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Modelling the Impact of Airline Service Quality and Marketing Variables on Passengers' Future Behavioural Intentions

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ABSTRACT This article investigates how perceived price, airline service quality, perceived value, passenger satisfaction and airline image determine passengers' future behavioural intentions. To test the conceptual framework, structural equation modelling using a maximum likelihood estimator was applied to data collected from Australian international air passengers. It was found that there were significant relationships between the variables except for three paths. The three insignificant paths were the relationship between 'perceived price and passenger satisfaction', 'service quality and airline image' and 'perceived value and airline image'. Perceived price, perceived value, passenger satisfaction, and airline image were each found to have a direct effect on passengers' future behavioural intentions.

KEY WORDS: Price; service quality; value; airline image; behavioural intentions; structural equation modelling

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Introduction

Many studies have been conducted in the field of service quality, customer satisfaction, and customer behaviour. A number of researchers have applied service quality theories and methods in various service industries. Although numerous studies of consumer behaviour in services marketing have been conducted, it is necessary to refine the theories and methodologies to be suitable for specific situations (Oh & Park, 1997). The way to refine a theory is to consider new variables that are potentially powerful in explaining as well as predicting consumer behaviour (Oh, 1999). Typically, previous studies have not included other important variables as determinants of customer satisfaction and consumer behaviour.

Delivering high quality service to passengers is important for airlines to survive and strengthen their competitiveness. High service quality results in a company gaining a competitive advantage, through repeated customer patronage, preferred transportation supplier status, market share gains and eventually increased profitability for the airline (Morash & Ozment, 1994). Since service quality is an important factor for airlines, the research related to service quality and customer satisfaction in the airline industry has been growing in interest. Several researchers have applied service quality theories and methods in the airline setting (Alotaibi, 1992; Ostrowski *et al.*, 1993; Sultan & Simpson, 2000; Chang & Yeh, 2002; Tsaur *et al.*, 2002). However, most of these studies assumed that service quality was the major determinant of passenger satisfaction and passenger behaviour, even though there are other important variables that influence airline service quality evaluation, passenger satisfaction and passengers' behavioural intentions.

There is some evidence that consumer behaviour may also be determined by perceived price, perceived value and corporate image of the service (Andreassen & Lindestad, 1998; Bloemer *et al.*, 1998; Nguyen LeBlanc, 1998; Oh, 1999; McDougall & Levesque, 2000; Varki & Colgate, 2001). However, many such variables have often been ignored in previous airline service studies. Ignoring or omitting important variables could cause problems in models of service quality and marketers need to consider important new variables to raise the predictive power of such models (Bagozzi, 1980; Cronin & Taylor, 1992). Therefore, it is necessary to consider important new variables that can influence the evaluation of airline service quality, passenger satisfaction and passengers' behavioural intentions. In order to explain air passengers' future behavioural intentions more accurately and to contribute to our knowledge of future airline service studies, all the variables discussed above are considered in this study.

This article aims to improve our understanding of air passengers' future behavioural intentions by proposing and testing a more comprehensive conceptual framework that considers perceived price, service quality, perceived value, passenger satisfaction, airline image and passengers' behavioural intentions simultaneously. In this article, we develop a structural equation model to study related effects simultaneously.

This article is organized as follows. A review of the research literature related to price, service quality, perceived value, customer satisfaction, and corporate image and the development of related hypotheses are discussed in the second section. The research methodology is described in the third section while the results from the data analysis are discussed in the fourth section. Managerial implications from the major findings are discussed in the fifth section followed by conclusions given in the sixth section.

Conceptual Background and Research Hypotheses

The proposed conceptual framework is illustrated in Figure 1. Its components – including perceived price, service quality, perceived value, customer satisfaction and corporate image – are discussed in this section. This review presents an overview of relevant literature leading to the establishment of the proposed conceptual framework.

Perceived Price

Price is an important factor for customer satisfaction because whenever customers evaluate the value of an acquired service, they usually think

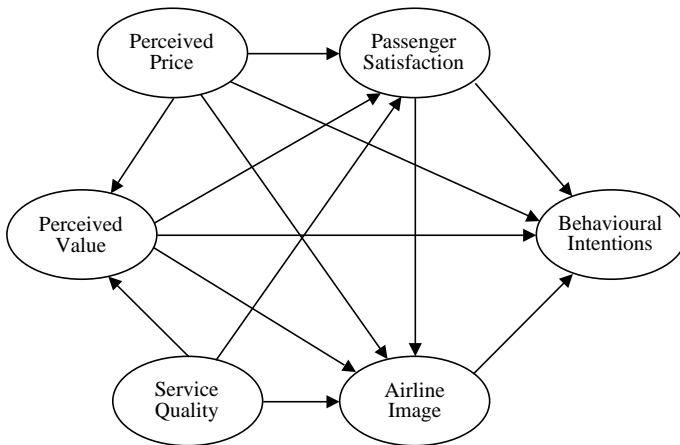


Figure 1. The proposed conceptual framework

of price (Anderson *et al.*, 1994). Even though perceived price would appear to be an important issue for customers, there is little in the services marketing literature about the relationship between perceived price and service quality. The effect of perceived price in service industries has been investigated by several researchers (Chen *et al.*, 1994; Oh, 1999; Varki & Colgate, 2001). These studies have shown that there are relationships between price, service quality, perceived value, customer satisfaction and behavioural intentions.

