

Empirical evidence from China: what contributes to airline customers' positive behavioral intentions?

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Abstract. This study aims to advance our understanding of airline customers' decision-making processes by investigating the relationships between service quality, perceived value, customer satisfaction, and behavioral intention in the context of China. A conceptual model involving the constructs mentioned above and hypotheses to be examined is first developed, with the service quality measured by the improved AIRQUAL, a multiple-item scale including the dimensions of tangibles, reliability, responsiveness, assurance, and empathy. A quantitative research approach based on the development of a structured self-administered questionnaire is applied. Reliability and correlation analyses are conducted to examine the internal consistency of multiple-item scales and the validity of the conceptual model, respectively. Multiple linear regression analysis is employed to test the proposed hypotheses. Regression results reveal that assurance has a positive effect on both behavioral intention and perceived value. Responsiveness and empathy influence behavioral intention and customer satisfaction in a positive manner, respectively. In addition, both perceived value and customer satisfaction exert positive impacts on behavioral intention. Finally, the implications of these results as well as the recommendations for the management policy and practice of airlines are discussed. This study may serve as a useful guide for airlines to retain customers and maintain their profitability.

1 Introduction

Retaining customers has become a critical consideration for the airlines to maintain their profitability and sustainable development in the increasingly competitive air transport market [1, 2]. As a key indicator of customer retention, behavioral intention, i.e., a customer's intention to repurchase the same airline service and willingness to recommend it to others, is therefore a crucial predictor of an airline's future profits [1, 3, 4]. Hence, developing efficient strategies that will contribute to customers' positive behavioral intentions should be the focus of an airline. As such, to secure customer loyalty, remain competitive, and ultimately maintain the ability to generate profits, we need to understand the link between the antecedents of behavioral intention and how these antecedents affect it.

As an important antecedent of behavioral intention, service quality, referred to as the difference between a customer's initial service expectation and the actual service realization, has received substantial attention in terms of its measurement issues due to the subjective nature [4-6]. In order to measure service quality, Parasuraman et al. [5] developed a comprehensive measurement scale that includes five dimensions, i.e., tangibles, reliability, responsiveness, assurance, and empathy, named SERVQUAL. In more details, according to Parasuraman et al. [5], tangibles represent physical

facilities, equipment, and appearance of personnel; reliability denotes the ability to perform the promised service dependably and accurately; responsiveness indicates the willingness to help customers and provide prompt service; assurance is the knowledge and courtesy of employees and their ability to inspire trust and confidence; empathy means the caring and individualized attention the firm provides its customers. The SERVQUAL scale received massive criticism due to the lack of consistency across industries [7]. Later, Bari et al. [8] proposed the multiple-item scale AIRQUAL to assess airline service quality of the Cypriot market by incorporating industry specific (i.e., airline industry) aspects. The AIRQUAL scale also comprises five distinct dimensions, namely, airline tangibles, terminal tangibles, personnel, empathy, and image. Mishal [7] claimed that the AIRQUAL scale cannot be applied in other countries due to the lack of validity and she presented an improved as well as validated AIRQUAL scale composed of five dimensions, and the names of these dimensions are the same with SERVQUAL, referred to as the improved AIRQUAL scale thereafter.

Different from service quality, which is related to cognitive judgments, another essential antecedent and predictor of behavioral intention, i.e., customer satisfaction, is connected with affective judgments, defined as a feeling of pleasure or disappointment resulting from comparing a product's performance in

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relation to his or her expectations [1, 3, 6, 9, 10]. Many studies have examined the antecedent, mediating, and consequent relationships between service quality, customer satisfaction, and behavioral intention in the context of airline service. For example, Koklic et al. [11] tested customer satisfaction and its antecedents (i.e., airline tangibles and personnel dimension of AIRQUAL) and consequences (i.e., intentions to repurchase and recommend). They found that tangibles and personnel positively affect customer satisfaction, which influences the intentions to both repurchase and recommend in a positive way. These results are consistent with the findings of Nadiri [12]. Shah et al. [1] investigated the impact of service quality on behavioral intention in the presence of the mediator customer satisfaction using the SERVQUAL scale. Results showed that all the dimensions of service quality have positive relationships with customer satisfaction and behavioral intention, and customer satisfaction mediates the relationship between airline service quality and behavioral intention. Farooq et al. [6] assessed the quality of service provided by Malaysia Airlines using AIRQUAL scale and investigated its impact on overall customer satisfaction by a PLS-SEM approach. They concluded that all the dimensions of service quality have positive effects on customer satisfaction and the operator of the airline should pay special attention to personnel services and image. Suki [13] examined the effects of three dimensions of AIRQUAL, i.e., airline tangibles, terminal tangibles, and empathy, on the level of customer satisfaction via structural equation modeling approach. It was found that customer satisfaction is mostly influenced by empathy. All the aforementioned studies adopted either SERVQUAL or AIRQUAL scale to evaluate the relationships between service quality, customer satisfaction, and behavioral intention, although SERVQUAL scale may have inherent problems in measuring service quality and AIRQUAL scale lacks validity.

