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An empirical analysis of customer satisfaction in international air travel

Abstract

Since the September 11, 2001 terrorist attacks, the Iraq War, and the outbreak of SARS and the bird flu in the Far East and Canada, the air travel industry has been severely depressed. Moreover, "no-frills" airlines such as Pacific Blue and Freedom Air emerged with a value proposition that was radically different from the branding and service offers of the more conventional airlines, such as Singapore Airlines. The combination of these three events poses a competitive threat for many high-frills international airlines as they seek methods to satisfy their customers. This study investigates the factors that influence passengers' satisfaction and behavioral intentions in international air travel. The study examines which dimensions have a positive influence on service quality and which dimensions have the most and least important impact on service quality in international air travel, as perceived by airline passengers.

The findings of this study are based on the analysis of a sample of 428 respondents. The dimensionality of perceived service quality in international air travel was explored and seven dimensions were identified. These dimensions include timeliness, assurance, convenience, helpfulness, comfort, meals, and safety and security. The findings reveal that these seven dimensions are positively related to perceived service quality in international air travel, and of these dimensions, safety and security is the most important dimension. Timeliness is the least important dimension as perceived by airline passengers. In addition, the findings indicate that passengers' perception of international air travel service quality will differ according to passengers' age, gender, income, occupation and marital status.

Keywords: behavioral intentions, customer satisfaction, service quality, airline, air travel.

Introduction

Air travel has always been classified as one of the more intangible service industries (Kloppenborg and Gourdin, 1992; Shostack, 1977). This classification has been attributed to the industry exhibiting the five distinguishing characteristics of services as summarized by Clemes, Mollenkopf, and Burn (2000). The air travel industry is part of a steadily growing service sector (Lovelock, Patterson, and Walker, 2004). Ostrowski, O'Brien, and Gordon (1993) suggest that the growth of the service sector not only offers business opportunities but also poses competitive threats for many service marketers, and this is particularly the case for the air travel industry.

Traditionally, the airline industry was heavily regulated by governments on where and how airlines could operate (Piercy, 2001). However, the 1978 Airline Deregulation Act changed the competitive structure of the airline industry (Levin, 1987; Bailey, Graham, and Kaplan, 1985). Airline companies were allowed to set prices as well as enter and exit the industry upon meeting insurance and safety requirements. This limited revolution in the freedom for airlines to compete led to many new entries to the industry, and some considerable carnage.

Customer satisfaction in airline operations has become critically important and Dennett, Ineson, Stone, and Colgate (2000) suggest that as competition created by deregulation has become more in-

tense, service quality in the airline industry has also received more attention. The delivery of a high level of service quality by airline companies became a marketing requisite in the early 1990s, as competitive pressures continued to increase. Most airlines began to offer various incentives, such as the frequent flyer programmes, in an effort to build and maintain the loyalty of customers (Miller, 1993). Airline companies also attempted to differentiate their services through the use of computerized reservation systems which were also designed to create customer loyalty in the distribution channels (Lee and Cunningham, 1996). However, despite the airlines' efforts to differentiate their services, an extensive survey of frequent fliers conducted by Ott (1993) revealed that consumers did not perceive any difference from one carrier to another. Ostrowski et al. (1993) noted that when all airline companies have comparable fares and matching frequent flyer programs, the company with better perceived service will draw passengers from other carriers.

The purpose of this research is to examine the service quality dimensions of high-frills (full service) international air travel that are perceived to be important by airline passengers. The study determines which passengers' perceived service quality dimensions have a positive influence on service quality and which dimensions have the most and least important impact on service quality in international air travel as perceived by airline passengers.

The study also examines the relationship between service quality, price, and customer satisfaction. The effect of customer satisfaction on future behavioral intentions is also assessed.

1. Literature review

1.1. Customer satisfaction. Customer satisfaction has become a key intermediary objective in service operations due to the benefits it brings to organizations (Ranaweera and Prabhu, 2003). The importance of customer satisfaction is derived from the generally accepted philosophy that for a business to be successful and profitable, it must satisfy customers (Shin and Elliott, 2001). Previous research has demonstrated that satisfaction is strongly associated with re-purchase intentions (Cronin and Taylor, 1992; Fornell, 1992). Customer satisfaction also serves as an exit barrier, helping a firm to retain its customers (Fornell, 1992; Halstead and Page, 1992). Several studies have concluded that it costs more to gain a new customer than it does to retain an existing one (Blodgett, Wakefield, and Barners, 1995; Gummesson, 1994). In addition, customer satisfaction also leads to favourable word-of-mouth publicity that provides valuable indirect advertising for an organization (Halstead and Page, 1992; Fornell, 1992).