The price sensitivity of the demand for airlines is directly related to the possibilities of substitution for airlines. Most air passengers are sensitive to airline ticket price, therefore airlines have used price structure to differentiate market segments and objectives based on passenger price sensitivity (Stern, 1989). To date, most airlines have adopted a discriminatory pricing policy to alter passenger's buying behaviour and to respond to a competitive environment so that their revenue is maximized. Ticket price is the cost of making the purchase and is one of the most important factors that influence air passengers' satisfaction and buying behaviour. However, previous airline service studies have often ignored the effect of perceived ticket price; if anything, they have only focused on the effect of ticket price on passengers' choice of airline. Even though investigating the effects of airline ticket price on other important variables such as passenger satisfaction, perceived value, and airline image is a significant factor for airline marketers to develop their pricing strategies, the relationships between these variables have been overlooked in airline service studies. Accordingly, the following hypotheses are proposed:

- H1: Perceived price has a negative effect on passenger satisfaction.
- H2: Perceived price has a negative effect on perceived value.
- H3: Perceived price has a positive effect on airline image.
- H4: Perceived price has a negative effect on behavioural intentions

Service Quality and Customer Satisfaction

Service quality is a consumer's overall impression of the relative inferiority/superiority of the organization and its services (Bitner & Hubbert, 1994). Customer satisfaction is defined as a judgement made on the basis of a specific service encounter (Bolton & Drew, 1991; Cronin & Taylor, 1992). A number of researchers have attempted to understand the relationship that exists between satisfaction and service quality and their impact on customer purchase intentions (Bolton & Drew, 1991; Cronin & Taylor, 1992; Taylor & Barker, 1994).

In recent years, delivering high quality service to passengers is essential for airline survival. Service quality conditions influence an

airline's competitive advantage by retaining customer patronage, and with this comes market share, and ultimately profitability (Morash & Ozment, 1994). Airline service quality is a significant driver of passenger satisfaction, passenger loyalty, and passenger's choice of airline (Ritchie *et al.*, 1980; Alotaibi, 1992; Ostrowski *et al.*, 1993; Taylor & Barker, 1994; Young *et al.*, 1994; Wells & Richey, 1996). Therefore, the delivery of high service quality becomes a marketing requirement as competitive pressures on air carriers increase (Ostrowski *et al.*, 1993).

Customer satisfaction is a very important concept in marketing and it is the ultimate goal for service operations. Most companies assume that there is a strong relationship between customer satisfaction and consumer behaviour. Hence, it is believed that higher customer satisfaction leads to higher purchase intention and 'word-of-mouth' communication. Since competition created by deregulation in the airline industry has become more intensive, and as the notion of service quality in airline operations has consequently become of increasing importance, satisfaction in the airline industry has thus received much attention (Ostrowski *et al.*, 1993). In a competitive environment, satisfying passengers in transportation services has a beneficial effect on a carrier's long-term survival (Rhea & Shrock, 1987). Airlines should know how their services are meeting their passengers' needs and wants, because the extent to which passenger needs and wants are met has come to be called passenger satisfaction/dissatisfaction.

A number of studies have examined the relationship between service quality and customer satisfaction, and there have been much debate about the distinction and association between service quality and customer satisfaction. Previous studies generally agree that customer satisfaction and service quality are conceptually distinct (Bitner, 1990; Cronin & Taylor, 1992; Boulding *et al.*, 1993; Bitner & Hubbert, 1994). However, there have been debates about the causal order between service quality and customer satisfaction. Some researchers argue that service quality leads to customer satisfaction (Parasuraman *et al.*, 1988; Cronin & Taylor, 1992; Spreng & Mackoy, 1996), while others argue that customer satisfaction is an antecedent of service quality (Oliver, 1980; Bitner, 1990; Bolton & Drew, 1991). There are also some researchers who have concluded that there is no relationship between service quality and customer satisfaction (Churchill & Superant, 1982; Fornell, 1992; Teas, 1993).

Although the causal order of service quality and customer satisfaction has been researched empirically in the past, it is still an unsolved issue. The causal order may vary depending on particular settings and different situations. Therefore, it is worth studying the causal order

between service quality and customer satisfaction in an airline setting. In addition, it is important to investigate the effects of service quality and customer satisfaction on other important variables such as perceived value and corporate image in an airline setting. As a consequence, the following hypotheses are proposed:

- H5: Airline service quality has a positive effect on passenger satisfaction.
- H6: Airline service quality has a positive effect on perceived value.
- H7: Airline service quality has a positive effect on airline image.
- H8: Passenger satisfaction has a positive effect on airline image.
- H9: Passenger satisfaction has a positive effect on behavioural intentions.

