Service Quality Impact on Repurchase Intentions: A Pragmatic Airline Study

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Abstract
This study aims to explore the influence of Service Quality (SQ), Customer Satisfaction (CS) and Brand Image (BI) on airline passengers Repurchase Intentions (RI). Despite the aviation industry grappling with challenges such as increased operational costs and stringent regulations, maintaining high levels of SQ remains essential for customer retention. Using structural equation modelling (SEM), the study examined data collected from 423 participants who flew on foreign-based international airlines and arrived at Chennai International Airport. The study employed analysis of moment structures (AMOS) and the Statistical Package for Social Sciences (SPSS) in a descriptive research approach. The study's findings confirm that the SERVQUAL instrument's five dimensions align with established theory. SQ positively impacts RI, and partially mediated by CS. This study provides valuable insights for airlines to enhance SQ, meet customer expectations, and develop strategies for improving CS, increasing RI, and retaining customers. The study's exploration of this unique combination of factors contributes to addressing a significant research gap in the aviation sector.

Keywords: Service quality, Airline industry, Customer satisfaction, Brand image, SERVQUAL scale, Repurchase intention.

Introduction
Customer retention and acquisition represent fundamental objectives for service-based industries such as airlines. To effectively attain these objectives, maintaining top-notch service quality across all facets becomes imperative. Unhappy customers are unlikely to remain loyal to an airline, underscoring the airline industry's need to strike a balance between revenue growth and customer retention. Nevertheless, the aviation sector encounters distinctive challenges, including stringent regulations, fluctuating operating expenses, airfare variability, and economic instabilities, rendering it exceptionally volatile. Meeting and upholding quality standards have assumed an even greater level of importance in retaining customers, underscoring the pivotal role of SQ in this sector.

SQ is a key differentiator in the service sector, emphasizing the importance of evaluating the quality of services offered to customers. Given the critical relationship between airlines and their customers, existing service delivery standards need re-evaluation to ensure CS. To address these issues, systematic methods must be established to identify the factors influencing customers RI and their likelihood to choose the same airline for future flights. This study aims to empirically assess the impact of SQ on customers RI, exploring the correlations between SQ, CS, and RI. While various studies have examined SQ's influence on different businesses, this study is unique in its precise combination of variables within the aviation industry. As a result, it seeks to fill an existing research gap in this context.
Literature review

Travel demand is driven by the desire to explore new places, facilitated by transportation options (Graham et al., 2008). The transport sector, especially air travel, benefits from tourism-driven demand due to its ability to provide fast, long-distance travel (David, 2013). In the airline industry, customers seek high-quality services at reasonable prices (Jou et al., 2008). This emphasis on quality service is crucial for airlines to gain a competitive edge and ensure survival in a highly competitive business environment (Gilbert & Wong, 2003; Suhartanto & Noor, 2012). Chinomona (2004) highlights the importance of a customer's initial experience with a product or service in influencing repeat purchases.

High SQ positively impacts airline BI and reduces decision hesitancy, aiding customers in understanding airlines better (Boyd et al., 2010). Perceived SQ is evaluated by comparing customer experiences to their expectations. SQ enhances CS, leading to repeat purchases and referrals, thereby boosting revenue, return on investment, and market share (Barsky & Labagh, 1992; Stevens et al., 1995; Fornell, 1992). Satisfied customers are less price-sensitive and more likely to repurchase products, contributing to business growth (Ravishankar and Christopher, 2020). Engaging with service providers and brands fosters long-term customer relationships (Barwise and Meehan, 2004).

Organizations achieve a competitive edge, increased earnings, and business growth when customers frequently purchase their products or services (Singh & Khan, 2018). Zeithaml et al. (1996) emphasize that SQ is crucial in differentiating services and goods and gaining a competitive advantage. SQ is a significant marketing criterion for enhancing airlines' competitive advantage (Han, 2013). Sasser & Heskett (1994) argue that SQ directly impacts firm profitability and performance. Multiple studies have explored the influence of SQ on customer behaviour, firm performance, BI, customer loyalty, and CS, consistently finding positive effects across various service industries (Jou et al., 2008; Ostrowski et al., 1993; Pakdil & Aydin, 2007; Ali et al., 2015).

