Customer Satisfaction of Service Quality: A Comparative Study between Low-Cost and Full-Service Airlines

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Abstract. This study investigates the prerequisites and results of customer satisfaction among types of airlines in the airline industry. It determines how service quality of airlines (e.g. tangibility, responsiveness, personalization, and connectivity) affects customer satisfaction and whether there is a relationship between customer satisfaction and the customers' intention to repurchase. It also verifies the moderating effect of low-cost airlines and large airlines in the causal relationship between airline service quality and customer satisfaction. Based on the survey conducted, tangibility, responsiveness, personalization, and connectivity all had a significant positive effect on customer satisfaction. In addition, it showed that customer satisfaction had a positive effect on the intention to repurchase. The result of analyzing the control effect of low-cost carriers and full-service carriers showed that the responsiveness and personalization factors of low-cost carriers had a greater effect on customer satisfaction than that of full-service carriers

Keywords: Customer satisfaction, Quality of service, Low-cost carriers, Full-service carriers, Intention to repurchase.

1. Introduction

In the recent years, the number of private low-cost carriers that emphasizes low prices for attracting passengers has increased significantly. Today's airlines face a variety of challenges, such as reducing costs, managing demand fluctuations, and meeting quality requirements. In addition to these issues, fierce competition in the global aviation industry has reinforced the importance of customer perception of

service quality. Many studies showed that consumer perception of service quality was dependent on the airline market share, customer satisfaction, revenue, positive word-of-mouth, and customer retention (Forgas, Moliner, Sánchez, & Palau, 2010). In this situation where competition between low-cost airlines and full- service carriers is intensifies voices have been raised to understand the in-flight signaling service that guides passenger-airline relationships (Loureiro & Fialho, 2016). Low-cost carriers offer limited services at cheap and simplified rates, while large airlines focus on providing a variety of in-flight services at different service classes. Akamavi et al. (2015) argued that price is not the decisive factor in customer loyalty on low-cost airlines.

This study will contribute to existing literature in many ways. First, it examines the moderating role of airline types by comparing the proposed theoretical models for customers of low-cost carriers and full-service carriers. Second, it contributes to a better understanding of the relationship between satisfaction and behavior by examining the airline types and interactions. Finally, it provides a rigorous statistical method for evaluating the degree of generalization of potential profile solutions for the two different types of airlines using multi-group analysis.

Quality of service refers to the overall impression of the customer on the relative inferiority or superiority of the organization and its service. Parasuraman et al. (1988) defined the tangibility of quality of service as the external clue for evaluating the service to the extent that it judges physical facilities or equipment, employee appearance, communication tools, and other services. The said study also defined responsiveness as the ability to respond quickly to customer needs and actively provide services, and the willingness to help customers voluntarily and provide immediate service to customers. Dholakia et al. (200) defined personalization as providing products, information, and services tailored to the needs of users. They also referred to connectivity as the feeling of connecting to a world outside a specific site.

Airlines that offer more services have higher customer satisfaction and therefore more passengers than airlines with dissatisfied customers (Khan & Khan, 2013). The AIRQUAL model is tailored to the details of the aviation industry and measures the quality of service according to five dimensions: aircraft tangential, terminal tangential, personnel, empathy, and image. Kim and Lee (2011) identified several dimensions of service quality that affect customer satisfaction namely tangency, reliability, reactivity, certainty, and empathy.Customer satisfaction is an indicator of repeated purchases and word-of-mouth. These studies demonstrate that more satisfied customers contribute to higher company profits (Bernhardt, Donthu, & Kennett, 2000). Other documents provide mixed evidence of the relationship between quality of service, customer satisfaction and behavioral intentions in the context of low-cost and large airlines. Loureiro and Fialho (2016) argued that it was impossible for low-cost carriers and full-service carriers to find significant

differences in customer satisfaction across different airline types. They argued that the competition caused large airlines to lower prices and provide basic services similar to low-cost carriers. Likewise, Leong et al. (2015) said that it was not possible to discern the causal relationship between the low-cost airline context and the large airline context. However, many studies show differences in the strength of the relationship between the concepts discussed for the two airline types. Suhartanto and Norr (2012) show that customers traveling with large airlines are more satisfied than customers using low-cost airlines. Baker (2013) found that low-cost airlines perceive service quality higher. In connection with the price, Rajaguru (2016) said that while monetary value largely satisfies both airline types, service quality plays an important role in leading satisfaction and intention to act for all service airlines. According to a study by Koklic et al. (2017), the airline type verified not only the relationship between service quality and customer satisfaction, but also the relationship between customer satisfaction and both repurchase and referral. This research proposes a conceptual model based on the concepts of the previous studies.

Study Objective. The specific research questions under investigation are as follows.