Perceived Value

It has been proposed that future intentions are determined in part by perceived value (Bolton & Drew, 1991). In making the decision to return to the service provider, customers are likely to consider whether or not they received 'value for money'. The connection between perceived value and customer satisfaction or future intentions has been debated in the services marketing literature (McDougall & Levesque, 2000). While it is contended that value has a direct impact on how satisfied customers are with a supplier and that satisfaction depends on value, little attention has been paid to perceived value in evaluating services (Anderson *et al.*, 1994; Ravald & Grönroos, 1996; Limmink *et al.*, 1998). Even though significant research has been conducted on service quality and perceived value, the relationship between service quality and perceived value still remains a key issue in the service industry. In spite of the importance of perceived value as a form of assessment of services, there has been limited work conducted in the services marketing literature about the exact nature of perceived value and its influence on customer behaviour (Nguyen & LeBlanc, 1998).

Value-added services are ways in which companies can gain competitive advantage in the airline industry (Dennett *et al.*, 2000). For example, value-added strategies such as frequent flyer programmes increase the long-term value of the relationship with the airline, offering greater benefits to repeat passengers than to occasional passengers (Dube & Maute, 1998). The price to be paid for a service determines, in the passenger's mind, the level of quality to be demanded (Teboul, 1991). Airline passengers have raised their expectations with regard to the level of service quality, while seeking better value for their money. Offering good service to passengers may not be sufficient to

attract and retain passengers because passengers seek value as a combination of fares and quality. To gain a competitive advantage, airlines should investigate the role and the effect of value perceived by passengers. As a result, the following hypotheses are proposed:

H10: Perceived value has a positive effect on passenger satisfaction.

H11: Perceived value has a positive effect on airline image.

H12: Perceived value has a positive effect on behavioural intentions.

Corporate Image

Corporate image can be defined as perceptions of an organization reflected in the associations held in the consumer's memory (Keller, 1993). A company with a good image is more likely to stand out in the marketplace because it draws both repeat customers and trial users (Fombrun & Shanley, 1996). In the airline industry, a favourable image separates and distinguishes the company from its competitors. The more favourable an airline's image, the more likely passengers will assume that the services tendered by that airline are better, of higher quality and worth more in actual price (Dowling, 1994). The purpose of image in airlines is to reflect a distinctive competence in comparison to their competitors to allow the airline name, symbol/logo, or identity to mean something distinctive and with a corresponding appeal. Generally, passengers retain airline image in their memory. When passengers contemplate air travel, a favourable image of a specific airline can lead to a preferred choice among their choice set. Therefore, airline image is considered as a significant determinant of airline choice.

Several services marketing studies have identified corporate image as an important factor in the overall evaluation of the service and the company (Grönroos, 1984; Gummerrsson & Grönroos, 1988). Corporate image has an effect on customer's choice of company when service attributes are difficult to evaluate and it also influences customers' perception of the goods and services offered (Zeithaml & Bitner, 1996; Andreassen & Lindestad, 1998). The effect of corporate image on quality, satisfaction and loyalty has been investigated in previous papers. Nguyen and LeBlanc (1998) found that customers receiving higher levels of service quality will form a favourable image and value is found to have a positive impact on image. Bloemer *et al.* (1998) also revealed that image is indirectly related to loyalty via perceived quality.

Even though previous studies have noted the role and effect of corporate image, it is still unclear whether there is a direct relationship between image and consumer behaviour or whether this relationship is

mediated by satisfaction and perceived service quality (Bloemer *et al.*, 1998). Understanding the role of corporate image in the customer retention decision is a key issue that has received little attention in the service marketing area (Nguyen & LeBlanc, 1998). Neither the role nor the effect of corporate image in the airline industry have been fully investigated to date. Since airline image is an important factor that influences passengers' choice of airline and passenger loyalty, the role and the effect of airline image should be investigated. As a result, the following hypothesis is proposed:

H13: Airline image has a positive effect on behavioural intentions.

Research Methodology

Based on the review of the research literature with regard to perceived price, service quality, customer satisfaction, perceived value, and corporate image, a structural equation model has been developed to study related effects simultaneously in this article. The structural equation model, measurements, and samples used in this article are discussed below.

Structural Equation Model

Since this article investigates the effect of perceived price, airline service quality, perceived value, passenger satisfaction and airline image on passengers' behavioural intentions, the test of the hypothesized relationships presented in the conceptual framework was undertaken using structural equation modelling (Bollen, 1989). The structural equation model shown in Figure 2 is unique in that it considers new variables that are often ignored in airline service studies and also investigates previously untested relationships.

The model assumes a causal structure among a set of latent variables, and that observed variables are indicators of the latent variables. Perceived price, perceived value, service quality, passenger satisfaction, airline image and behavioural intentions are treated as latent variables with multiple indicator measures. The observed variables such as X1 and X2 in Figure 2 are measures of perceived price, perceived value, service quality, passenger satisfaction, airline image and behavioural intentions.