High-quality service is a critical marketing requirement for airlines, helping them establish a favourable corporate identity, build passenger confidence, and maintain customer loyalty (Parasuraman et al., 1991). SQ is vital for a company's survival and success (Gilbert & Wong, 2003). Satisfied customers are more likely to exhibit repeat purchase intentions (RI) (Nadiri et al., 2008). SQ evaluation is subjective due to the multifaceted nature of services, which depend on both service personnel and customers (Chou et al., 2011). Customer retention holds significant importance in the aviation market for increasing airline profits, leading researchers and professionals to focus on customer retention strategies (Mikulić & Prebežac, 2011). Empirical studies have shown that a 5% increase in customer retention can boost revenue by 25% to 95%, depending on the type of business (Reichheld, 2001).

The study focuses on examining the influence of variables such as SQ, CS, BI on passengers RI. To achieve this, it is crucial to consistently test and measure SQ using appropriate measurement scales. The SERVQUAL scale, developed to assess the gap between customer perceptions and expectations, is widely utilized for this purpose (Parasuraman, Zeithaml, & Berry, 1988). For example, Kozak et al. (2003) applied SERVQUAL to evaluate SQ and CS in the national airline of Northern Cyprus, while Hussain et al. (2014) identified SQ factors using the SERVQUAL framework. SERVQUAL encompasses five service components: Tangibles, representing the physical environment; Reliability, indicating the service provider's trustworthiness; Responsiveness, reflecting the organization's efficiency in assisting customers; Assurance, including elements that build customer confidence; and Empathy, highlighting the company's commitment to personalized services.

The relationship between SQ indicators and CS has been extensively explored using SERVQUAL dimensions. Given the link between SQ, CS, and productivity in the airline industry, numerous studies have been conducted in this domain. Drawing on existing literature, the researchers constructed a conceptual framework for this study (Figure 2.1), building on theoretical evidence to establish connections between the constructs. While previous studies have investigated various combinations of these constructs, this study uniquely explores the impact of FIA's SQ on CS, BI, and RI within the airline industry.
Hypothesis


Hypothesis 2 (H_2): Airline BI has a positive effect on RI, as supported by prior studies (Shafiee, M.M. & Sanayei; Ali & Shahin; Arash & Rezaei Dolatabadi; Hossein 2014; Park et al. 2005; Kim & Kim 2005; Nyadzayo and Khajehzadeh 2016; Ostrowski et al. 1993; Hussain et al. 2014; Saleem and Raja 2014).

Hypothesis 3 (H_3): Airline BI mediates the relationship between SQ and RI, as suggested by the indirect impact of BI on RI found in Wu et al. (2011).


Hypothesis 5 (H_5): CS mediates the relationship between SQ and RI in the airline industry, given the importance of CS in influencing RI, as noted in various studies (Cronin & Taylor 1992; Park et al. 2005).

Methodology

The research methodology includes a descriptive study focusing on airline SQ's influence on FIA's (Foreign International Airlines) RI. Data from collected samples were analysed using statistical tools like AMOS and SPSS.

Study Population

To determine the sample size for our research on airline SQ with an unknown population, we followed these steps: (1) We aimed for a margin of error of 0.05 (Chen & Liu, 2017); (2) We chose a confidence level of 95% (Hassan & Salem, 2021); (3) Given the uncertainty of the population standard deviation, we used a conservative estimate of 0.5 (Hair Jr., J. F., Black, W. C., Babin, B. J., & Anderson, R.E., 2019; Tabachnick & Fidell, 2019). Using the formula: n = (Z^2 * \sigma^2) / E^2

Where:
- n = sample size
- Z = Z-value for 95% confidence level (Z = 1.96)
- \sigma = estimated population standard deviation (0.5)
- E = desired margin of error (0.05)

Study calculated:
- n = (1.96^2 * 0.5^2) / (0.05^2)
- n = 385 (rounded up)

Therefore, assuming a population standard deviation of 0.5, a sample size of 385 is appropriate for our airline SQ study with an unknown population size, a 95% confidence level, and a 5% margin of error. We distributed 500 questionnaires, and 423 FIA passengers completed the survey, including 263 men and 160 women.

Sampling Design

The study focused on individual travellers arriving at Chennai International Airport as the sampling unit. The sampling approach used for this study is a convenience sampling method.
Data Collection

Data collection for assessing RI was conducted through a survey method using passenger data from foreign airlines at Chennai International Airport. Researchers were present at the airport six days a week, from 8:00 p.m. to 12:00 a.m., aligning with flight schedules. Prior to the survey, verbal and written consent was obtained from respondents. A structured questionnaire was employed to gather data for the study, ensuring data confidentiality and intended use only. Section A of the questionnaire included questions related to inflight SQ dimensions such as tangibility, reliability, responsiveness, assurance, and empathy. Section B focused on the airline's BI, while Section C addressed CS. RI was assessed in Section D. Demographic information, covering gender, age, marital status, income range, category, airline usage, travel reason, purpose, and preferred flight class, was collected in Section E. Responses were rated on a five-point Likert scale.

