothesis states that there is a statistically significant relationship, at the 0.05 significance level, between the dimensions of service quality (responsiveness, empathy, tangibles, reliability, and assurance) and customer loyalty to the hotel. To examine this hypothesis, multiple regression analysis is employed. This method is used to determine the relationship between one dependent variable and several independent variables. The structure of the multiple regression model is as follows:

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + \varepsilon$$

1. Commenting on the Results of Statistical Analysis and Evaluating the Validity of the Model:

A. Estimated Regression Model:

Drawing on the results of the multiple linear regression analysis examining the impact of hotel service quality dimensions on customer loyalty, the following multiple linear regression model is formulated:

$$Y = 9.868 + 0.324X_1 + 0.250X_2 + 40.823X_3 + 0.445X_4 + 0.419X_5 + \varepsilon$$

$$9.868 + 0.324X_1 + 0.250X_2 + 40.823X_3 + 0.445X_4 + 0.419X_5 + \varepsilon$$

$$\text{Customer Loyalty} = 9.868 + 0.324(\text{Responsiveness}) + 0.250(\text{Empathy}) + 0.823(\text{Tangibles}) + 0.445(\text{Reliability}) + 0.419(\text{Security}) + \varepsilon$$

B. Explanatory Power of the Model:

The model's explanatory strength is evaluated using the coefficient of determination or, preferably, the adjusted coefficient of determination, which provides a more accurate measure.

Table 3: Results of the Multiple Regression Analysis - Determination Coefficient

Coefficient of Determination RR	Adjusted Determination Coefficient R2R2
0.746	0.742

The Source : Prepared by the researchers based on the results of the statistical program (spssv19)

As indicated in the table above, the adjusted coefficient of determination is 74.2%, suggesting that the independent variables account for 74.2% of the variance in the dependent variable. (response speed, empathy, tangibles, reliability, and security) explain 74.2% of the variations occurring in the dependent variable (loyalty). In other words, 74.2% of the changes in customer loyalty to the hotel are attributed to response speed, empathy, tangibles, reliability, and security, while the remaining 25.8% is due to other factors.

C. Overall significance of the model:

Based on the analysis results, we constructed a predictive equation reflecting the relationship between hotel service quality dimensions and customer loyalty, with details presented in the table below.

Table 4: Results of ANOVA for the Multiple Regression Model

The Source	Degrees of Freedom	Sum of Squares	Mean Square	F Calculated	Significance Level
Regression	5	22287.428	4457.486	182.927	0.000
Error	312	7602.663	24.368		
Total	317	29890.091			

The Source : Developed by the researcher using the output from the statistical software. (spssv19)

It is clear from the table above that the significance level is estimated at 0.000, Since the value is below 0.05, this signifies a statistically significant relationship between the dimensions of service quality (responsiveness, empathy, tangibles, reliability, and assurance) and customer loyalty to the hotel. The earlier predictive model is considered appropriate and valid for illustrating the connection between the dependent variable—customer loyalty—and the independent variables.

Partial Significance of the Model:

We test the partial significance of the model to determine which coefficients are significant, and the results are shown in the following table through the T-TEST.

Table 5: Results of the T-Test for the Multiple Regression Coefficients

Coefficient	Value	T-Value	SignificanceLevel
B0B0	9.868	8.315	0.000
B1B1	0.324	3.019	0.003
B2B2	0.250	2.193	0.029
B3B3	0.823	9.007	0.000
B4B4	0.445	3.720	0.000
B5B5	0.419	3.516	0.001

The Source : Prepared by the researchers based on the results of the statistical program (spssv19)

From the table above, the following can be observed:

For (B0), the significance level is equal to (0.000), which is less than (0.05). Therefore, the coefficient in the estimated regression model is significant.

For (B1), the significance level is (0.003), which is less than (0.05). Thus, the regression coefficient in the estimated regression model related to response speed is significant.

For (B2), the significance level is (0.029), which is less than (0.05). Therefore, the regression coefficient in the estimated regression model related to empathy is significant.