Measurements

The design of the survey questionnaire was based on multiple item measurement scales adopted from previous research. The measurement items were designed for the airline setting and used a seven-point Likert-type scale. Six constructs were included in the hypotheses that

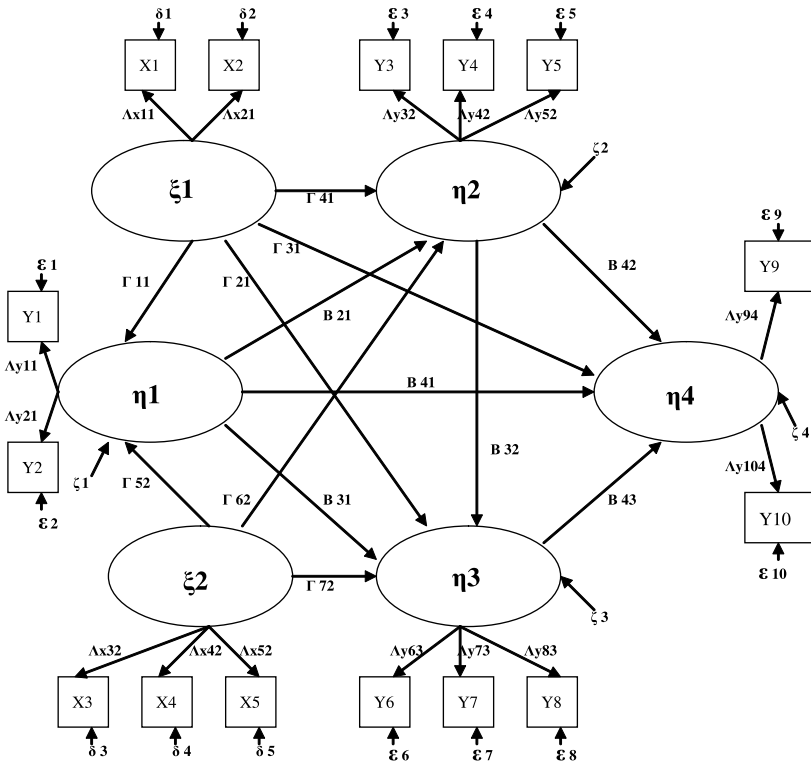


Figure 2. Structural Equation Model.

Note: η: vector of latent endogenous variables, Perceived value (η1), Passenger satisfaction (η2), Airline image (η3), Behavioural intentions (η4).

ξ: vector of latent exogenous variables, Perceived price (ξ1), Service quality (ξ2).

B: coefficients of effects among endogenous variables,

Γ: coefficients of effects of exogenous variables on endogenous variables,

Ay: matrix of coefficients or loadings of y on the latent endogenous variables,

Ax: matrix of coefficients or loadings of x on the latent exogenous variables,

ε: vector of residuals or errors, e: vector of errors of measurement of y, δ: vector of errors of measurement of x.

are tested: service quality, perceived price, perceived value, airline image, passenger satisfaction and behavioural intentions.

The perceptions of airline service quality vary and do not seem to fit any single existing quality model such as SERVQUAL or SERVPERF (Haynes & Percy, 1994). This is because the SERVQUAL or SERVPERF instrument does not address other important aspects of airline service such as in-flight meals, frequent flyer programmes, seat space and legroom. Service quality attributes should be selected to reflect the service environment investigated. Therefore, modifications

and adaptations should be made to selected questions and dimensions to make them more relevant to airline service quality. Against this background, this study endeavours to include the important determinants of airline service quality that have been neglected in the previous literature and service quality models.

Service quality was measured using 22 measurement items. This study has evaluated airline service quality based on SERVQUAL (Parasuraman *et al.*, 1988) but has developed specific dimensions that are suitable for airlines by modifying and adding new items important for evaluating airline service quality. To develop airline service quality measures, in-depth interviews and focus groups were held with airline staff and passengers. They were asked about airline services, particularly what kind of services airlines provide and passengers receive from initial flight reservation to arriving at the final destination. In addition, they were asked how SERVQUAL's dimensions and items could be adapted to measure airline service quality. Respondents were also asked to suggest service quality items that were not included in the SERVQUAL instrument. The airline service quality items drawn from these interviews were examined by academics familiar with the airline industry and questionnaire design. In addition, the service quality measurement items drawn from the interviews and academics' reviews were checked against other independent sources of literature related to service quality. These resulted in the development of service quality measurement items suitable for the airline industry.

Exploratory factor analysis was used for airline service quality measures to determine the dimension of airline service quality. In the factor analysis, principal components analysis with VARIMAX rotation was utilized. Only factors with eigenvalues greater than 1 were retained. The overall pattern of rotated factor loadings suggested a three-dimensional solution. Factors were labelled as follows: 'reliability and customer service' (Factor 1), 'convenience and accessibility' (Factor 2), and 'in-flight service' (Factor 3). The results of the factor analysis for service quality items is given in Table 1.

To check the validity of factors in the service quality construct, confirmatory factor analysis was employed to factors drawn from Australian international passengers. The results of this analysis are presented in Table 2. The loadings, their corresponding critical ratio, standardized loadings and goodness of fit measures are presented. The results of the confirmatory factor analysis demonstrate that factors drawn from the service quality construct fitted the data appropriately for Australian international passengers.

