

EVALUATING AIRPORT AND AIRLINE SERVICE QUALITY: A STRUCTURAL EQUATION MODELING APPROACH

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ABSTRACT

A new scale for assessing traveler experience in air trips is proposed. Here, passenger experience is measured through travelers' perception of service quality, considering it as a chain of services. The new scale is called air travel service quality (ATSQ). It considers three service quality stages: departure airport service, airline service, and arrival airport service.

This research applies the ATSQ scale to examine service quality in domestic travels in a Colombian context. Given that traveler's experience plays a crucial role in determining passenger satisfaction, a structural equation model was applied to examine the relationship between service quality stages, customer satisfaction, and behavioral intentions. Adding the passengers' perception of the arrival airport to the integrated service quality measurement is considering one of the main contributions of this study. The finding of this research confirmed that all three stages of air travel service have a significant, positive effect on passenger satisfaction. The scale found in this research should provide useful information for developing effective operational and marketing strategies for the air travel market. In this way, airports and airlines could better understand how traveler's perception of service quality may affect each choice related to which departure airport, airline, and arrival airport combination to choose from.

1. INTRODUCTION

In the air transportation industry, airlines and airports enjoy high revenues when traveler satisfaction increases because when travelers are satisfied, they are more likely to repeat their purchase. Airports and airlines recognize the necessity of studying traveler's satisfaction and identifying service quality indicators for improving the travel experience (Bogicevic, Yang, Bilgihan, & Bujisic, 2013). Some studies of airlines and the airport industry have found a significant relationship between perceived service quality and passengers' satisfaction (Park, 2010; Hussain, Al Nasser & Hussain, 2014; Al-Refaie et al., 2014; Prentice & Kadan, 2019).

Therefore, in the air transportation market, traveler's satisfaction plays an essential role in assessing service quality and its influence on loyalty (Park, Robertson, & Wu, 2005).

Different instruments have been developed to assess service quality. Parasuraman et al. (1988) proposed a model to measure service quality that included five dimensions known as tangibles, reliability, responsiveness, assurance, and empathy. The instrument was called the SERVQUAL scale. Cronin & Taylor (1992) instead developed the SERVPERF scale, which measures service quality based on customer's perceptions. Cronin & Taylor (1994) found that the SERVPERF instrument explains more of the overall variance in the measure of service quality than the SERVQUAL scale.

Bezerra & Gomes (2015) suggested that future works should be focused on integrated service quality, by including dimensions related to airline and airport service quality because they share a significant area of overlap. Airports act as the first and last contact point for air travelers, and Kirk et al. (2014) found that negative airport experience can influence future travel plans. Ekiz, Hussain, & Bavik (2006) tried to integrate service quality in two stages and developed a new instrument called AIRQUAL scale. This instrument measures airline service quality perception, by including a dimension related to the departure airport. AIRQUAL identified five dimensions of service quality: airline tangibles, terminal tangibles, personnel, empathy, and image. AIRQUAL scale has been widely applied to national and international travels (Nadiri et al., 2008; Suki, 2014; Ali, Lal Dey & Filieri, 2015; Alotaibi, 2015; Mohamed & Rani, 2016; Farooq et al., 2018).

Despite AIRQUAL applications in the air transportation industry, it might not be suitable for measuring overall traveler's experience through travel service quality measurement due to the different features of service quality related to the airline, departure airport, and arrival airport. This research attempts to extend previous works by incorporating traveler's experience with arrival airport into the perceived service quality measurement of the air travel.

This research contributes to the air travel experience literature in three aspects: first, by adding the traveler's perception of arrival airport to the integral service quality measurement. Second, by developing an assessment tool for evaluating traveler's experience in air travel, called here air travel service quality (ATSQ) instrument (Munoz, Laniado, & Córdoba, 2019). Finally, by investigating the relationship between service quality in its different service stages and satisfaction, as well as the effect of traveler's satisfaction on future intention.

2. HYPOTHESIS DEVELOPMENT

This study proposes a new instrument that measures air traveler's experience through passenger's perceptions of service quality of their recent air travel. The proposed theoretical model consists of dimensions related to the departure airport, airline, and arrival airport. This study proposes following six hypotheses:

H1: Perceived quality related to airline tangibles will have a significant positive effect on traveler's satisfaction.

H2: Perceived quality related to airline staff will have a significant positive effect on traveler's satisfaction

H3: Perceived airline empathy will have a significant positive effect on traveler's satisfaction.

H4: Perceived quality related to the departure airport will have a significant positive effect on traveler's satisfaction.

H5: Perceived quality related to the arrival airport will have a significant positive effect on traveler's satisfaction.

H6: Traveler's satisfaction will have a significant positive effect on brand loyalty.

3. RESEARCH INSTRUMENT AND DATA ANALYSIS

The objective of this study is to measure air traveler's experience through service quality perception, by focusing on the Colombian domestic flights. The survey questions were based on air traveler's service quality perceptions. The questionnaire was divided into five sections. The first and second sections contained demographic and the latest travel information, respectively. Third survey component had questions about service quality perception; some questions were based on the AIRQUAL scale (Ekiz, Hussain & Bavik, 2006).