Unlike service quality and customer satisfaction, perceived value, indicating the overall assessment of the utility of a product (or service) based on the perception of what is received and what is given, has received much less attention, although it has been identified as an antecedent of behavioral intention [3, 14, 15]. Only a few studies have considered the effects of perceived value on behavioral intention. A prominent example is the pioneering study by Park et al. [16], in which a conceptual model simultaneously considering service expectation, service perception, perceived value, customer satisfaction, airline image, and behavioral intention was tested to look into the decision-making processes of customers. In their study, airline service quality was evaluated by 22 measurement items primarily based on the SERVQUAL scale and the direct effect of service quality on behavioral intention was not examined. Later Chen [3] conducted a study investigating the relationships between service quality, perceived value, customer satisfaction, and behavioral intention through a structural equation model. The results of the above mentioned two studies showed that perceived value affects behavioral intention positively. Huang [17]

applied a linear structural equation modeling system to incorporate the service quality measured by SERVQUAL into the customers' airline choice model, and he tested the relationships between service quality, perceived value, satisfaction, perceived sacrifice, and behavioral intention. The results revealed that service quality has a positive effect on perceived value and behavioral intention is positively influenced by perceived value. However, only the overall effects of the five service quality dimensions were analyzed and the direct effect of service quality on behavioral intention was not assessed.

To the best of our knowledge, no research has ever measured the service quality using the improved AIRQUAL scale, although it is more reliable. Previous studies mainly adopted SERVQUAL or AIRQUAL scale to measure service quality regardless of their inconsistency or validity problems. In addition, the above literature review reveals that the conceptual and theoretical understanding of the perceived value, an antecedent of behavioral intention, is still at the infancy stage and more efforts should be made to develop a deeper insight into its effect on behavioral intention. Moreover, the rapid advancements in the competitive airline industry have led to increasing customer expectations over the past ten years, and retaining customers has thus become an even more challenging task. To secure customer loyalty by promoting efficient strategies in the new era, re-examining the link between the antecedents of behavioral intention, i.e., an indicator of customer retention, and investigating how these antecedents affect behavioral intention are therefore highly anticipated. Hence, this study aims to investigate, both analytically and empirically, the antecedent, mediating, and consequent relationships between service quality, perceived value, customer satisfaction, and behavioral intention in the context of airline service, with the service quality measured by the improved AIRQUAL scale. To achieve this objective, a conceptual model including the service quality, perceived value, customer satisfaction, and behavioral intention is proposed. Reliability and correlation analyses are conducted to test the internal consistency of multiple-item scales and the validity of the conceptual model, respectively. Multiple linear regression analysis is employed to examine the proposed model.

The contributions of this paper are threefold. First, an improved AIRQUAL scale including five dimensions, i.e., tangibles, reliability, responsiveness, assurance, and empathy, is adopted to measure the service quality. Second, based on the improved AIRQUAL scale, the direct effect of each service quality dimension on behavioral intention is tested. The results indicate that responsiveness and assurance are contributing factors to positive behavioral intention. Third, in addition to customer satisfaction, perceived value is incorporated into the proposed model to examine the indirect effect of each service quality dimension on behavioral intention. We find that assurance and empathy indirectly influence behavioral intention through perceived value and customer satisfaction, respectively, in a positive manner.

In the remainder of this paper, the conceptual model involving behavioral intention as well as its antecedents

is first proposed. After an introduction to the research methodology including the questionnaire design, data collection, and analysis techniques, the survey results and findings of this study are elaborated. The conclusions and future research are presented at last.

2 Conceptual model

Based on the logical relationships between service quality, perceived value, customer satisfaction, and behavioral intention derived from the review of the aforementioned past studies, a conceptual model considering the four constructs and involving hypotheses to be examined is developed, where the service quality is measured by the improved AIRQUAL scale. Figure 1 shows the proposed model, in which H1a, H1b, H1c, H1d, and H1e are hypotheses that each service quality dimension influences behavioral intention in a positive manner. In addition to service quality, behavioral intention is hypothesized to be positively affected by perceived value and customer satisfaction, respectively, i.e., the hypotheses H1f and H1g. Moreover, in order to further test the indirect effect of service quality on behavioral intention, each service quality dimension is hypothesized to have a positive impact on perceived value (i.e., the hypotheses H2a, H2b, H2c, H2d, and H2e) and customer satisfaction (i.e., the hypotheses H3a, H3b, H3c, H3d, and H3e), respectively. The hypotheses to be tested empirically are summarized in Table 1.