Service quality was measured by three observed variables, namely X3, X4 and X5. Each of these variables was calculated as the mean score of respondents' ratings of each item in each factor. For example,

Table 1. Factor analysis results

Factor	Variables	Factor loadings	Eigenvalue	Cummulative % of Variance
Factor 1 (reliability and customer service)	Courtesy of employee	.871	10.576	48.072
	Employees who are willing to help passengers	.855		
	Employees who have the knowledge to answer passengers' questions	.811		
	Give passengers personal attention	.723		
	Neat appearance of employee	.716		
	Safety of flying	.636		
	Sincere interest in solving problems	.623		
	On-time performance	.543		
Factor 2 (convenience and accessibility)	Convenience of reservation and ticketing	.791	1.548	55.106
	Promptness and accuracy of reservation and ticketing	.783		
	Check-in service	.664		
	Frequent flyer program	.602		
	Promptness and accuracy of baggage delivery	.586		
	Availability of non-stop flight	.505		
	Convenient flight schedule	.500		
	Seat allocation	.497		
Factor 3 (in-flight service)	The amount imposed for overweight baggage	.350	1.284	60.944
	Seating comfort	.833		
	Seat space and legroom	.824		
	Meal service	.709		
	In-flight entertainment services	.556		
	Up-to-date aircraft and in-flight facilities	.523		

there were eight measurement items in the first factor. As can be seen in Table 1, the eight measurement items were: ‘courtesy of employees’, ‘employees who are willing to help passengers’, ‘employees who have the knowledge to answer passengers’ questions’, ‘give passengers personal attention’, ‘neat appearance of employee’, ‘safety of flying’,

Table 2. Confirmatory factor loadings and fit statistics

Factor	Variables	Loadings	Standardized loadings
Factor 1 (reliability and customer service)	Courtesy of employees	1.000	0.850
	Employees who are willing to help passengers	1.096 (33.558)	0.883
	Employees who have the knowledge to answer passengers' questions	1.071 (26.255)	0.889
	Give passengers personal attention	1.047 (23.271)	0.829
	Neat appearance of employee	0.814 (18.880)	0.724
	Safety of flying	0.731 (16.919)	0.669
	Sincere interest in solving problems	.908 (20.269)	0.759
	On-time performance	0.767 (15.958)	0.640
Factor 2 (convenience and accessibility)	Convenience of reservation and ticketing	1.000	0.716
	Promptness and accuracy of reservation and ticketing	1.026 (27.491)	0.745
	Check-in service	1.140 (15.805)	0.751
	Frequent flyer program	0.954 (10.588)	0.501
	Promptness and accuracy of baggage delivery	0.997 (14.941)	0.709
	Availability of non-stop flight	1.008 (12.860)	0.611
	Convenient flight schedule	1.041 (14.796)	0.702
	Seat allocation	1.023 (14.221)	0.674
Factor 3 (in-flight service)	The amount imposed for overweight baggage	0.873 (10.935)	0.517
	Seating comfort	1.000	0.749
	Seat space and legroom	0.830 (21.653)	0.606
	Meal service	0.993 (16.080)	0.760
	In-flight entertainment services	0.933 (14.522)	0.686
	Up-to-date aircraft and in-flight facility	0.898 (15.750)	0.744

$\chi^2 = 821.457$ ($p < 0.001$, $df = 202$)
GFI = 0.870, AGFI = 0.837, TLI = 0.906, CFI = 0.918, RMR = 0.093

Note: Values in parentheses are critical ratios and all the values are significant ($p < 0.001$).

'sincere interest in solving problems' and 'on-time performance'. X3 is the average score of respondents' ratings on these eight items. The same method was applied to X4 and X5.

Perceived price was measured by two observed variables, X1 and X2, by asking passengers their perceptions of airline ticket price. For the perceived price variables, both an absolute measure of price perceptions and a comparative measure of price perceptions were used (Varki & Colgate, 2001).

Perceived value was measured by two observed variables, Y1 and Y2, by asking passengers two measurement items: 'Considering the services that this airline offers, are they worth what you paid for them?'; and 'The ticket price of this airline is reasonable'.

Passenger satisfaction was measured by three observed variables, Y3, Y4 and Y5, by asking passengers three measurement items: 'Overall, how satisfied are you with the airline's service quality?'; 'My choice to use this airline was wise one'; and 'I think that I did the right thing when I decided to use this airline'. The satisfaction measurement items were based on the literature review (Oliver, 1980).

Airline image was measured by three observed variables, Y6, Y7 and Y8, by asking passengers three measurement items: 'I have always had a good impression of this airline'; 'I believe that this airline has a better image than its competitors'; and 'In my opinion, this airline has a good image in the minds of passengers'. These measurement items were developed on the basis of previous research (Nha Gaston, 2001).

Behavioural intentions were measured by two observed variables, Y9 and Y10, using the passengers' intention to repurchase and willingness to recommend the airline to other people.

Samples

The survey was conducted at the international terminal (T3) of Sydney Airport in September 2003. The data were gathered from Australian international passengers who had admitted to having been on at least one international flight in the previous 12 months.

