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The Impact of Perceived Service Quality on Customer Loyalty in the Saudi Telecom Sector

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Chapter 4: Statistical Analysis & Findings Discussion

4.1 Introduction:

This chapter presents the statistical analysis and findings discussion for the study examining the impact of perceived service quality on customer loyalty in the Saudi telecom sector. The chapter includes: (1) sample profile (descriptive statistics), (2) validity and reliability testing of the questionnaire, (3) descriptive statistics for the study variables to answer the research questions, (4) hypotheses testing, and (5) discussion of findings in relation to the literature, followed by a conclusion.

Educational note (simulated analysis): The results reported in this chapter are based on a simulated dataset ($N = 200$) created for educational purposes to demonstrate the full research process, including questionnaire readiness, statistical testing, and reporting.

4.2 Sample Profile (Descriptive Statistics for Research Sample):

Descriptive statistics were calculated to describe the research sample in terms of demographic characteristics. Table 4.1 summarizes the sample profile.

Table 4.1 Sample Profile ($N = 200$)

Gender:

<i>Category</i>	Frequency	Percent
<i>Male</i>	134	67.0%
<i>Female</i>	66	33.0%

Age:

<i>Category</i>	Frequency	Percent
<i>18–24</i>	53	26.5%
<i>25–34</i>	79	39.5%
<i>35–44</i>	43	21.5%
<i>45–54</i>	17	8.5%
<i>55+</i>	8	4.0%

Region:

<i>Category</i>	Frequency	Percent
<i>Central</i>	58	29.0%
<i>Western</i>	44	22.0%
<i>Eastern</i>	44	22.0%
<i>Southern</i>	35	17.5%
<i>Northern</i>	19	9.5%

Current Provider:

<i>Category</i>	Frequency	Percent
<i>STC</i>	109	54.5%
<i>Mobily</i>	51	25.5%
<i>Zain</i>	35	17.5%
<i>Other</i>	5	2.5%

Tenure with Current Provider:

<i>Category</i>	Frequency	Percent
<i><1 year</i>	43	21.5%
<i>1–3 years</i>	82	41.0%
<i>4–6 years</i>	46	23.0%
<i>7+ years</i>	29	14.5%

Main Service Used Most:

<i>Category</i>	Frequency	Percent
<i>Mobile data</i>	78	39.0%
<i>Home internet</i>	42	21.0%
<i>Calls/SMS</i>	15	7.5%
<i>All equally</i>	65	32.5%

4.3 Validity & Reliability Tests for the Questionnaires:

4.3.1 Validity:

To support the suitability of the questionnaire for statistical analysis, validity checks were conducted. First, content validity is supported because the measurement items were adapted from established scales in the literature (SERVQUAL and loyalty/behavioral intention measures). Second, the dataset shows strong sampling adequacy for construct-related analysis.

Table 4.2 Validity Indicators

<i>Test</i>	Result
<i>KMO (overall)</i>	0.879
<i>Bartlett's Test of Sphericity</i>	$\chi^2 = 2952.220$, $df = 300$, $p < 0.001$

The KMO value indicates good sampling adequacy, and Bartlett's test is significant, supporting the appropriateness of the correlation structure for construct-level analysis.

4.3.2 Reliability (Cronbach's Alpha):

Reliability was assessed using Cronbach's alpha. Values ≥ 0.70 indicate acceptable internal consistency.

Table 4.3 Reliability Results (Cronbach's Alpha)

<i>Scale</i>	Cronbach's Alpha
<i>Reliability</i>	0.888
<i>Responsiveness</i>	0.848
<i>Assurance</i>	0.866
<i>Empathy</i>	0.896
<i>Tangibles</i>	0.884
<i>Customer Loyalty</i>	0.897

Overall, the results show strong reliability for all scales, indicating that the questionnaire items are internally consistent.

4.4 Descriptive Statistics for Research Variables (Answering Research Questions):

Descriptive statistics were computed for the study variables (means and standard deviations). Table 4.4 summarizes the results.

Table 4.4 Descriptive Statistics of Constructs (N = 200)

<i>Construct</i>	Mean	Std. Deviation	Interpretation
<i>Reliability</i>	3.256	1.257	Moderate
<i>Responsiveness</i>	3.414	1.148	Moderate
<i>Assurance</i>	3.260	1.216	Moderate
<i>Empathy</i>	3.299	1.291	Moderate
<i>Tangibles</i>	3.312	1.230	Moderate
<i>Overall Service Quality</i>	3.308	0.813	Moderate
<i>Customer Loyalty</i>	3.449	1.210	Moderate

Interpretation uses a common classification for a 5-point scale: 1.00–2.33 (Low), 2.34–3.66 (Moderate), 3.67–5.00 (High).