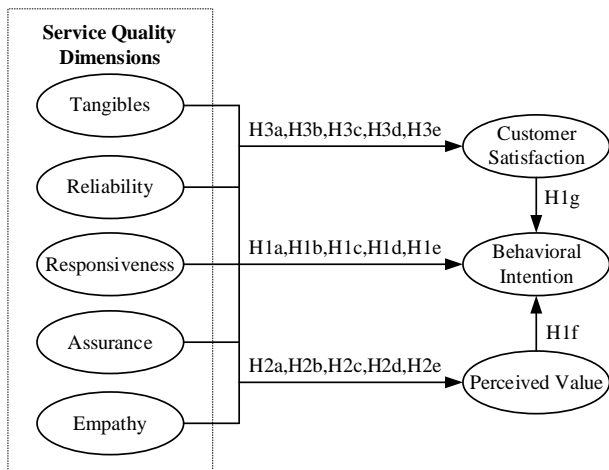


Figure 1. The proposed conceptual model.

Table 1. The hypothetical relationships between model variables.

H1a	Tangibles have a positive impact on behavioral intention.
H1b	Reliability has a positive impact on behavioral intention.
H1c	Responsiveness has a positive impact on behavioral intention.
H1d	Assurance has a positive impact on behavioral intention.
H1e	Empathy has a positive impact on behavioral intention.
H2a	Tangibles have a positive impact on perceived value.
H2b	Reliability has a positive impact on perceived value.
H2c	Responsiveness has a positive impact on perceived value.
H2d	Assurance has a positive impact on perceived value.
H2e	Empathy has a positive impact on perceived value.

H3a	Tangibles have a positive impact on customer satisfaction.
H3b	Reliability has a positive impact on customer satisfaction.
H3c	Responsiveness has a positive impact on customer satisfaction.
H3d	Assurance has a positive impact on customer satisfaction.
H3e	Empathy has a positive impact on customer satisfaction.
H1f	Perceived value has a positive impact on behavioral intention.
H1g	Customer satisfaction has a positive impact on behavioral intention.

3 Research methodology

In order to test the proposed hypotheses and assess the conceptual model, this study adopts a quantitative research approach based on the development of a structured self-administered questionnaire. The final questionnaire consists of three parts. Part 1 is designed to gather information about respondents' demographics, such as gender, age, and level of education. Part 2 focuses on measuring respondents' perceptions on service quality and 30 items involved in this part are adopted from the improved AIRQUAL model presented by Mishal [7], which is based on multiple-item scales with 5 items for tangibles, 10 items about reliability, 1 item dedicated for responsiveness, 7 items belonging to assurance, and 7 items designed for empathy. Respondents are asked to indicate the perceived level of agreement via a five-point Likert-type scale from 'Strongly disagree (=1)' to 'Strongly agree (=5)'. Part 3 measures customer satisfaction, perceived value, and behavioral intention. In this part, 1 item, adopted from Mishal [7], evaluates the overall satisfaction of respondents through a five-point Likert-type scale from 'Very low (=1)' to 'Very high (=5)'. The last four items aim to assess perceived value and behavioral intention using a seven-point Likert-type scale from 'Strongly disagree (=1)' to 'Strongly agree (=7)', with 2 items adopted from Chen [3] for perceived value and another 2 items adopted from Park et al. [16] for behavioral intention. Appendix summaries all the items involved in Part 2 and Part 3. It should be noted that the Likert agree scales adopted in this study are ordinal data rather than cardinal data.

Because of the limited time and manpower, a web-based survey via online questionnaire was conducted between May and June of 2020. Before the survey was carried out for a large group of respondents, a pilot test was first implemented to ensure the questions and response options are easy to understand. The link of the questionnaire was then distributed through message and email, and the interested readers were invited to click it and respond to the questionnaire. The respondents were asked to answer the questions based on their most recent flight experience. In order to make the respondents clearer about the purpose of this survey, an introduction to the survey was presented at the beginning of the questionnaire. Generally, it takes 5-10 minutes to complete the questionnaire. Due to the property of the

'perception' of service quality, there was a limitation made for the inclusion of a respondent that he/she must have some experiences of flight by airlines, otherwise the respondent will be disqualified. To attain this, a question that 'Do you have any experiences of flight by airlines' was designed in Part 1 of the questionnaire. Finally, 122 qualified responses were received.

The collected data was compiled in an Excel format and analyzed using IBM SPSS version 26.0. Descriptive analysis is first conducted to provide a picture of respondent profiles and statistics of model variables. In order to assess the stability and internal consistency of multiple-item scales, reliability analysis is carried out, after which correlation analysis is performed to test the strength as well as direction of linear relationships between the eight model variables and thus prove the validity of the proposed model. Lastly, multiple linear regression analysis is adopted to examine the antecedent, mediating, and consequent relationships between service quality, perceived value, customer satisfaction, and behavioral intention. For perceived value, behavioral intention, and the service quality dimensions with more than one questions, i.e., tangibles, reliability, assurance, and empathy, the results of data analysis including descriptive analysis, correlation analysis, and multiple linear regression analysis were obtained based on calculating the average value for each response.