Of the total 600 questionnaires distributed to Australian international passengers, some 554 completed questionnaires were collected, but 53 questionnaires were incomplete, leaving 501 samples for data analysis. The passenger profiles are presented in Table 3. Survey samples are shown to be well distributed in terms of age, occupation and income factors.

Analysis and Results

The hypothesized relationships given in the structural equation model were tested via maximum likelihood estimator. Reliability and validity of the measures and the fitness of the conceptual model were first evaluated. To analyse the data and to verify the hypotheses, the Analysis of Moment Structures (AMOS) 4.01 statistics package was used.

Table 3. Passenger profiles

Attributes	Distribution	Sample number	Frequency (%)
Gender	Male	276	55.1
	Female	223	44.5
	Missing	2	0.4
Age	Less than 20	39	7.8
	20–29	137	27.3
	30–39	80	16.0
	40–49	82	16.4
	50–59	91	18.2
	60 and over	68	13.6
	Missing	4	0.8
Occupation	Professional	72	14.4
	Student	76	15.2
	Management	52	10.4
	Housewife	29	5.8
	Employee of company	97	19.4
	Government employee	38	7.6
	Private business	60	12.0
	Others	71	14.2
Missing	6	1.2	
Income	AUD 17 999 or fewer	43	8.6
	AUD 18 000–35 999	76	15.2
	AUD 36 000–53 999	106	21.2
	AUD 54 000–71 999	85	17.0
	AUD 72 000 or more	164	32.7
Missing	27	5.4	

Note: AUD is equivalent to USD 0.79 and €0.59 (March, 2005).

Reliability and Validity of Measures

Reliability refers to the extent to which a scale produces consistent results if repeated measurements are made (Malhotra *et al.*, 1996). To assess reliability, internal consistency methods are widely used and generally Cronbach's alpha is used to assess internal consistency. The Cronbach's alpha of each measure is presented in Table 4. The internal

Table 4. Reliability of measures

Measure	Service quality	Perceived price	Customer satisfaction	Perceived value	Airline image	Behavioural intentions
Alpha	.9510	.8335	.9425	.8571	.9077	.9452

consistency reliability of each measure was more than .8 which implies the reliability of the measure is very high.

The validity of scale refers to the extent to which differences in observed scale scores reflect true differences among objects on the characteristic being measured, rather than systematic or random error (Malhotra *et al.*, 1996). The content validity of the questionnaire was established through a theoretical review and pilot study. The correlation matrix was used for evaluating construct validity in this study. The correlation matrix of variables is presented in Table 5.

According to the correlation matrix, correlation is generally high among the variables that measure an identical conception. In addition, the correlation of the variables that measure an identical conception is higher than the correlation of the variables that measure a different conception. Therefore, the variables used in this model show a high convergent validity and discriminant validity.

Model Fitness

Generally in structural equation modelling, the fit of the model using Chi-square is not always straightforward because Chi-square is very sensitive to sample size. Because the Chi-square value is not independent of sample size, various kinds of fit indices have been developed that are supposedly independent of sample size (Marsh *et al.*, 1988; Hu & Bentler, 1995). Among various fit indices, the Tucker–Lewis index (TLI) (Tucker & Lewis, 1973; Bentler & Bonett, 1980) and the comparative fit index seem to be relatively unaffected by sample size (Marsh *et al.*, 1988). Due to the large sample size, Chi-square is not an appropriate measure of goodness-of-fit in this paper. Therefore, goodness-of-fit index (GFI), adjusted goodness-of-fit index (AGFI), TLI, comparative fit index (CFI) and root mean square error of approximation (RMSEA) were used (Table 6). The various fitness indices for the model suggests that the theoretical model provides an excellent fit.

Testing Hypotheses

The proposed conceptual model explained a substantial amount of variance in the key variables – 77% of variance in behavioural intentions and 58% of variance in airline image. The model also explained 33% of variance in perceived value and 66% of variance in passenger satisfaction. The conceptual model is tenable in that the amount of variance explained in most variables exhibits a high practical significance.

Except for three causal paths, all other hypothesized relationships were statistically significant ($p < 0.05$). The three statistically insignificant

Table 5. Correlation matrix

	X1	X2	X3	X4	X5	Y1	Y2	Y3	Y4	Y5	Y6	Y7	Y8	Y9	Y10
X1	1.000														
X2	.712*	1.000													
X3	.202*	.208*	1.000												
X4	.268*	.237*	.719*	1.000											
X5	.221*	.216*	.648*	.635*	1.000										
Y1	.238*	.235*	.475*	.461*	.445*	1.000									
Y2	.196*	.213*	.387*	.368*	.306*	.748*	1.000								
Y3	.242*	.181*	.649*	.580*	.616*	.563*	.407*	1.000							
Y4	.275*	.232*	.607*	.570*	.595*	.594*	.418*	.805*	1.000						
Y5	.278*	.248*	.634*	.584*	.602*	.606*	.434*	.810*	.911*	1.000					
Y6	.340*	.301*	.455*	.444*	.469*	.457*	.398*	.517*	.639*	.615*	1.000				
Y7	.306*	.250*	.395*	.411*	.459*	.404*	.275*	.539*	.626*	.607*	.725*	1.000			
Y8	.323*	.289*	.448*	.449*	.465*	.464*	.328*	.563*	.639*	.626*	.749*	.811*	1.000		
Y9	.220*	.193*	.482*	.446*	.438*	.600*	.435*	.627*	.728*	.745*	.600*	.626*	.660*	1.000	
Y10	.244*	.213*	.505*	.466*	.482*	.627*	.466*	.663*	.744*	.758*	.634*	.777*	.695*	.896*	1.000

Note: *Correlation is significant at the 0.01 level (two-tailed).