In many industries, having satisfied customers also means that organization receives fewer complaints (Fornell, Johnson, Anderson, Cha, and Bryant, 1996; Spreng, Harrell, and Mackoy, 1995), hence reducing costs in handling failures. Researchers also maintain that satisfied customers are willing to pay more for the benefits they receive and are more likely to be tolerant of an increase in price (Fornell et al., 1996; Anderson, Fornell, and Lehmann, 1994). Shin and Elliott (2001) concluded that, through satisfying customers, organizations could improve profitability by expanding their business and gaining a higher market share as well as repeat and referral business.

1.2. The relationship between satisfaction and service quality. To achieve a high level of customer satisfaction, most researchers suggest that a high level of service quality should be delivered by the service provider as service quality is normally considered an antecedent of customer satisfaction (Cronin, Brady, and Hult, 2000; Anderson et al., 1994; Cronin and Taylor, 1992). However, the exact relationship between satisfaction and service quality has been described as a complex issue, characterized by debate regarding the distinction between the two constructs and the casual direction of their relationship (Brady, Cronin and Brand, 2002). Parasuraman, Zeithaml, and Berry (1994) concluded that the con-

fusion surrounding the distinction between the two constructs was partly attributed to practitioners and the popular press using the terms interchangeable, which make theoretical distinctions difficult.

Interpretations of the role of service quality and satisfaction have varied considerably (Brady et al., 2002; Cronin and Taylor, 1992; Parasuraman, Zeithaml, and Berry, 1988). Parasuraman et al. confined satisfaction to relate to a specific transaction as service quality was defined as an attitude. This meant that perceived service quality was a global judgment, or attitude, relating to the superiority of the service.

Cronin and Taylor (1992) argued against Parasuraman et al.'s categorization. Cronin and Taylor (1992) found empirical support for the idea that perceived service quality led to satisfaction and argued that service quality was actually an antecedent of consumer satisfaction. Cronin and Taylor (1992) asserted that consumer satisfaction appeared to exert a stronger influence on purchase intention than service quality, and concluded that the strategic emphasis of service organizations should focus on total customer satisfaction programs. The authors reasoned that consumers may not buy the highest quality service because of factors such as convenience, price, or availability and that these constructs may enhance satisfaction while not actually affecting consumers' perceptions of service quality.

Cronin and Taylor (1994) later conceded that the directionality of the service quality/satisfaction relationship was still in question and that future research on the subject should incorporate multi-item measures. The authors suggested restricting the domain of service quality to long-term attitudes and consumer satisfaction to transaction-specific judgments. However, Bitner and Hubbert (1994) determined that service encounter satisfaction was quite distinct from overall satisfaction and perceived quality. The authors concluded that the constructs exhibited independence.

Adding to the debate about the distinction between service quality and satisfaction, customer satisfaction has also been operationalized as a multi-dimensional construct along the same dimensions that constitute service quality (Sureshchandar, Rajendran, and Anantharaman, 2002). Despite strong correlations between service quality and customer satisfaction in their study, the authors determined that the two constructs exhibited independence and concluded that they were in fact different constructs, at least from the customer's point of view.

Brady and Cronin (1992) had endeavored to clarify the specification and nature of the service quality

and satisfaction constructs and found empirical support for the conceptualization that service quality was an antecedent of the superordinate satisfaction construct. In addition, the authors found that explained a greater portion of the variance in consumers' purchase intentions than service quality.

A reverse casual relationship has also been hypothesized between the two constructs. Rust and Oliver (1994) maintained that while quality was only one of many dimensions on which satisfaction was based, satisfaction was also one potential influence on future quality perceptions.

1.3. Service quality. Although the definitions of service quality vary, the definitions are all formulated from the customer perspective: that is, what customers perceive are important dimensions of quality (Lewis, 1989). Gronroos (1982) and Parasuraman, Zeithaml and Berry (1988) were the pioneers in the conceptualization of the service quality construct, these authors maintained that the overall perception of quality was a disconfirmation of a customer's expectation and his/her evaluation of a service. Parasuraman et al. (1988) developed a disconfirmation measurement, the SERVQUAL instrument, to measure service quality and its dimensions.