First, will the factors of an airline's quality of service (e.g. formation, responsiveness, personalization, connectivity) have a positive impact on customer satisfaction?

Second, will the effect of the factors of airline's service quality on customer satisfaction have a difference by airline type?

2. Research Method

2.1. Research Subject

To verify the hypothesis of the study, an online survey among services of airline companies was conducted. The samples were selected using the population proportional allocation method based on region and age. The online questionnaires were answered by 411 subjects who were previous clients of airline services. The gender composition of all respondents consists of 06 males (74.5%) and 105 females (25.5%), where 20.7% are in their 20s, 37.2% in their 30s, 29.4% in their 40s, and 12.7% in their 50s or older. The average monthly income was less than 2 million won, accounting for 11.4% of the total, 69.9% for 200–7 million won, and 18.7% for more than 7 million won. The respondents of low-cost airlines were 150 males (73.2%) and 55 females (26.8%), where 11.7% has an average monthly income of less than 2 million won, 68.3% has 200–70 million won, and 20% has more than 7 million won. On the other hand, the respondents of large airlines were 156 males (75.7%) and 50 females (24.3%), where 11.2% has a monthly average income of less than 2 million won, 71.4% has 2-7 million won, and 17.5% has 7 million won or more.

2.2. Research Hypothesis

Many studies have demonstrated that service quality increases customer satisfaction. Among the main factors of quality service, tangibility appeared as an external factor, and responsiveness, personalization, and connectivity were shown as human factors. Nadiri et al. (2008) found that external and human contacts are the most important driving force for satisfaction. Some studies have shown that employees are a key component of customer satisfaction in the airline industry (Akamavi et al., 2015). Airline employees need to understand and identify passenger needs to improve service satisfaction (Ekinci, Dawes, & Massey, 2008). From these the above studies, the first hypothesis was established.

H1. Airline service quality has a positive impact on customer satisfaction.

H1-1. The tangibility of airline service quality has a positive effect on customer satisfaction.

H1-2. The responsiveness of airline service quality has a positive effect on customer satisfaction.

H1-3. The personalization of airline service quality has a positive effect on customer satisfaction.

H1-4. The connectivity of airline service quality has a positive effect on customer satisfaction.

For companies, behavioral intention is one of the most appropriate results of customer satisfaction. Many studies show that the more satisfied consumers are with the company, the more likely they are to repurchase from them. Similarly, customer satisfaction leads to positive introductions and recommendations to companies (Su et al., 2016). In the airline context, most authors report that customer satisfaction is an indicator of recurring purchases and recommendations. Based on the above studies, the second hypothesis was established.

H2. Customer satisfaction has a positive effect on intention to repurchase.

Previous studies have shown that the services provided by low-cost carriers and large carriers are different and perceived differently by passengers (Rajaguru, 2016). Large airlines rely on superior service, both on airline tangency and on the quality of service provided by their employees (Suhartanto & Noor, 2012), while low-cost airlines attract customers primarily by offering lower prices (Chiou & Cen, 2010). Rajaguru (2016) shows that the impact of service quality on customer satisfaction significantly increases for large airlines compared to low-cost airlines. Loureiro and Fialho (2016) said that the service quality of low-cost airlines does not significantly affect customer satisfaction, and that this relationship is not much different from that of large airlines. From the results of these studies, it is hypothesized that the degree of effect of service quality on customer satisfaction varies depending on the type of airline, as indicated in the third hypothesis.

H3. In the causal relationship between airline service quality and customer

satisfaction, there will be differences between low-cost carriers and large airlines.

H3-1. The effect of tangibility of airline service quality on customer satisfaction will be greater for low-cost carriers than for full-service carriers.

H3-2. The effect of responsiveness of airline service quality on customer satisfaction will be greater for low-cost carriers than for full-service carriers.

H3-3. The effect of personalization of airline service quality on customer satisfaction will be greater in low-cost carriers than for full-service carriers.

H3-3. The effect of connectivity of airline service quality on customer satisfaction will be greater in low-cost carriers than for full service carriers.

3. Results

3.1. Measurement model evaluation

A confirmatory factor analysis was conducted to measure the validity of the six constructs (tangibility, responsiveness, personalization, and connectivity) on customer satisfaction and repurchase intention. The following were analyzed: the χ^2 value representing the overall fit of the model; the goodness fit index (GFI) and the adjusted goodness fit index (AGFI), which represent the RMSEA and the explanatory power of the model; the normed fit index (NFI), and; the comparative fit index (CFI).