Table 6. Goodness of fit measures

Fit measure	χ^2	GFI	AGFI	TLI	CFI	RMSEA
Value	164.448 (d.f. = 77, $p < .001$)	0.959	0.936	0.982	0.987	0.048

paths were the effect of perceived price on passenger satisfaction, the effect of perceived value on airline image and the effect of service quality on airline image. In this model, perceived price, perceived value, passenger satisfaction and airline image were each found to have a direct effect on air passengers' future behavioural intentions (see Figure 3 and Table 7).

Perceived price was found to have a negative effect on behavioural intentions and was found to have a positive effect on airline image and perceived value. This result indicates that if air passengers think that

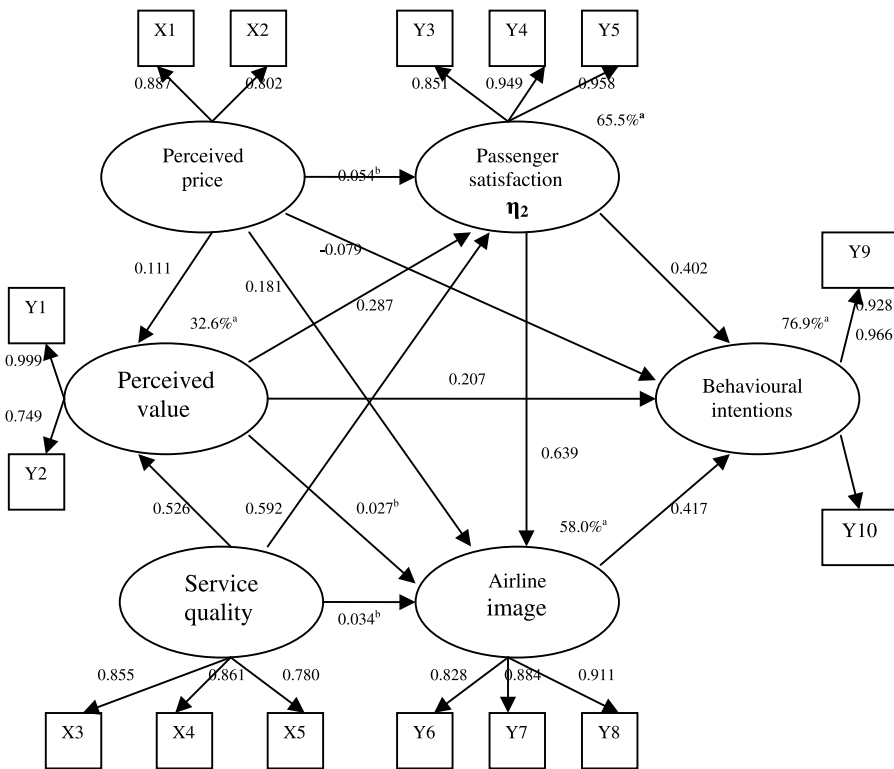


Figure 3. Results of the Structural Equation Model. Note: ^a The amount of variance explained, ^b statistically insignificant ($p > .05$).

Table 7. Results of hypothesis testing

Relationships	Parameter estimates	Critical Ratios	P-values
Perceived price → Passenger satisfaction	0.054	1.544	0.122
Perceived price → Perceived value	0.111	2.477	0.013
Perceived price → Airline image	0.181	4.452	0.000
Perceived price → Behavioural intentions	-0.079	-2.577	0.010
Service quality → Passenger satisfaction	0.592	12.741	0.000
Service quality → Perceived value	0.526	11.558	0.000
Service quality → Airline image	0.034	0.544	0.586
Passenger satisfaction → Behavioural intentions	0.402	8.537	0.000
Perceived value → Passenger satisfaction	0.287	7.502	0.000
Perceived value → Airline image	0.027	0.621	0.535
Perceived value → Behavioural intentions	0.207	6.305	0.000
Passenger satisfaction → Airline image	0.639	9.412	0.000
Airline image → Behavioural intentions	0.417	9.122	0.000

the ticket price is low, they are more likely to fly the airline again and recommend the airline to others. This finding also suggests that perceived price is one of the key drivers of perceived value and airline image. Although a number of previous studies in other service industries have hypothesized a negative influence of perceived price on perceived value, this study revealed that air passengers' perception of ticket price had a positive effect on the perceived value of airline service. This result is consistent with the result of Bojanic's (1996) study, which found that perceived price had a significant positive effect on perceived value in the luxury segment of the hotel industry. The implication is that ticket price is positively correlated with service quality in the airline industry. Passengers who pay more expect to receive better service. For example, passengers that use business class or first class receive better services when compared with economy class passengers. Therefore, the perception of ticket price can have a positive effect on perceived value in the airline industry.