However, Cronin and Taylor (1992) argued that service quality should be conceptualized as "similar to an attitude" approach and should be operationalized by the "adequacy-importance" model. Cronin and Taylor (1992), using a performance-based approach, developed the SERVPREF measurement instrument. Cronin and Taylor (1994) maintained that performance-based measurements display a slightly higher predictive power of customer perceptions of service quality. Other empirical researchers (Pitt, Watson, and Kavan, 1997; Babakus and Boller, 1992) also provide evidence that the performance-based measure is superior. Moreover, Zeithaml, Berry, and Parasuraman (1993) also conceded that the performance-based measurement was more appropriate if the primary purpose of research was an attempt to explain the variance in a dependent construct.

The dimensions of service quality have also been debated in the literature. For example, Gronroos (1982) proposed technical (the tangible aspects of service delivery) and functional (the expressive performance of the service) qualities as two critical dimensions of service quality. Alternatively, Parasuraman et al. (1988) proposed five service quality dimensions, namely, tangibles, reliability, responsiveness, assurance and empathy. Rust and Oliver (1994) developed a three-component dimen-

sional model and concluded that the service product (i.e. technical quality), the service delivery (i.e. functional quality), and the service environment were critical dimensions of service quality. Dabholkar, Thorpe, and Rentz (1994) tested a hierarchical conceptualization of retail service quality that proposed three levels: (1) customers' overall perceptions of service quality; (2) primary dimensions; and (3) subdimensions. Brady and Cronin (2001) adopted the view that service quality perceptions were multidimensional and identified the primary dimensions of their model based on Rust and Oliver's (1994) findings. In Brady and Cronin's (1992) conceptualization, each primary dimension has three subdimensions that define the basis of service quality perceptions and customers evaluate the reliability, responsiveness, and empathy aspects of these subdimensions. The aggregate evaluations of the subdimensions form their perceptions of an organization's performance on each of the three primary dimensions, and those perceptions then lead to an overall service quality perception. The debate on service quality dimensions is still ambiguous, but it is generally accepted that perceptions of service quality are multidimensional and the dimensions are industry-specific.

1.4. Socio-demographic characteristics, perceptions of air travel service quality and customer satisfaction. Peterson and Wilson (1992) suggested that understanding what determined customer satisfaction and knowing what variables and/or factors related to customer satisfaction were a prerequisite to effectively interpret and utilize customer satisfaction ratings. Socio-demographic variables such as income, age, social class, gender, occupation, education, and marital status have been identified in the literature as having a significant influence on the dimensions of service quality (Clemes, Ozanne, and Lawrenson, 2001; Oyewole, 2001). Oyewole (2001) studied the influence of demographic variables on customer satisfaction with services in the air travel industry. The study revealed that occupation (managers of enterprises), marital status (married passengers), gender (men), and education (less educated passengers) groups exerted significant influences on customer satisfaction with several services provided by the airline passengers travelled with, while age and household income had no apparent influence on satisfaction.

A private survey by British Airways in 1990 reported that women frequently felt that flying was made easier and more comfortable for men as a result of a privileged interaction between men and female crew members (Westwood, Pritchard and Morgan, 1999). Westwood, Pritchard and Morgan (1999) further explored the perceived needs of

United Kingdom male and female business airline passengers and concluded that the airline industry failed to effectively cater for the businesswomen segment.

1.5. Price and customer satisfaction. Anderson, Fornell and Lehmann (1994) emphasized perceived price as an important factor of consumer satisfaction. Zeithaml and Bitner (1996) suggested that the extent of satisfaction was broader than that of service quality assessment and was subject to several factors, such as service quality, product quality, price, situation, and personal attributes. Lee and Cunningham (1996) noted that service quality alone was not a sufficient condition for the establishment of customer loyalty because customers were always conscious of cost/benefit trade-off relationships.

Generally, the lower the perceived price and sacrifice, the more satisfaction with the perceived price and the overall transaction is created (Zeithaml, 1988). Oliver (1997) noted that consumers usually judged price and service quality by the concept of “equity”, then generated their satisfaction or dissatisfaction level, therefore, a lower monetary price or perceived price does not guarantee higher satisfaction.

2. Conceptual model

Figure 1 explains the relationship between customer satisfaction, service quality, price, and socio-

demographics and has been conceptualized based on Zeithaml’s (1988) means-end model and Parauraman et al.’s (1994a) satisfaction model, in which perceived service quality, perceived product quality, and perceived price fairness are three abstract concepts of a higher hierarchy that serves as the basis to form consumer satisfaction. For air travel, product and service quality are based on the nature of the airline service product itself, hence, the variables of product quality and service quality are combined into one variable, namely, service quality (Natalisa and Subroto, 2003). Conceptualization of the model also reflects Brady and Cronin’s (2001) multidimensional model. Furthermore, customers’ socio-demographic characteristics are likely to influence their level of satisfaction towards the services they received (Peterson and Wilson, 1992). Thus, in Fig. 1, service quality and price are the independent variables and customer satisfaction is the dependent variable.