4 Results and discussions

This section focuses on the discussion of data analysis results and managerial implications for the airlines to retain customers.

4.1 Descriptive analysis

Data analysis and discussion of research findings begin with the brief description of demographic attributes of respondents in terms of their gender, age, occupation, and education level. First of all, since a question that 'Do you have any experiences of flight by airlines' was designed in Part 1 of the questionnaire to filter out disqualified responses, all of the respondents have at least one flight experience. Out of total 122 respondents 59.8% were male and 40.2% were female. Regarding the age distribution, the majority of respondents (68.8%) were aged between 25 and 39 years old, followed by 27.9% of respondents who were under 25 years old. Furthermore, nearly 90% of respondents were employed person (46.7%) or students (41.8%), and only a few respondents were self-employed (3.3%), housewife (0.8%), or jobless (3.3%). Education information reveals that 75.4% of respondents were at the post-secondary level and 5.7% were at the secondary level or below. Overall, the demographic attributes of respondents were biased towards young people. This limitation should be well addressed in future study. Complete details about the respondents' demographic attributes are tabulated in Table 2.

Table 2. Demographics of respondents.

Attributes	Distribution	Frequency	Percentage (%)
Gender	Male	73	59.8
	Female	49	40.2
Age	0-17	0	0
	18-24	34	27.9
	25-39	84	68.8
	40-59	4	3.3
	60 or above	0	0
Occupation	Self-employed	4	3.3
	Employed person	57	46.7
	Student	51	41.8
	Housewife	1	0.8
	Jobless	4	3.3
	Other (including retired)	5	4.1
Education	Primary level or below	1	0.8
	Secondary level	6	4.9
	Post-secondary level (education that comes after high school)	92	75.4
	Other	23	18.9

In addition to the profiles of respondents, the descriptive statistics of model variables are listed in Table 3 to improve our understanding of airline customers' perceived service quality, perceived value, satisfaction, and behavioral intention. Regarding customers' perceptions of service quality in each dimension, the majority of total respondents were not sure (3: Not Sure) or agreed (4: Agree) that they obtained high-quality services. Specifically, respondents who were not sure that they were provided with high-quality services in the tangibles dimension accounted for the largest proportion (46.7%) of total respondents, with respondents who chose the 'Agree' option making up the second largest proportion (44.2%). The same conclusion can be reached for the dimensions of responsiveness and empathy. Whereas in the reliability dimension, respondents who agreed that they were offered high-quality services (57.4%) were more than those who took an unsure attitude (30.4%), and the same is true for the assurance dimension. This may indicate that airline customers have higher expectations in dimensions of tangibles, responsiveness, and empathy, which can be reflected in the column of mean value where the average values for dimensions of tangibles, responsiveness, and empathy are relatively low. Moreover, it is interesting that respondents tending to agree (including 5: Somewhat Agree; 6: Agree; 7: Strongly Agree) that the services they received were commensurate with the ticket price they had paid accounted for 63.1% of total respondents, equal to the proportion of respondents who were inclined to show positive behavioral intentions (including 5: Somewhat Agree; 6: Agree; 7: Strongly Agree), while less than half of respondents (49.2%) rated their level of satisfaction above medium. These findings further inspired us to explore the relationships between service quality, perceived value, customer satisfaction, and behavioral intention.

Table 3. Descriptive statistics of model variables.

Variables	1 (%)	2 (%)	3 (%)	4 (%)	5 (%)	6 (%)	7 (%)	Mean	Standard Deviation
Tangibles ^a	0.8	2.5	46.7	44.2	5.8	-	-	3.51	0.64
Reliability ^a	0.8	0.8	30.4	57.4	10.6	-	-	3.69	0.63
Responsiveness ^a	3.3	5.7	44.3	35.2	11.5	-	-	3.46	0.89
Assurance ^a	0.8	1.7	20.5	59	18	-	-	3.88	0.67
Empathy ^a	2.5	7.3	47.5	37	5.7	-	-	3.36	0.76
Perceived Value ^b	0.8	1.7	5.7	28.7	25.4	32	5.7	4.83	1.14
Customer Satisfaction ^c	1.6	2.5	46.7	44.3	4.9	-	-	3.48	0.71
Behavioral Intention ^b	1.6	1.7	6.5	27.1	21.3	33.6	8.2	4.86	1.26

^aFive-point Likert-type scale: 1: Strongly Disagree; 2: Disagree; 3: Not Sure; 4: Agree; 5: Strongly Agree.

^bSeven-point Likert-type scale: 1: Strongly Disagree; 2: Disagree; 3: Somewhat Disagree; 4: Not Sure; 5: Somewhat Agree; 6: Agree; 7: Strongly Agree.