The traveler's satisfaction model in air transportation was assessed, by using the structural equation modeling SEM with latent variables. The aim of constructing an SEM was to test whether the five dimensions of air transportation service quality have a significant influence on traveler's satisfaction. Besides, the supposition of whether traveler's satisfaction leads to traveler's loyalty was assessed.

The confirmatory factor analysis (CFA) was performed to confirm the measurement model and to assess the degree to which the measured variables represent the number of constructs. By using a maximum likelihood estimation method, 58 items were subjected to a CFA with a seven-factor measurement model. The results of the CFA in Table 1 show that composite reliability (CR) ranged from 0.85 to 0.97. These values were all greater than the recommended threshold of 0.70 suggested by Hair et al. (2014), implying that multiple items for each factor are internally consistent and reliable.

The average variance extracted (AVE) was used to assess convergent validity. AVE ranged from 0.53 to 0.82, exceeding the recommended threshold value of 0.5 (Hair et al., 2014), which means that more than one-half of the variances observed in the items were explained by their hypothesized constructs. Therefore, the data has good convergent validity.

Statements	Composite reliability (CR)	Average Variance Extracted (AVE)
Airline Tangibles	0.95	0.76
Airline Staff	0.97	0.78
Airline Empathy	0.85	0.53
Departure Airport Tangibles	0.96	0.61
Arrival Airport Tangibles	0.96	0.66
Satisfaction	0.92	0.62
Loyalty	0.95	0.82
<i>Goodness-of-fit: $\chi^2/df = 2.7$, CFI = 0.9, RMSEA = 0.075</i>		

Tabla 1 – Confirmatory factor analysis results

A detailed examination of Table 2 shows that airline tangibles ($\beta=0.127$; $t\text{-value}=2.581$; $p<0.05$) have a significant positive effect on traveler's satisfaction. Thus, hypothesis H1 is supported. Table 2 also reveals that airline staff ($\beta=0.166$; $t\text{-value}=3.427$; $p<0.001$) have a significant effect on traveler's satisfaction, which means that H2 is supported. Similarly, the findings of this study also support H3, which proposes the significant influence of airline empathy ($\beta=0.480$; $t\text{-value}=8.455$; $p<0.001$) on traveler's satisfaction. Furthermore, a high perception of service quality related to departure airport tangibles has a significant positive effect on traveler's satisfaction ($\beta=0.203$; $t\text{-value}=4.088$; $p<0.001$), supporting hypothesis H4. It can also be noted that the arrival airport tangibles has a significant relationship with traveler satisfaction ($\beta=0.237$; $t\text{-value}=4.818$; $p<0.001$). Lastly, H6 hypothesized that there is a relationship between satisfaction and traveler loyalty. The results shown in Table 2 support this hypothesis ($\beta=0.786$; $t\text{-value}=17.89$; $p<0.001$).

Hypothesis	Endogenous variable	Exogenous variable	Standardized estimate	t-value	Result
H1	Satisfaction	Airline Tangibles	0.127	2.581**	Supported
H2	Satisfaction	Airline Staff	0.166	3.427*	Supported
H3	Satisfaction	Airline Empathy	0.480	8.455*	Supported
H4	Satisfaction	Departure Airport Tangibles	0.203	4.088*	Supported
H5	Satisfaction	Arrival Airport Tangibles	0.237	4.818*	Supported
H6	Loyalty	Satisfaction	0.786	17.890*	Supported
<i>Notes: *$p<0.001$; **$p<0.05$</i>					

Tabla 2 – Standardized estimates of the air travel experience model

4. DISCUSSION AND CONCLUSION

Empirical outputs via SEM demonstrated that service quality perception is a multidimensional construct, which includes service quality of departure airport, airline service quality, and service quality of arrival airport. The scale developed here is both reliable and valid. Therefore, this study contributes to the literature on air traveler's experience assessment through the validation of the ATSQ instrument (Munoz et al., 2019). This research extends on the current air traveler's experience literature to examine the effect of service quality on traveler's satisfaction and, in turn, the relationship between traveler's satisfaction and traveler's behavioral intention.

All the hypotheses formulated in this study were tested. One of the main results is that traveler's satisfaction is affected by service quality dimensions, here called airline tangibles, airline staff, airline empathy, departure airport tangibles, and arrival airport tangibles. The results of this paper indicate that departure airport tangibles, arrival airport tangibles, and airline empathy factors are the most influential constructs in terms of traveler's satisfaction. In this regard, this research finding coincides with previous studies (Nadiri et al., 2008; Mohamed and Rani, 2016; Farooq et al., 2018) due to fact that the departure airport tangibles significantly affect traveler's satisfaction.

The present study also supports previous empirical findings, where the traveler's satisfaction is an important prerequisite of traveler's loyalty (Gures et al., 2014; Hussain et al., 2014; Leong et al., 2015; Kos Koklic et al., 2017). Therefore, this study contributes to traveler's loyalty literature due to the fact that loyalty is characterized by repurchase intention and word-of-mouth communications. Hence, airline and airport management should try to keep service quality at a high level in order to increase traveler's satisfaction.

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