Athanassopoulos et al. (2001) examined the impact of customer satisfaction on customers’ behavioral responses and reported that customer satisfaction had direct effects on three variables (decisions to stay with the existing service provider, engagement in word-of-mouth communications, and intentions to switch service providers). Hence, it is shown in Figure 1 that customer satisfaction directly affects customers’ future behavioral intentions

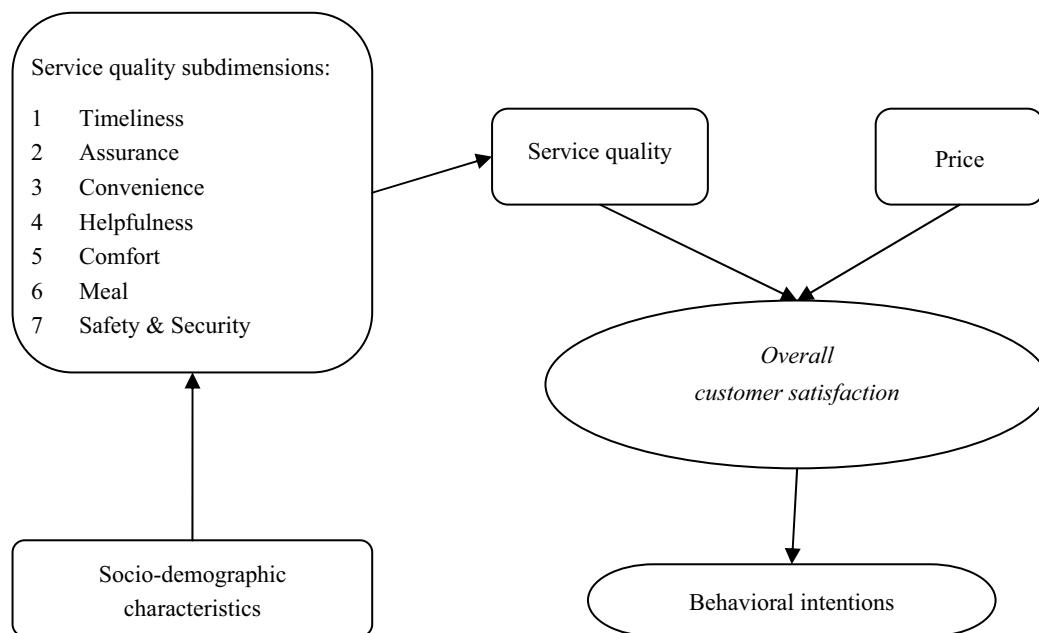


Fig. 1. Customer satisfaction conceptual model in the air travel industry

Researchers who used the SERVQUAL model to examine service quality in the air travel industry found that reliability was the most important service quality dimension and a significant determinant of passengers’ satisfaction (Sultan and Simpson, 2000; Kozak, Karatepe, and Avci, 2003; Natalisa

and Subroto, 2003). As Young et al. (1994) stated, “reliability was a surrogate for on-time performance/timeliness in the air travel industry”. This study renamed the ‘reliability’ dimension as ‘timeliness’ since the items that involves in the ‘timeliness’ dimension proposed in this study

mostly concern the speed and promptness of the service. Thus, Hypothesis 1 is formulated as follows:

H1: Timeliness has a positive influence on service quality in international (high-frills) air travel.

Gilbert and Wong (2002) attempted to identify the service quality dimensions that matter most to airline passengers, in terms of reliability, assurance, facilities, employees, flight patterns, customization and responsiveness, and reported that passengers consistently ranked 'assurance' as the most important service quality dimension. Furthermore, Natalisa and Subroto (2003), who studied the effects of management commitment to service quality on the customers' level of satisfaction in domestic airlines, also found that assurance had the strongest effect on the level of customers' satisfaction. Thus, Hypothesis 2 is formulated as follows:

H2: Assurance has a positive influence on service quality in international (high-frills) air travel.

Kloppenborg and Gourdin (1992) and Gourdin and Kloppenborg (1991) reported that passengers viewed convenient check-in, convenient departure and arrival times, and convenient ticket reservation as important service quality factors. These findings are supported by Ostrowski et al. (1993), who examined issues related to service quality and customer loyalty in the commercial airline industry and found that the primary factor influencing customer choice of a benchmark carrier was schedule convenience. Young et al. (1994) investigated the underlying dimensions of service quality in air travel industry, and determined using factor analysis, that convenient flight connections were one of the most important industry-based measures of service quality. They also reported that convenient flight connections were a reliable predictor of satisfaction in airline travel. Thus, Hypothesis 3 is formulated as follows:

H3: Convenience has a positive influence on service quality in international (high-frills) air travel.