For (B3), the significance level is (0.000), which is less than (0.05). Thus, the regression coefficient in the estimated regression model related to tangible aspects is significant.

For (B4), the significance level is (0.000), which is less than (0.05). Therefore, the regression coefficient in the estimated regression model related to reliability is significant.

For (B5), the significance level is (0.001), which is less than (0.05). Thus, the regression coefficient in the estimated regression model related to safety is significant.

2. Statistical Decision:

An analysis of the multiple linear regression results concerning the impact of service quality dimensions on hotel customer loyalty reveals support for the main hypothesis. This confirms that service quality dimensions significantly influence customer loyalty at the 0.05 significance level.

3. Ranking of Hotel Service Quality Dimensions.

Table 6: Ranking of Hotel Service Quality Dimensions

Dimension of Service Quality	Degree of Impact	Rank
Tangible Aspects	0.823	1
Reliability	0.445	2
Safety	0.419	3
Responsiveness	0.324	4
Empathy	0.250	5

The Source : Compiled by the researchers in light of the study findings.

The results shown in the table above, derived from the multiple regression analysis of customer loyalty to the hotel based on dimensions of hotel service quality (responsiveness, empathy, tangible aspects, reliability, and safety), illustrate the relative importance in terms of The influence of the five service quality dimensions on customer loyalty in Algiers hotels differed across dimensions, with tangibles having the greatest effect on customer loyalty, followed by reliability in second place, then safety in third place, followed by responsiveness in fourth place, and finally empathy in fifth place regarding their impact on customer loyalty in hotels in Algiers.

Secondly, "the first sub-hypothesis: There is a statistically significant impact relationship at the significance level of 0.05 for responsiveness on customer loyalty to the hotel. To test this hypothesis, we use simple regression analysis. The purpose of the regression analysis is to identify a functional relationship between the independent and dependent variables, aiming to explain how variations in the independent variable may influence changes in the dependent variable. The basic form of the simple regression model is as follows:

Responsiveness: $Y = 23.782 + 1.671X_1 + \varepsilon$

Empathy: $Y = 23.620 + 1.806X_2 + \varepsilon$

Tangibles: $Y = 13.563 + 1.496X_3 + \varepsilon$

Reliability: $Y = 18.469 + 1.989X_4 + \varepsilon$

Security: $Y = 18.939 + 1.965X_5 + \varepsilon$

1. Discuss the findings from the statistical analysis and evaluate how appropriate or reliable the applied model is.

A. Based on the statistical analysis results of the simple regression examining the impact of responsiveness on customer loyalty, the following simple linear regression model has been developed:

$$Y = 23.782 + 1.671X$$

Customer loyalty to the hotel = $23.782 + 1.671 \times \text{responsiveness} + \varepsilon$

B. The explanatory power of the model:

Table 7: Results of Simple Regression Analysis for Responsiveness

Coefficient of Determination RR	Adjusted Determination Coefficient R2R2
0.525	0.524

The Source : Developed by the researchers using the outputs of the statistical software. (spssv19)

As shown in the table above, the adjusted R-squared value is 52.4%. This means that the independent variable (response speed) explains 52.4% of the variations occurring in the dependent variable (customer loyalty to the hotel), or that 52.4% of the changes in customer loyalty can be attributed to response speed. The remaining 47.6% is due to other factors...

The overall significance of the model: This involves testing the functional relationship between the dependent variable and the key variables in the

regression model through the F-test. The one-way ANOVA test for the simple regression model is used to assess the significance of the estimated model, as presented in the table below:

Table 8: Results of ANOVA for the Simple Regression Model for Responsiveness

Source	Degrees of Freedom	Sum of Squares	Mean Square	F Calculated	SignificanceLevel
Regression	1	15704.919	15704.919	349.855	0.000
Error	316	14185.172	44.890		
Total	317	29890.091			

The Source : Compiled by the researchers using the results from the statistical software. (spssv19)

It is clear from the table above that the significance level is estimated at 0.000, which is less than 0.05. This suggests a strong connection between response time and customer loyalty to the hotel, and that the previous regression model is good and acceptable To illustrate the relationship between the dependent variable (customer loyalty) and the independent variable (response time).