Data Analysis

The data underwent statistical analysis using SPSS 26 and AMOS version 26. To validate the measurement model, both Exploratory Factor Analysis (EFA) in SPSS and Confirmatory Factor Analysis (CFA) in AMOS were conducted. Following this, Structural Equation Modelling (SEM) in AMOS was utilized to test hypotheses and explore relationships between variables. Numerical variables were utilized for computing means and standard deviations, while categorical data were presented in percentages and frequencies. Confirmatory factor analysis was performed to ensure discriminant validity, dimensionality, and questionnaire convergence. Pearson's correlation coefficient was employed to investigate correlations among different constructs using the correlation matrix. The relationships between latent constructs were elucidated through structural equation modelling. The regression model was assessed with 95% confidence intervals, and statistical significance was determined at P<0.05.

Results and Discussion

Referring to the presented results and discussions, the study systematically assessed the influence of airline SQ on CS, BI and RI in line with the research methodology. Additionally, it delved into passenger satisfaction levels and their preferences concerning airlines, which exert a significant impact on subsequent repurchase decisions. These findings hold substantial relevance for both academic researchers and industry practitioners.

Demographic Profile

The demographic profile, plays a crucial role in measuring various research variables. Among the respondents, 62.2% were male, while 37.8% were female. In the age group of 31 to 40, 26% of respondents fell. Marital status indicated that 70.9% of participants were married. A significant 44.7% reported an income above 15 lakhs. The majority, 47.8%, were employed. Among those surveyed, 65.7% had travelled less than five times in the past 12 months, with 48.2% traveling for business purposes. Economy class was the preferred travel class for the highest percentage of respondents, at 61.9%.

Reliability Test

Table 1.1 shows that 36 items on the scale in the current study had a Cronbach's alpha of 0.808, indicating that the items were generally consistent.

<table>
<thead>
<tr>
<th>Cronbach’s Alpha</th>
<th>Number of items</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.808</td>
<td>36</td>
</tr>
</tbody>
</table>

Source: Prepared by the authors (2023)
Tolerance Value

Tolerance values for all observed values ranging from 0.826 to 0.992 are given in Table 1.2.

<table>
<thead>
<tr>
<th>Independent Variables</th>
<th>Tolerance</th>
<th>VIF</th>
</tr>
</thead>
<tbody>
<tr>
<td>Quality of in-flight services; tangibility</td>
<td>0.863</td>
<td>1.159</td>
</tr>
<tr>
<td>Quality of in-flight services; reliability</td>
<td>0.837</td>
<td>1.195</td>
</tr>
<tr>
<td>Quality of in-flight services; responsiveness</td>
<td>0.895</td>
<td>1.118</td>
</tr>
<tr>
<td>Quality of in-flight services; assurance</td>
<td>0.826</td>
<td>1.210</td>
</tr>
<tr>
<td>Quality of in-flight services; empathy</td>
<td>0.951</td>
<td>1.051</td>
</tr>
<tr>
<td>BI</td>
<td>0.992</td>
<td>1.008</td>
</tr>
<tr>
<td>CS</td>
<td>0.861</td>
<td>1.161</td>
</tr>
</tbody>
</table>

Dependent variable: RI

Source: Prepared by the authors (2023)

Exploratory Factor Analysis (EFA)

EFA, conducted in SPSS version 26 with 423 cases, is a technique for assessing questionnaire question scales. To ensure its validity, the KMO value must exceed 0.7, and Bartlett's test of sphericity should be significant at $p < 0.001$. The observed similarity values ranged from 0.503 to 0.945. EFA yielded eight factors from the 36-item scale, explaining a substantial 74.027% of the variance, surpassing the 70% threshold.

Confirmatory Factor Analysis (CFA)

CFA is based on the elements identified through EFA. Using AMOS graphics, CFA was conducted on the 36 items, employing the maximum likelihood extraction method. Ideally, standardized loading values should be 0.5 or higher. The Average Variance Extracted (AVE) values for the eight constructs ranged from 0.579 to 0.768.