^cFive-point Likert-type scale: 1: Very Low; 2: Low; 3: Medium; 4: High; 5: Very High.

4.2 Reliability analysis

Cronbach's Alpha, the most widely used test for reliability, is adopted in this section to examine the stability and internal consistency of a multiple-item scale. The Cronbach's Alpha value ranges between 0 and 1, and a higher Cronbach's Alpha value means a higher level of reliability. To ensure sufficient reliability, the Cronbach's Alpha value is expected to be 0.7 or higher, as recommended by Murphy and Balzer [18]. The results of reliability analysis are shown in Table 4. It can be seen that Cronbach's Alpha values for all multiple-term constructs are higher than 0.7, with tangibles 0.751, reliability 0.906, assurance 0.943, empathy 0.940, perceived value 0.845, and behavioral intention 0.878. Therefore, the multiple-item scales for these constructs could be rated high consistency and stability. In particular, for responsiveness and customer satisfaction, reliability tests are not necessary, as they emerged with only one item.

Table 4. Results of reliability analysis.

Construct	Number of Items	Cronbach's Alpha
Tangibles	5	0.751
Reliability	10	0.906
Responsiveness	1	-
Assurance	7	0.943
Empathy	7	0.940
Perceived Value	2	0.845
Customer Satisfaction	1	-
Behavioral Intention	2	0.878

4.3 Correlation analysis

Pearson correlation analysis, a technique for measuring the strength and direction of linear relationship between two variables [19], is conducted to test the validity of the proposed model. Pearson correlation coefficient rho (r), a number between -1 and 1, represents the correlation between two variables. Negative r refers to the negative correlation and positive r means the positive correlation. Particularly, there is no relationship between two

variables when r equals 0. In order to describe the degree of correlation, the criteria suggested by Cohen [20] is adopted in this study: (1) weak correlation: $0.1 \leq r \leq 0.29$ or $-0.29 \leq r \leq -0.1$; (2) medium correlation: $0.3 \leq r \leq 0.49$ or $-0.49 \leq r \leq -0.3$; (3) strong correlation: $0.5 \leq r \leq 1.0$ or $-1.0 \leq r \leq -0.5$. In addition, a value of Significance level (p) smaller than 0.05 indicates the obtained result is statistically significant.

Table 5 shows the results of Pearson correlation analysis, where the values of r and the information of p are included. It can be seen that all the correlations are positive and these results are statistically significant with p smaller than 0.01. Furthermore, all the five service quality dimensions have either medium or strong correlations with perceived value, customer satisfaction, and behavioral intention. More specifically, assurance has the strongest correlation ($r=0.497$) with perceived value among the five service quality dimensions, followed by reliability ($r=0.447$) and responsiveness ($r=0.428$). In addition, customer satisfaction is strongly correlated with both responsiveness and empathy, with the values of r reaching up to 0.510 and 0.557, respectively. As for the behavioral intention, again, assurance shows the strongest correlation ($r=0.528$) compared with the other four dimensions. Moreover, by further taking perceived value and customer satisfaction into consideration, we can conclude that behavioral intention is most correlated with perceived value ($r=0.793$), followed by customer satisfaction ($r=0.608$). The above findings verify the validity of the proposed model.

Table 5. Results of correlation analysis.

	TAN	REL	RES	ASS	EMP	PV	CS	BI
TAN	1							
REL	.673**	1						
RES	.454**	.604**	1					
ASS	.628**	.807**	.633**	1				
EMP	.609**	.731**	.786**	.700**	1			
PV	.370**	.447**	.428**	.497**	.390**	1		
CS	.383**	.452**	.510**	.467**	.557**	.515**	1	
BI	.399**	.465**	.483**	.528**	.455**	.793**	.608**	1

**Correlation is significant at 0.01 level (2-tailed).

TAN: Tangibles; REL: Reliability; RES: Responsiveness; ASS: Assurance; EMP: Empathy; PV: Perceived Value; CS: Customer Satisfaction; BI: Behavioral Intention.

4.4 Multiple linear regression analysis

After identifying the reliability of multiple-term scales and validity of the proposed model, we perform the multiple linear regression analysis in this section to test the proposed model. Different from the Pearson correlation, which reflects the degree and direction of relationship between two variables and describes the association symmetry, multiple linear regression models the relationship between a dependent variable and several independent variables by an equation and shows the cause and effect. The general form of a multiple linear regression model can be represented as follows:

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \dots + \beta_n X_n + \varepsilon \quad (1)$$

where Y is the dependent variable and X_1 to X_n are the independent variables; β_0 indicates the intercept and β_1 to β_n denote the coefficients for independent variables; ε represents the error of the regression model.