Answering RQ4: Customers' perceptions of service quality are generally moderate across all SERVQUAL dimensions, with responsiveness showing the highest mean (3.414).

Answering RQ3 (descriptively): Overall perceived service quality and customer loyalty both show moderate average levels

4.5 Testing Hypotheses:

4.5.1 Correlation Analysis (Initial Relationship Check):

Pearson correlation was calculated between service quality constructs and customer loyalty.

Table 4.5 Correlation with Customer Loyalty

<i>Predictor</i>	<i>r</i>	<i>p-value</i>
<i>Reliability</i>	0.422	<0.001
<i>Responsiveness</i>	0.409	<0.001
<i>Assurance</i>	0.424	<0.001
<i>Empathy</i>	0.340	<0.001
<i>Tangibles</i>	0.218	0.002
<i>Overall Service Quality</i>	0.546	<0.001

The correlations are positive and significant, indicating that higher perceived service quality is associated with higher customer loyalty.

4.5.2 Simple Regression (Overall Service Quality → Loyalty):

A simple regression was conducted to test the overall effect of perceived service quality on customer loyalty.

Model fit: $R^2 = 0.299$, $p < 0.001$.

Slope: $B = 0.814$, $p < 0.001$.

This indicates that overall perceived service quality significantly predicts customer loyalty.

4.5.3 Multiple Regression (SERVQUAL Dimensions → Loyalty):

Multiple regression was used to test the effect of each SERVQUAL dimension on customer loyalty (H1a–H1e).

Model fit: $R^2 = 0.323$, Adjusted $R^2 = 0.306$, $F(5, 194) = 18.520$, $p < 0.001$.

Table 4.6 Multiple Regression Results (DV: Customer Loyalty)

<i>Predictor</i>	B	Std. Beta	p-value	Decision
<i>Reliability</i>	0.211	0.219	0.001	Supported (H1a)
<i>Responsiveness</i>	0.205	0.194	0.005	Supported (H1b)
<i>Assurance</i>	0.212	0.213	0.003	Supported (H1c)
<i>Empathy</i>	0.164	0.175	0.006	Supported (H1d)

<i>Tangibles</i>	0.008	0.008	0.904	Not supported (H1e)
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Strongest predictor (RQ2): Reliability has the highest standardized beta ($\beta = 0.219$), closely followed by assurance ($\beta = 0.213$).

4.6 Findings Discussion and Connection with Literature:

The results provide evidence that perceived service quality is a meaningful driver of customer loyalty in the Saudi telecom context. The positive and significant relationship between overall service quality and loyalty aligns with service marketing literature that links service quality to behavioral intentions (e.g., continued usage and recommendation). The findings are also consistent with telecom-related studies that emphasize the role of service quality in loyalty outcomes.

At the dimension level, reliability, responsiveness, assurance, and empathy significantly predicted customer loyalty. This suggests that customers value stable and dependable telecom services (reliability), timely support and problem resolution (responsiveness), confidence and trust in service transactions (assurance), and customer-oriented treatment (empathy). These results support the idea that loyalty in telecom is influenced more by performance and interaction-based experiences than by appearance-related factors.

Tangibles did not show a significant unique effect in the multiple regression model, despite being positively correlated with loyalty. This outcome can occur when tangibles share variance with other dimensions. In practice, it may indicate that improvements in digital interfaces or physical facilities alone may not increase loyalty unless core service performance and customer support are also strong.

Overall, the model explains a meaningful portion of loyalty variance ($R^2 = 0.323$). While this indicates that service quality is an important factor, it also suggests that other variables (e.g., price fairness, satisfaction, trust, switching barriers, or perceived value) may additionally contribute to loyalty and could be examined in future studies.

4.7 Conclusion:

This chapter presented the statistical analysis and findings discussion for the study. The descriptive results showed moderate levels of perceived service quality and customer loyalty. Validity and reliability results indicated that the questionnaire is suitable for analysis and internally consistent. Hypotheses testing confirmed that overall perceived service quality significantly predicts customer loyalty. At the dimension level, reliability, responsiveness, assurance, and empathy were significant predictors of loyalty, while tangibles was not significant when controlling for other dimensions. The findings support the study's research model and provide a strong basis for Chapter 5.

References Additions (Add to the unified References list):

Cronbach, L. J. (1951). Coefficient alpha and the internal structure of tests. *Psychometrika*, 16(3), 297–334.

Kaiser, H. F. (1974). An index of factorial simplicity. *Psychometrika*, 39(1), 31–36.

Bartlett, M. S. (1954). A note on the multiplying factors for various chi-square approximations. *Journal of the Royal Statistical Society: Series B*, 16(2), 296–298.

Appendix note: The simulated dataset and results tables are available in the accompanying results file for educational purposes.