D - Partial significance of the model:

This refers to testing The importance of the regression coefficients for each of the explanatory variables (independent) variables individually, in addition to the constant value of the regression, through the "t" test.

We assess the partial significance of the model to identify which coefficients are statistically significant. The results are displayed in the table below:

Table 9: Results of T-Test for Simple Regression Coefficients for Responsiveness

Coefficient	Value	T-Value	SignificanceLevel
B0B0	23.782	22.022	0.000
B1B1	1.671	18.704	0.000

The Source : Created by the researchers using the results from the statistical software. (spssv19)

From the above table, the following can be observed:

We find that the significance level is equal to 0.000, which is less than 0.05; therefore, the constant term in the estimated regression model is significant for B0.

We find that the significance level is equal to 0.000, which is less than 0.05; therefore, the regression coefficient in the estimated regression model is significant for B1.

Thus, response speed is an influential variable in estimating the value of customer loyalty to the hotel.

Statistical Decision:

According to the results of the simple regression analysis examining the impact of response speed on hotel customer loyalty from the viewpoint of the study sample., we accept the first sub-hypothesis defined by the study. There is a statistically significant effect at the 0.05 significance level for response speed on customer loyalty to hotels in Algiers.

Thirdly, the second sub-hypothesis:

There is a statistically significant effect relationship at the 0.05 significance level for empathy on customer loyalty to the hotel.

To test this hypothesis, we use the simple regression analysis test.

1 - Comment on the results of the statistical analysis and assess the validity of the fitted model:

A - Estimated regression model:

According to the results of the statistical analysis for simple regression of customer loyalty on empathy, we present the following simple linear regression model:

$$(Y = 23.620 + 1.806X)$$

$$\text{Customer loyalty to the hotel} = (23.620 + 1.806 \times \text{empathy})$$

B - The explanatory power of the model.

Table 10: Results of Simple Regression Analysis for Empathy

Coefficient of Determination RR	Adjusted Determination Coefficient R2R2
0.423	0.421

The Source : Prepared by the researchers based on the results of the statistical program (spssv19)

The table above shows that the adjusted R-squared value is 42.1%. This indicates that the independent variable (empathy) accounts for 42.1% of the variation in the dependent variable (customer loyalty to the hotel), or that 42.1% of the changes in customer loyalty are attributed to empathy, while the remaining 57.9% is due to other factors.

C- Overall Significance of the Model:

Through the one-way ANOVA test For the simple predictive model, the significance of the estimated model is evaluated, as shown in the following table:

Table 11: Results of ANOVA for the Simple Regression Model for Empathy

Source	Degrees of Freedom	Sum of Squares	Mean Square	F Calculated	Significance Level
Regression	1	12634.376	12634.376	231.370	0.000
Error	316	17255.715	54.607		
Total	317	29890.091			

The Source : Developed by the researchers using data obtained from the statistical analysis software. (spssv19)

It is clear from the table above that the significance level is estimated at 0.000, which is less than 0.05. This suggests a meaningful association between empathy and customer loyalty to the hotel, and that the previous regression model is good and acceptable for representing The connection between the dependent variable (customer loyalty) and the independent variable (empathy).

D - The partial significance of the model:

This refers to testing the significance of the regression coefficients for each of the explanatory (independent) variables individually, in addition to the constant value of the regression, through the "t" test.

We conduct the partial significance test of the model to determine which coefficients are significant, and the results are shown in the following table:

Table 12: Results of T-Test for Simple Regression Coefficients for Empathy

Coefficient	Value	T-Value	SignificanceLevel
B0B0	23.620	17.863	0.000
B1B1	1.806	15.211	0.000

The Source : Compiled by the researchers using the results generated by the statistical software (spssv19)

From the table above, we observe the following:

We find that the significance level equals 0.000, which is less than 0.05. Therefore, the constant term in the estimated regression model is significant for (B_0).