4.4.1 Regression model 1: service quality-behavioral intention

First, we investigate whether and to what extent the five service quality dimensions exert significant influences on behavioral intention, with the former acting as the independent variables and the latter as the dependent variable. Table 6 reports the regression results. The value of R^2 , i.e., the coefficient of determination, indicates that the five service quality dimensions explain 32.1% of the variation in behavioral intention. According to the coefficients for independent variables, we can observe that all service quality dimensions except empathy impose positive effects on behavioral intention. Only responsiveness and assurance, however, show statistical significance with $p < 0.05$. These results support the hypotheses H1c and H1d, with the hypotheses H1a, H1b, and H1e being rejected. In addition, one unit increase in responsiveness and assurance will strengthen customers' intentions to repurchase the same airline service and willingness to recommend it to others by 0.977, with 0.371 boosted by responsiveness and 0.606 enhanced by assurance. Hence, assurance makes a greater contribution to explaining behavioral intention compared with responsiveness.

Table 6. Results of regression model 1.

Independent Variables	Coefficient	Std. Error	t	p
Tangibles	0.186	0.215	0.866	0.388
Reliability	0.038	0.295	0.13	0.897
Responsiveness	0.371	0.18	2.059	0.042
Assurance	0.606	0.263	2.308	0.023
Empathy	-0.076	0.247	-0.307	0.76

Dependent Variable: Behavioral Intention. $N=122$, $F=10.953$, $R^2=0.321$.

4.4.2 Regression model 2: service quality-perceived value

In addition to behavioral intention, we further explore how perceived value is influenced by the five service quality dimensions. Table 7 presents the regression results, where perceived value is the dependent variable and the five service quality dimensions are the independent variables. It shows by the value of R^2 that 27.8% of the variation in perceived value is explained by the five service quality dimensions. Moreover, as illustrated by the coefficients for independent variables, perceived value is positively affected by four service quality dimensions, i.e., tangibles, reliability, responsiveness, and assurance, whereas only assurance exerts a significant effect with $p < 0.05$ and one unit increase in it will result in perceived value rising by 0.527. In addition, empathy shows a negative but

insignificant impact on perceived value with $p > 0.05$. Obviously, these results support the hypothesis H2d and reject the hypotheses H2a, H2b, H2c, H2e.

Table 7. Results of regression model 2.

Independent Variables	Coefficient	Std. Error	t	p
Tangibles	0.154	0.2	0.772	0.442
Reliability	0.172	0.274	0.628	0.531
Responsiveness	0.318	0.167	1.902	0.06
Assurance	0.527	0.244	2.16	0.033
Empathy	-0.214	0.229	-0.932	0.353

Dependent Variable: Perceived Value. $N=122$, $F=8.949$, $R^2=0.278$.

4.4.3 Regression model 3: service quality-customer satisfaction

Customer satisfaction is closely related to service quality as higher service quality usually contributes to a higher level of customer satisfaction. We thus test to what extent the five service quality dimensions affect customer satisfaction by letting customer satisfaction be the dependent variable and the five service quality dimensions be the independent variables. The regression results are summarized in Table 8. We can see that the five service quality dimensions explain 33.2% of the variation in customer satisfaction. Out of expectation, only empathy influences customer satisfaction both positively and significantly, and one unit increase in empathy contributes to 0.3 improvement in customer satisfaction. Tangibles, responsiveness, and assurance play positive but insignificant roles in improving customer satisfaction. Reliability shows an insignificant negative impact on customer satisfaction. Based on the above results, the hypothesis H3e is supported and the hypotheses H3a, H3b, H3c, and H3d are rejected.

Table 8. Results of regression model 3.

Independent Variables	Coefficient	Std. Error	t	p
Tangibles	0.048	0.119	0.404	0.687
Reliability	-0.007	0.164	-0.044	0.965
Responsiveness	0.133	0.1	1.334	0.185
Assurance	0.118	0.146	0.813	0.418
Empathy	0.3	0.137	2.192	0.03

Dependent Variable: Customer Satisfaction. $N=122$, $F=11.556$, $R^2=0.332$.

4.4.4 Perceived value, customer satisfaction-behavioral intention

Lastly, we examine how behavioral intention is affected by its two important antecedents, i.e., perceived value and customer satisfaction. The results are tabulated in Table 9, where perceived value and customer satisfaction are the independent variables and behavioral intention is the dependent variable. As expected, perceived value and customer satisfaction explain as high as 68.3% of the variance in behavioral intention. In addition, both perceived value and customer satisfaction show significantly positive effects on behavioral intention, with

the hypotheses H1f and H1g being supported. Furthermore, if customers' perceived value increases by one unit, their intention to repurchase the same airline service and willingness to recommend it to others will strengthen by 0.725, much larger than 0.486 corresponding to customer satisfaction. This implies that perceived value contributes greater than customer satisfaction in explaining behavioral intention.

Table 9. Results of regression model 4.