Perceived value had a positive effect on passenger satisfaction and behavioural intentions. This finding implies that if passengers think they are getting high value from the services they receive, they are more likely to be satisfied, fly with the airline again and recommend the airline to others. Passenger satisfaction had a positive influence on airline image and behavioural intentions. This finding suggests that satisfied passengers usually form a strong image of the airline, will travel on the same airline again in the future and recommend the airline to others. Airline image had a positive effect on behavioural intentions. This implies that passengers who form a positive overall impression of

the image of the airline are more likely to fly with the airline again and recommend the airline to others.

Service quality had a positive influence on perceived value and passenger satisfaction. This implies that passengers' perception of service quality is one of the key drivers of passenger satisfaction and perceived value. The analysis also showed that service quality had a positive influence on behavioural intentions through perceived value and passenger satisfaction. This finding suggests that airline service quality influences passengers' repurchase intentions and the intention to recommend the airline to others indirectly by means of perceived value and passenger satisfaction.

Managerial Implications

The results of this article suggest six practical implications for airline service management. First, this study has important implications regarding airline service quality. The analysis showed that service quality was a significant driver of passenger satisfaction and perceived value, which are directly related to passengers' behavioural intentions. Airlines should realise that improvements in service quality enhance passengers' repurchase intentions and word-of-mouth communications through increased passenger satisfaction and value perception. Airlines should strive to develop strategies for improving service quality. To improve service quality, airlines should seek to take effective measures and set quality standards that guarantee good quality of service. Moreover, airlines should listen to their passengers and their employees. Passengers and airline employees are very important sources of information for airlines to improve service quality, because they are in close contact with each other. Passengers' compliments and complaints are taken by airline employees, and such feedback can then be used as a good source for improving service quality and developing service strategies. Also, airline employees should be trained to recognise and to respond to passengers effectively because many negative and positive influences come from human interaction between airline employees and passengers.

Second, this study showed that passenger satisfaction had a significant effect on airline image and passengers' behavioural intentions. Passenger satisfaction does not depend on service quality alone, but it also depends on passengers' value perceptions. Given this finding, airlines should ensure that higher levels of quality are worthwhile to the extent that passengers believe that value is being enhanced. Therefore, airlines can ensure that passengers' perception of value contributes to good levels of satisfaction.

Third, this study found that Australian international passengers' behavioural intentions were directly influenced by airline ticket price. Therefore, marketers in the airline industry need to manage the price perceptions of their passengers actively because airlines can influence passengers' value perceptions, passenger satisfaction, airline image formation and passengers' behavioural intentions by setting the ticket price.

Fourth, airlines should recognise perceived value as a contributing factor to passenger satisfaction and passengers' behavioural intentions. Passengers are concerned about ticket prices, and that concern is reflected in passengers' assessment of perceived value. Therefore, the more important perceived value is to passenger satisfaction and passengers' behavioural intentions, the more price changes have an influence on passengers' behavioural intentions. The implication for airlines is that they should understand trade-offs are required between service quality and ticket prices before they develop marketing strategies, and then they should develop strategies which enhance passengers' value perceptions (such as having special promotions, setting appropriate ticket prices for services, conducting passengers in a consistent and caring manner, providing beneficial frequent flyer programmes to passengers, and so on).

Fifth, this study has important implications regarding airline image. The analysis showed that airline image had a significant positive effect on passengers' behavioural intentions. This indicates that passengers might respond to strategies that highlight a favourable image in their choice of airline. Therefore, the inference for airlines is to continue to emphasize building a favourable image as a means of improving passengers' repurchase rate and 'word-of-mouth' communication. In particular, airlines should have a relative attractiveness in their image which is significantly different from other airlines in order to attract new passengers or retain existing passengers.

Finally, the most important element for airlines to understand is the relative importance of the drivers of passengers' future behavioural intentions. Perceived value, perceived ticket price, passenger satisfaction and airline image were each found to influence passengers' future behavioural intentions directly. However, the relative importance of each driver was found to vary. Hence, airlines should utilise their resources to improve their more important drivers that will enhance passengers' future behavioural intentions.

Conclusion

This article has examined the effects of perceived ticket price, airline service quality, perceived value, passenger satisfaction and airline

image on passengers' future behavioural intentions. The conceptual framework provided a tenable structure to studying passengers' behavioural intentions in that it demonstrated an excellent fit and the amount of variance explained in most variables exhibited a highly practical significance. Therefore, the framework is a valuable basis for understanding passengers' behavioural intentions and contributes to our knowledge of future passenger behaviour studies in airline service marketing.

Based on the conceptual framework of the linkages between constructs, all hypothesized relationships appeared to be statistically significant except for three causal paths. This study disclosed that perceived price, service quality, perceived value, passenger satisfaction, and airline image each had a significant influence on Australian international passengers' future behavioural intentions. These variables were directly or indirectly related to Australian international passengers' repurchase intentions and 'word-of-mouth' communications.

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