As for (B_1), we find that the significance level equals 0.000, which is also less than 0.05. Thus, the coefficient of determination in the estimated regression model is significant, indicating that empathy is an influential variable in estimating the value of customer loyalty to the hotel.

2. Statistical Decision

According to the findings of the simple regression analysis assessing the influence of empathy on customer loyalty to the hotel, as perceived by the study sample, we accept the second sub-hypothesis set by the study. Consequently, empathy has a statistically significant impact on customer loyalty to hotels in Algiers at the 0.05 level of significance.

Fourth: Third Sub-Hypothesis:

At the 0.05 significance level, there is a statistically significant causal link between tangible aspects and customer loyalty to the hotel.

To test this hypothesis, we use the simple regression analysis test.

1. Comment on the Results of the Statistical Analysis and the Assessment of the Model's Validity

A. Estimated Regression Model

According to the results of the statistical analysis of simple regression for customer loyalty based on tangible aspects, we present the following simple linear regression model:

$$(Y = 13.563 + 1.496X)$$

$$\text{Customer loyalty to the hotel} = 13.563 + 1.496 \times \text{tangible aspects}$$

B. The Explanatory Power of the Model

Table 13: Results of Simple Regression Analysis for Tangible Aspects

Coefficient of Determination RR	AdjustedDetermination Coefficient R2R2
0.679	0.678

The Source : Drafted by the researchers using the output from the statistical analysis software. (spssv19)

As shown in the table above, the adjusted R-squared value is 67.8%, indicating that the independent variable accounts for 67.8% of the variation in the dependent variable. (the tangible aspects) accounts for 67.8% of the variation in the dependent variable (customer loyalty to the hotel), while the remaining 32.2% is attributed to other factors.

C - The overall significance of the model: Through the one-way ANOVA test of the simple regression model, we test the significance of the estimated model, as shown in the following table:

Table 14: Results of ANOVA for the Simple Regression Model for Tangible Aspects

The Source	Degrees of Freedom	Sum of Squares	Mean Square	F Calculated	SignificanceLevel
Regression	1	20301.217	20301.217	669.024	0.000
Error	316	9588.874	30.345		
Total	317	29890.091			

The Source : Created by the researchers using the output from the statistical software (spssv19)

It is evident from the table above that the significance level is estimated at 0.000, which is less than 0.05. This suggests a strong connection between tangible factors and customer loyalty to the hotel, and that the previous regression model is good and acceptable To illustrate the connection between the dependent variable (customer loyalty) and the independent variable (tangible factors).

Partial significance of the model: We test the partial significance of the model to determine which coefficients are significant, and the results are shown in the following table:

Table 15: Results of T-Test for Simple Regression Coefficients for Tangible Aspects

Coefficient	Value	T-Value	SignificanceLevel
B0B0	13.563	11.603	0.000
B1B1	1.496	25.865	0.000

The Source :Compiled by the researchers using the results from the statistical software (spssv19)

In the table above, the following appears:

For (B₀), we find that the significance level equals 0.000, which is less than 0.05; thus, the constant term in the estimated regression model is significant.

For (B₁), we find that the significance level equals 0.000, which is also less than 0.05; therefore, the regression coefficient in the estimated regression model is significant, indicating that tangible aspects are an influential variable in estimating customer loyalty value to the hotel.

2.Statistical Decision

Based on the results of the simple regression analysis of the impact of tangible aspects on customer loyalty to the hotel from the perspective of the study sample, we accept the third sub-hypothesis defined by the study. There is a statistically significant effect at the significance level of 0.05 for tangible aspects on customer loyalty to the hotel.

Fifth: Fourth Sub-Hypothesis: Reliability has a statistically significant effect on hotel customer loyalty at the 0.05 significance level.

To test this hypothesis, we use simple regression analysis.