Independent Variables	Coefficient	Std. Error	t	p
Perceived Value	0.725	0.067	10.858	0
Customer Satisfaction	0.486	0.108	4.517	0

Dependent Variable: Behavioral Intention. N=122, F=128.473, R²=0.683.

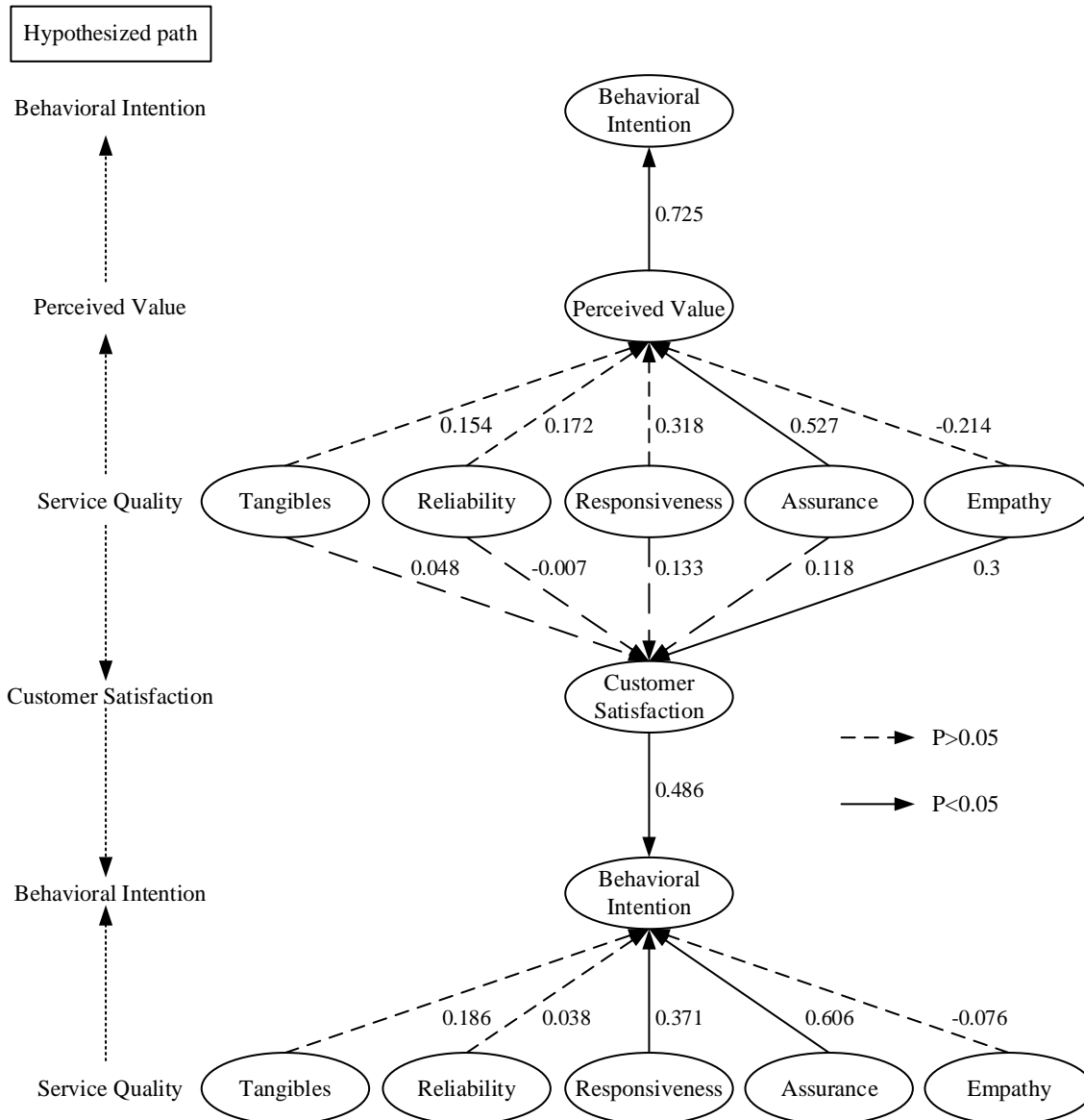


Figure 2. Test results of the proposed model.

4.5 Implications

Figure 2 summarizes the test results of the proposed conceptual model after conducting the multiple linear regression analysis, from which we can conclude a number of practical implications for the airlines to retain customers. It can be seen from Figure 2 that reinforcing assurance significantly contributes to customers' positive behavioral intentions in both direct and indirect manners, with the indirect effect realized through perceived value. Hence, in order to secure customer loyalty, policy makers

and practitioners of airlines should first focus on the improvement of assurance, e.g., provide more courses and training for employees to build confidence and enrich their knowledge, experiences as well skills such that they can confidently deliver services and answer customers' questions as much as possible. In addition, responsiveness acts as another direct driver to boost customers' behavioral intentions, as shown in Figure 2. We thus recommend that airlines set a standard on employees' performance to ensure that customers' needs can be responded promptly with great willingness and patience. Furthermore, Figure 2 implies that improving

empathy can indirectly enhance customers' behavioral intentions through satisfaction. Airlines are therefore suggested to train their employees to provide better and personalized services by giving more attention to customers and understanding their specific needs. The above implications demonstrate that taking a strategy of service differentiation may be an efficient way for airlines to secure customer loyalty and remain profitable.