According to the results of the analysis, the measurement models showed the suitability of $\chi^2 = 363.138$, df = 209 p <.05, GFI = .925, CFI = .968, NFI = .929, RMR = .020, and the RMSEA = .043. The RMSEA was found to be less than the standard value of 0.08, which is acceptable. In addition, since GFI, CFI, and NFI all met the recommended standards (GFI≥0.9, CFI≥0.9, NFI≥0.9) (Kline 2005), the composition of the measurement items conforms to the structural model and has explanatory power. According to the correlation analysis result and the comparison result of the average value, since the squared values of the correlation coefficients of the six constituent concepts are all less than 1, discriminant validity was secured.

3.2. Configuration and metric invariance evaluation

Hypothesis 1 relates to the causal relationship between airline service quality factors and customer satisfaction. To verify the structural causal relationship as suggested in the research model, a structural equation analysis was conducted using the SPSS-AMOS 18.0 program. As a result of verifying the suitability of the research model, the measurement model was $\chi^2 = 535.005$ (df = 310 p <.0.5), RMSEA = .043, RMR = .023, GFI = .907, NFI = .911, and the CFI = .960 Hence, the overall suitability is acceptable. For the hypothesis verification, the statistical significance of the standard factor load among the study model paths was analyzed. The result of examining the significance, direction, and size of the primary path coefficient between tangibility and customer satisfaction with t value was found to be

statistically significant (beta = .267, t = 2.949, p <.05) and makes Hypothesis 1-1 acceptable. The path coefficients between responsiveness and customer satisfaction (beta = .145, t = 42.579, p <.05) were also found to be statistically significant, accepting Hypothesis 1-2. The path coefficient between personalization and customer satisfaction (beta = .379, t = 3.166, p <.05), and the path coefficient between connectivity and customer satisfaction (beta = .229, t = 2.794, p <.05) are all statistically significant, thus, Hypothesis 1-3 and Hypothesis 1-4 were also accepted. Hypothesis 2 relates to the causal relationship between customer satisfaction and intention to repurchase. Examining the significance, direction, and size of the path coefficient where t value was found to be statistically significant (beta = .912, t = .14.324, p <.001) makes Hypothesis 2 acceptable.

Table 1: Hypothesis 1 test results

Path	Factor loading	SE	Standardized regression weights	t-value	p	Result
Tangibility → Customer satisfaction	.236	.080	.267	2.949	.003	Supported
Responsiveness → Customer satisfaction	.144	.056	.145	2.579	.010	Supported
Personalization → Customer satisfaction	.331	.105	.379	3.166	.002	Supported
Connectivity → Customer satisfaction	.207	.070	.229	2.794	.003	Supported

3.3. Structural model and multi-group analysis results

Prior to the analysis of the parametric differences, a structural equation model was used for each group of low-cost carriers and full service carriers, and the statistical significance of the fit of the model and the path coefficient between variables was tested. For low-cost carriers, results are $\chi2$ = 347.241 (df = 218, p <.0.5), RMSEA = .056, RMR = .026, GFI = .866, NFI = .873, and CFI = .948. Suitability is generally acceptable. For full service carriers, $\chi2$ = 320.612 (df = 218, p <.0.5), RMSEA = .048, RMR = .026, GFI = .878, NFI = .882, and CFI = .958. Overall, suitability was found to be acceptable. For low- cost carriers, the results are: Tangibility → Customer satisfaction (beta = .438, p <.05), Personalization → Customer satisfaction (beta = .185, p> .05), and Connectivity → Customer satisfaction (beta = .333, p <. 05) which were found to be statistically significant, but the route of Responsiveness → Customer satisfaction (beta = .048, p> .05) was not significant. For full-service carriers, the results are: Tangibility → Customer satisfaction (beta = .251, p <.05), Responsiveness → Customer satisfaction (beta

= .290, p <.05), and Personalization → Customer satisfaction (beta = .389, p < .05) showed that the path was significant, while the path of Connectivity → Customer satisfaction (beta = .132, p> .05) was not significant.

Table 2: Hypothesis 2 test results

Path	Factor loading	SE	Standardized regression weights	t-value	p	Result
Customer satisfaction → Intention to repurchase	.981	.068	.912	14.324	.000	Supported