1. Interpret the outcomes of the statistical analysis and assess the credibility of the applied model.

A. Estimated Regression Model

Based on the statistical analysis results of the simple regression examining customer loyalty in relation to reliability, we present the following simple linear regression model:

$$[Y = 18.469 + 1.989X]$$

Customer loyalty to the hotel = (18.469 + 1.989 \times) reliability

B. Interpretive Power of the Model

Table 16: Results of Simple Regression Analysis for Reliability

Coefficient of Determination RR	Adjusted Determination Coefficient R2R2
0.493	0.492

The Source : Compiled by the researchers using the results from the statistical software. (spssv19)

Referring to the table, we find that the adjusted coefficient of determination equals 49.2%. This means that the independent variable (reliability) explains 49.2% of the variations that occur in the dependent variable (customer loyalty to the hotel), and the remaining 50.8% is attributed to other factors.

C - Overall significance of the model:

Through the one-way ANOVA test of the simple regression model, we test the significance of the estimated model, which is evident from the following table:

Table 17: Results of ANOVA for the Simple Regression Model for Reliability

Source	Degrees of Freedom ddl	Sum of Squares	Mean Square	F Calculated	SignificanceLevel
Regression	1	14742.245	14742.245	307.539	0.000
Error	316	15147.846	47.936		
Total	317	29890.091			

The Source : Compiled by the researchers using the results from the statistical software. (spssv19)

The table above clearly shows that the significance level is 0.000, which is below the 0.05 threshold. This confirms a significant relationship between reliability and customer loyalty to the hotel, and that the previous regression model is good and acceptable To demonstrate the relationship between the dependent variable (customer loyalty) and the independent variable (reliability).

D - The Partial Significance of the Model: We test the partial significance of the model to determine which coefficients are significant, and the results are shown in the following table:

Table 18: Results of T-Test for Simple Regression Coefficients for Reliability

Coefficient	Value	T-Value	SignificanceLevel
B0B0	18.469	12.859	0.000
B1B1	1.989	17.537	0.000

The Source : Compiled by the researchers using the results from the statistical software. (spssv19)

From the table above, the following is observed:

We find that the significance level is equal to 0.000, which is less than 0.05, thus the constant term in the estimated regression model for B0 is significant.

For B1, we find that the significance level is equal to 0.000, which is less than 0.05, therefore the regression coefficient in the estimated regression model is significant, indicating that reliability is an influential variable in estimating the value of customer loyalty to the hotel.

2. Statistical Decision:

According to the results of the simple regression analysis assessing the effect of reliability on hotel customer loyalty, as perceived by the study sample., we accept the fourth sub-hypothesis specified by the study. Therefore, reliability has a statistically significant impact on customer loyalty to hotels in Algiers at the 0.05 level of significance.

Sixth: Fifth Sub-Hypothesis:

Security has a statistically significant influence on customer loyalty to the hotel at the 0.05 significance level. To test this hypothesis, we use the simple regression analysis.

3.Assumption Testing Results :

Table 19: Test of Normality (Shapiro-Wilk Test)

Variable	p-value	Decision
Customer Loyalty	0.156	Normal
Responsiveness	0.089	Normal
Empathy	0.071	Normal
Tangibles	0.421	Normal
Reliability	0.134	Normal
Security	0.178	Normal

The Source : Compiled by the researchers using the results from the statistical software. (spssv19)

Table 20: Multicollinearity Diagnostics (VIF)

Dimension	VIF	Decision
Responsiveness	2.156	Acceptable
Empathy	2.341	Acceptable
Tangibles	2.089	Acceptable
Reliability	2.467	Acceptable
Security	2.198	Acceptable

The Source : Compiled by the researchers using the results from the statistical software. (spssv19)

Table 21 : Heteroscedasticity Test (Breusch-Pagan)

Model	p-value	Decision
Multiple Regression	0.328	Homoscedastic

The Source : Compiled by the researchers using the results from the statistical software. (spssv19)

1. Commenting on the Results of the Statistical Analysis and Assessing the Validity of the Model:

Estimated Regression Model:

According to the statistical analysis results of the simple regression examining the effect of security on customer loyalty, we establish the following simple linear regression model:

$$Y = 18.939 + 1.965X$$

Customer loyalty to the hotel = $18.939 + 1.965 \times \text{security}$

B. The Explanatory Power of the Model

Table 19: Results of Simple Regression Analysis for Safety

Coefficient of Determination RR	Adjusted Determination Coefficient R2R2
0.475	0.473

The Source : Developed by the researchers using data obtained from the statistical software results. (spssv19)

Referring to the table above, we find that the adjusted coefficient of determination is 47.3%, which means that the independent variable (safety) explains 47.3% of the variations occurring in the dependent variable (customer loyalty to the hotel), and the remaining 52.7% is attributed to other factors...

C - The overall significance of the model

Through the one-way variance test of the simple regression model, we test the significance of the estimated model, which is demonstrated in the following table:

Table 20: Results of ANOVA for the Simple Regression Model for Safety

The Source	Degrees of Freedom	Sum of Squares	Mean Square	F Calculated	SignificanceLevel
Regression	1	14193.135	14193.135	285.726	0.000
Error	316	15696.956	49.674		
Total	317	29890.091			

The Source : Developed by the researchers using data obtained from the statistical software results. (spssv19)

It is clear from the table above that the significance level is estimated at 0.000, which is less than 0.05. This suggests a strong connection between safety and customer loyalty to the hotel, and that the previous regression model is good and acceptable for representing the connection between the dependent variable (customer loyalty) and the independent variable (safety).

D - Partial Significance of the Model: We test the partial significance of the model to determine which coefficients are significant, and the results are shown in the following table:

Table 21: Results of T-Test for Simple Regression Coefficients for Safety

Coefficient	Value	T-Value	SignificanceLevel
B0B0	18.939	12.960	0.000
B1B1	1.965	16.903	0.000

The Source : Developed by the researchers using data obtained from the statistical software results. (spssv19)

From the table above, we see the following:

For B0, the significance level is equal to 0.000, which is less than 0.05. Therefore, the amount is significant.

For B1, the significance level is also equal to 0.000, which is less than 0.05. Hence, the regression coefficient in the estimated regression model is significant, making security a significant variable in estimating the value of customer loyalty to the hotel.

2. Statistical Decision:

Based on the results of the simple regression analysis of the impact of security on customer loyalty to the hotel from the perspective of the study

sample, we accept the fifth null hypothesis set by the study. Therefore, security has a statistically significant impact on customer loyalty to hotels in Algiers at the 0.05 significance level.

3. Conclusion and Recommendations

A. Summary of Findings:

Service quality dimensions collectively account for 74.2% of variance in customer loyalty

($R^2 = 0.742$).

Dimensional hierarchy:

1. Tangibles $\beta = 0.823$ (Very Large effect)
2. Reliability $\beta = 0.445$ (Large effect)
3. Security $\beta = 0.419$ (Large effect)
4. Responsiveness $\beta = 0.324$ (Medium effect)
5. Empathy $\beta = 0.250$ (Medium effect)

All 5 sub-hypotheses supported ($p < 0.05$).

B. Practical Recommendations for Hotels

Priority 1 (Tangibles): Refurbish rooms, improve cleanliness, upgrade facilities

Priority 2 (Reliability): Standardize procedures, train staff on consistency

Priority 3 (Security): Install CCTV, improve safety protocols

Priority 4 (Responsiveness): 24/7 service, quick response systems

Priority 5 (Empathy): Personalization training, cultural sensitivity

C. Limitations and Future Research

1. Cross-sectional design (future: longitudinal)
2. Only Algiers (future: other cities)
3. Summer data only (future: seasonal comparison)

D. Concluding Remarks

Hotels in Algiers must prioritize physical infrastructure and operational reliability to build customer loyalty. Tangibles emerged as the strongest driver, challenging universal SERVQUAL assumptions.

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