5 Conclusions and future research

This study investigates the relationships between service quality, perceived value, customer satisfaction, and behavioral intention with the service quality measured by the improved AIRQUAL scale, and identifies which service quality dimension has a positive impact on behavioral intentions of customers. A conceptual model involving hypotheses to be tested is first developed. A web-based survey via online questionnaire was conducted to collect data for data analysis. After examining the reliability of multiple-item scales and validity of the conceptual model, multiple linear regression analysis is applied to examine the proposed hypotheses. Regression results reveal that both assurance and responsiveness positively influence behavioral intention in a direct manner. In addition, assurance and empathy exert their positive effects on behavioral intention indirectly through perceived value and customer satisfaction, respectively. A number of practical recommendations are finally proposed for airlines to retain customers and maintain the ability to generate profits.

Although findings of this study shed light on certain aspects of relationships between service quality, perceived value, customer satisfaction, and behavioral intention, there is still room for further research. First, in terms of demographic attributes of respondents, since a considerable proportion of the respondents were students (42%) and an even higher proportion (69%) were in the age range from 25 to 39, this study ignores the air travelers who are employed and age 40 and over. Yet these travelers make the majority of air trips and whose loyalty airlines care the most about. Hence, the credibility of this study can be enhanced in the future by larger, more balanced and representative samples. Second, only five dimensions of the improved AIRQUAL scale, i.e., tangibles, reliability, responsiveness, assurance, and empathy, are considered in this study, which may not be able to fully reflect services in aviation industry. Future research can explore more dimensions by taking pre-flight and post-flight services, e.g., online services for booking and airport services, into consideration. Third, there are generally two types of airlines, that is, traditional airlines and low-cost airlines, and their business mode as well as service elements may have a big difference. Strategies taken to retain customers for low-cost airlines may not work for traditional airlines. This study, however, does not distinguish between the two types of airlines. Investigating customers' decision-making processes of different types of airlines may better help airline managers develop efficient strategies to retain customers. Last but not the least, from the results of

multiple regression analysis, we can see that the intermediate values of customer satisfaction and perceived value seem to explain behavioral intention well, and this implies that the exogenous factors within customer satisfaction and perceived value are important. Hence, to help understand what's actually important factor and what isn't, future studies should further develop a model of behavioral intention that includes customer satisfaction and perceived value together with all of the service quality dimensions.

Appendix: measurement items in part 2 and part 3 of questionnaire

Constructs	Items
Tangibles	The airline provides passengers with new, modern, and well-maintained aircraft.
	Food and drink served on the aircraft during the flight are of high quality and sufficiently varied.
	Toilets on board the aircraft are clean and easy to use.
	There are daily newspapers and current magazines to read on board the aircraft.
	Personnel working for the airline are neatly dressed.
Reliability	The airline provides passengers with allocated seats.
	The airline provides good inflight entertainment on board the aircraft.
	Passengers' luggage is handled with care and attention.
	When the airline promises to do something by a certain time, it does so.
	When you have problems, the airline shows a sincere interest in solving it.
	The airline performs its service right the first time.
	The airline provides its services at the time it promises to do so.
	The airline maintains error-free records.
Responsiveness	Employees of the airline tell you exactly when services will be performed.
	Employees of the airline give you prompt service.
Assurance	Employees of the airline are never too busy to respond to your requests.
	Employees of the airline are always willing to help you.
	The airline provides its services to you promptly.
	The airline personnel are experienced and well trained.
	The behavior of employees of the airline instills confidence in customers.
	You feel safe in your transactions with the airline.
	Employees of the airline are consistently courteous with you.
Employees of the airline have the knowledge to answer your questions.	
Empathy	Passengers are compensated sufficiently by the airline for any damages arising from service disruption in the shortest time possible.

	Personnel working for the airline put themselves in the place of the passengers when providing service.
	The airline gives you individual attention.
	The airline has employees who give you personal attention.
	Employees of the airline understand your specific needs.
	The airline has your best interests at heart.
	The airline has operating hours convenient to all its customers.
Customer Satisfaction	How would you rate your level of satisfaction with the service provided by this airline?
Perceived Value	Considering the ticket price I pay for the airline, I believe that the airline offers sufficient services.
	The ticket price of this airline is reasonable.
Behavioral Intention	You will fly this airline again in the future.
	You would recommend this airline to other people.

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