3.4. Further analysis

Hypothesis 3 relates that the effect of the factors of service quality on customer satisfaction can be differentiated according to airline type. To verify this, a multiple group analysis was conducted. The analysis results using the free model are $\chi2$ = 643.953 and df = 434, while the constraint model are $\chi2$ = 668.221 and df = 450. Since the $\chi2$ difference of the non-constrained model to the constraint model is p = .084> α = .05, even after the constraint that the measurement weight is the same for the non-constrained model, the fit of the model does not deteriorate and the cross-validity is secured between low-cost carriers and full service carriers. For each of the four paths between airline service quality and customer satisfaction, this study conducted an $\chi2$ difference verification between the constraint model and the free model, and critical ratio verification for differences in individual parameters. As a result of verifying the $\chi2$ difference, the effect of tangibility on customer satisfaction was found to have no significant difference between business types ($\chi2$ difference = 0.85, p> .05). The effect of responsiveness on customer satisfaction was found to be significantly different between companies ($\chi2$ difference = 5.12, p <.05). In addition, there was a significant difference between the types in the personal relationship–customer satisfaction ($\chi2$ difference = 4.15, p <.05), and connectivity–customer satisfaction ($\chi2$ difference = 4.28, p <.05). Comparing the critical ratio showed that responsiveness has a t value of 2.68 and p <.05, personalization with t = 2.32 and p <.05, and connectivity with t = 2.21 and p <.05. The causal relationship between tangibility and customer satisfaction was found to be significantly different according to airline type. As shown on the size and t value of the path coefficient, the influence of responsiveness and personalization on customer satisfaction was greater in low-cost carriers, and the impact of connectivity on customer satisfaction was greater in full-service carriers. However, there was no significant difference between the airline types in the causal

relationship between tangibility and customer satisfaction. Therefore, hypotheses 4-2 and 4-3 were adopted, while hypotheses 4-1 and 4-4 were rejected.

Table 3: Hypothesis 3 test results

Path	χ^2		χ^2 differen-ce (df=1)	p	Result	t-value
	Free model	Constraint model				
Tangibility → Customer satisfaction	667.85	668.70	.85	>.05	Reject	0.97
Responsiveness → Customer satisfaction		672.98	5.12	<.05	Supported	2.68
Personalization → Customer satisfaction		672.01	4.15	<.05	Supported	2.32
Connectivity → Customer satisfaction		672.14	4.28	<.05	Reject	-2.21

4. Discussions and Conclusion

This study investigated whether the airline service quality (e.g. tangibility, responsiveness, personalization, and connectivity) affects customer satisfaction and if customer satisfaction affects repurchase intention. We examined the factors that have greater effect on customer satisfaction based on the type of airline.

As a result, to increase customer satisfaction, low-cost carriers should focus more on responsiveness and personalization among service quality factors. Full-service carriers should operate with focusing on connectivity among service quality factors. These human service quality factors act as the strongest determinants of customer satisfaction, which is consistent with the research results of Loureiro & Fialho (2016). In addition, it was confirmed that satisfaction with the airline service leads to customers' intention to repurchase in the future. These findings are the central determinants of customer behavioral intentions, thus, require management's careful management of customer satisfaction. Considering Oliver's expectancy disconfirmation model (1997), the said result can occur because consumers' expectations about the service quality of airlines were very low when traveling with low-cost carriers, and those expectations were satisfied satisfactorily. Curras & Sanchez (2016) estimated that passengers flying with low-cost carriers will be able

to meet these expectations at reasonable prices. The increasingly ambiguous distinction between low-cost carriers and full- service carriers is about the slowing effect on the satisfaction relationship of airline types. Full-service carriers narrowed the gap between low-cost carriers by abandoning several products offering differentiation programs.

In conclusion, this study provides useful insights into various factors affecting customer satisfaction and behavioral intention in the context of low-cost carriers and full-service carriers. This study shows that the two factors of service quality (external factors and human factors) have great influence on airline customer satisfaction. Given that personalization had the greatest impact on customer satisfaction among service quality factors, airlines should pay attention on how to effectively improve personalized service. Targeting advertisements for destinations and flight routes in consideration of past individual flight histories may be one method. It is not only limited to personalization factors, but it is also important to continuously monitor other service quality factors. Understanding customer expectations is key to helping airlines successfully fulfill these expectations and ultimately satisfy their customers.

As a predictor of customer satisfaction, potentially relevant prerequisites such as innovative brand experiences, in-flight mood, and customer sentiment are worth reviewing as other dimension of service quality. Although customer satisfaction has surfaced as the strongest determinant in many studies, other factors such as trust may be relevant. Specifically, Forgas et al. (2010) argued that low-cost carriers need a higher level of confidence to offset the weaknesses caused by lower prices. The structure of the specimen was also a limitation, tended to be more weighted to males. Moreover, most of the respondents reported their experiences with Korean airlines, which would interfere with the generalization of the findings. Lack of information as to whether respondents were evaluating short or long-haul flights. In the future research, considering these aspects, it is necessary to verify the difference between low-cost carriers and full-service carriers according to short or long-distance flight. In addition, this study measured behavioral intention, which is not always predicting the actual behavior. Therefore, future researchers should try to work with specific airlines to obtain real passenger behavior, or purchase data whenever possible. In the future, it is possible to obtain more accurate empirical results by examining the proposed relationship in an experimental environment where all other aspects of the experimental design are kept constant through the manipulated variables.

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