Interpretation of Factors

The internal consistency among the variable items, which measures internal reliability, was assessed using Cronbach's alpha. The values indicate the degree of correlation between the overall score and each variable item. It is important for Cronbach's alpha to exceed 0.50, and in this case, it ranged from 0.842 to 0.920 for individual constructs.

Structural Equation Modelling

Composite reliability, with values exceeding 0.70 (ranging from 0.848 to 0.928), assessed the internal consistency of constructs. The measurement model's evaluation included various goodness-of-fit indices, such as Chi Square, degrees of freedom, DF/CMIN ratio, RMR, GFI, AGFI, and RMSEA (Chi Square = 2261.282). The study examined the impact of passengers' perceptions of RI and airline SQ. SEM was used to model interactions among variables, including indirect effects and directional predictions. AMOS was employed to predict standardized route coefficients. The structural framework is illustrated in Figure 2.1.
The study assessed the influence of passengers' perceptions of RI and their satisfaction with airline SQ by employing structural equation modelling (SEM). The fit indices for the structural model are presented in Table 1.3.

### Table 1.3: Model fit indices

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Criteria</th>
<th>Measurement Model</th>
<th>Structural Model</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chi-square</td>
<td>-</td>
<td>2261.282</td>
<td>2348.318</td>
</tr>
<tr>
<td>Degrees of freedom</td>
<td>-</td>
<td>566</td>
<td>584</td>
</tr>
<tr>
<td>DF/CMIN</td>
<td>Less than 3</td>
<td>2.802</td>
<td>2.821</td>
</tr>
<tr>
<td>Root Mean Square Residual</td>
<td>0.05-0.10</td>
<td>0.08</td>
<td>0.09</td>
</tr>
<tr>
<td>RMSEA</td>
<td>0.05-0.10</td>
<td>0.08</td>
<td>0.08</td>
</tr>
<tr>
<td>Goodness of Fit</td>
<td>&gt; 0.80</td>
<td>0.805</td>
<td>0.800</td>
</tr>
<tr>
<td>Normed Fit Index</td>
<td>&gt; 0.80</td>
<td>0.840</td>
<td>0.834</td>
</tr>
<tr>
<td>Comparative Fit Index</td>
<td>&gt; 0.80</td>
<td>0.875</td>
<td>0.870</td>
</tr>
<tr>
<td>Relative Fit Index</td>
<td>&gt; 0.80</td>
<td>0.822</td>
<td>0.821</td>
</tr>
<tr>
<td>Tucker-Lewis Coefficient</td>
<td>&gt; 0.80</td>
<td>0.861</td>
<td>0.860</td>
</tr>
<tr>
<td>Adjusted GFI</td>
<td>&gt; 0.80</td>
<td>0.800</td>
<td>0.800</td>
</tr>
</tbody>
</table>

Source: Prepared by the authors (2023)

### Testing of Hypotheses

Hypothesis testing was conducted using standardized path coefficient estimates, critical ratios, and standard errors. A suggested critical ratio (C.R.) value exceeding +1.96 in the test statistic signifies statistical significance. The outcomes of hypothesis testing are presented in Table 1.4.

### Table 1.4: Hypothesis Testing

<table>
<thead>
<tr>
<th>Hypothesis</th>
<th>Predicted Relationship</th>
<th>β</th>
<th>S. E</th>
<th>C.R</th>
<th>p-value</th>
<th>Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>H₁</td>
<td>SQ → RI</td>
<td>-0.785</td>
<td>1.821</td>
<td>-2.531</td>
<td>0.011</td>
<td>Supported</td>
</tr>
<tr>
<td>H₂</td>
<td>BI → RI</td>
<td>0.003</td>
<td>0.041</td>
<td>0.062</td>
<td>0.951</td>
<td>Not Supported</td>
</tr>
<tr>
<td>H₃</td>
<td>CS → RI</td>
<td>-0.126</td>
<td>0.086</td>
<td>-1.464</td>
<td>0.043</td>
<td>Supported</td>
</tr>
</tbody>
</table>

Source: Prepared by the authors (2023)
H1: There is a significant negative association between SQ and RI, with a beta coefficient of -0.785 (p-value = 0.011). Therefore, RI is significantly linked to SQ.

H2: H2 proposed a positive and significant association between airline BI and RI but is not supported by a beta coefficient of 0.003 (p-value = 0.951). Hence, there is no significant relationship between airline BI and RI.

H3: H3 explored the positive and significant relationship between RI and CS, which is supported by a beta coefficient of -0.126 (p-value = 0.043). Thus, RI is significantly associated with CS.

H4 and H5: These hypotheses involve investigating how one variable influence another through a mediating variable or understanding established relationships within an underlying system or process. Further details about the specific relationships and results would be needed to provide a concise summary.

In summary, H1 and H3 are supported by the data, indicating significant associations between SQ and RI, as well as RI and CS. However, H2 is not supported, suggesting no significant relationship between airline BI and RI. H4 and H5 require additional information for a concise summary, as they involve complex relationships and underlying processes.

Table 1.5 indicates that there is no evidence of mediation by airline BI between SQ and RI.

<table>
<thead>
<tr>
<th>Path</th>
<th>β</th>
<th>S.E</th>
<th>C.R</th>
<th>p-value</th>
<th>Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>SQ → BI</td>
<td>-0.01</td>
<td>0.113</td>
<td>-0.120</td>
<td>0.905</td>
<td>Not Supported</td>
</tr>
<tr>
<td>BI → RI</td>
<td>0.020</td>
<td>0.036</td>
<td>0.396</td>
<td>0.692</td>
<td>Not Supported</td>
</tr>
<tr>
<td>SQ → RI</td>
<td>0.203</td>
<td>0.085</td>
<td>4.263</td>
<td>0.000***</td>
<td>Supported</td>
</tr>
</tbody>
</table>

Source: Prepared by the authors (2023)

Table 1.6 establishes the presence of a mediating effect involving CS between SQ and RI.

<table>
<thead>
<tr>
<th>Path</th>
<th>β</th>
<th>S.E</th>
<th>C.R</th>
<th>p-value</th>
<th>Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>SQ → CS</td>
<td>0.040</td>
<td>0.088</td>
<td>0.822</td>
<td>0.411</td>
<td>Not Supported</td>
</tr>
<tr>
<td>CS → RI</td>
<td>0.135</td>
<td>0.047</td>
<td>2.853</td>
<td>0.004</td>
<td>Supported</td>
</tr>
<tr>
<td>SQ → RI</td>
<td>0.200</td>
<td>0.084</td>
<td>4.183</td>
<td>0.000***</td>
<td>Supported</td>
</tr>
</tbody>
</table>

Source: Prepared by the authors (2023)

Note: β - Standardized Estimate; S.E - Standard Error; CR- Critical Ratio

Hypothesis (H4) investigated a positive and significant association between SQ and RI. The path model reveals that SQ has a negative relationship with airline BI, while it has positive relationships with both airline BI and RI. Therefore, there is no mediation effect of airline BI on the relationship between SQ and RI.

Hypothesis (H5) explored a positive and significant association between SQ and RI. According to the path model, SQ has a positive relationship with CS and RI. Consequently, there is a mediation effect of CS on the relationship between SQ and RI.

Conclusion

This study addresses the critical challenge facing the airline industry: the pursuit of increased revenue and customer retention amid fierce global competition. It places particular emphasis on passengers' perceptions of SQ and their impact on RI. The study conducted an empirical analysis using data from 423 respondents at Chennai
International Airport, employing SPSS and AMOS software for confirmatory and exploratory factor analyses (CFA and EFA) to validate the measurement model and structural equation modeling (SEM) to test research hypotheses. The significant findings of the study confirm a strong positive relationship between SQ and RI (beta coefficient -0.785, p-value = 0.011), underscoring the influential role of SQ. However, the study did not find a significant relationship between airline BI and RI (beta coefficient 0.003, p-value = 0.951). Importantly, RI demonstrated a significant association with CS (beta coefficient -0.126, p-value = 0.043). Notably, airline BI did not mediate between SQ and RI, whereas CS emerged as a mediator between SQ and RI, as SQ positively influenced CS and, in turn, RI.

In conclusion, this study offers valuable insights for airline managers aiming to prioritize SQ and enhance CS to foster RI and improve customer retention. Elements like tangible aspects such as facilities and employee appearance play a crucial role in evaluating in-flight SQ. The study’s contributions extend to both the airline industry and academic research. However, a notable limitation of this study is its exclusive focus on foreign airlines (FIA), excluding national carriers. This limitation suggests that the findings may not be universally applicable to all airlines, highlighting the necessity for further research that encompasses national airlines. Future studies could broaden their scope by incorporating additional factors such as trust, word of mouth, and brand loyalty to better predict passengers' future purchase intentions, especially among domestic travelers.

References