Passengers appeared to expect airline personnel to be responsive and prepared to meet their requests and, most importantly, airline employees were expected to respond to customer needs in a constructive and considerate manner (Sultan and Simpson, 2000). In a survey conducted by Sultan and Simpson (2000), several passengers commented that many flight attendants appeared exceptionally bothered by work, and the service provided was spasmodic. O'Brien, Gennaro and Summers (1976) studied the dimensions of air travel service quality, and found that the 'helpfulness' dimension was the

most important service quality dimension in service quality in air travel. Thus, Hypothesis 4 is formulated as follows:

H4: Helpfulness has a positive influence on service quality in international (high-frills) air travel.

Several studies found that airline passengers perceived in-flight comfort, such as having enough knee and leg room and having a comfortable seat, to be important issues and passengers had high expectations of performance on these factors (Young et al., 1994; Kloppenborg and Gourdin, 1992). Thus, Hypothesis 5 is formulated as follows:

H5: Comfort has a positive influence on service quality in international (high-frills) air travel.

Meals have been consistently taken into consideration by researchers when measuring passengers' perceived service quality in the air travel industry (Chang, Lim, Jeon, Ji, and Seo, 2002; Young et al., 1994). Although meals were not reported to be the most important dimension in air travel in any of the studies, Chang et al. (2002) found that meals had a significant effect on the overall evaluation of customer satisfaction and their repurchasing intentions. Thus, Hypothesis 6 is formulated as follows:

H6: Meals has a positive influence on service quality in international (high-frills) air travel.

A 1988 study in the United States, revealed that eighty-two percent of 1000 adults described the issue of airline safety as a "serious problem" (Boston Globe, 1988). Bitner (1990) suggested that some people considered airline travel threatening, and to these people, boarding an airplane was a life-and-death issue; hence safety and security needs were critical. Comm (1993) reported that airline safety and security precautions were ranked as two of the most important attributes used in airline choice. The hijackings of United States airplanes on September 11, 2001, decreased consumer confidence in the safety and security of air travel (Floyd, Gibson, Pennington-Gray, and Thapa, 2003). Simmons Market Research (2001) assessed the immediate after-shocks for those respondents who had air travel plans during the next twelve months, 39% noted the events of September 11 would have a large to very large effect on their travel plans. At the beginning of 2003, the Iraq War, the SARS epidemics and bird flu in the Far East and Canada have led more consumers to avoid air travel due to safety and security concerns (Sivak and Flannagan, 2003). Thus, Hypothesis 7 is formulated as follows:

H7: Safety and security have a positive influence on service quality in international (high-frills) air travel.

Zeithaml, Berry, and Parasuraman (1993) argued that customers' perception of service quality was dependent on a number of antecedents, such as personal characteristics. The perception of passengers towards air travel services may differ because of the passengers' personal characteristics (Oyewole, 2001). Socio-demographic variables such as income, age, gender, occupation, education, and marital status have been identified in the literature as having a significant influence on the dimensions of service quality (Oyewole, 2001; Clemes et al., 2001). In addition, several researchers found that some of the socio-demographic factors tend to exert a significant influence on overall customer satisfaction with airline services (Oyewole, 2001; Westwood, Pritchard, and Morgan, 1999). Hence, Hypothesis 8 is formulated as follows:

H8: Passengers' perceptions of international (high-frills) air travel service quality will differ according to their socio-demographic characteristics (age, gender, income, occupation, education and marital status).

Price was the dominant variable in airline competition during the early and mid 1980s, however, the delivery of high service quality became a marketing requisite in the early 1990s, as competitive pressures increased (Young et al., 1994). Anderson et al. (1994) found that the impact of quality on overall customer satisfaction is greater than that of perceived price in seven industry sectors, including air transportation. In 1997, International Air Transport Association (IATA) carried out a research in North America, Europe and Asia, and found that passengers favoured punctuality (65%) and scheduling (52%) over price (37%) (see Collis, 1998). In another study conducted by Natalisa and Subroto (2003), the authors showed that the five SERVQUAL dimensions positively affected the customers' level of satisfaction while the customers did not differentiate their levels of satisfaction or dissatisfaction on price. Thus, Hypothesis 9 is formulated as follows:

H9: Service quality has a greater impact on customer satisfaction than price in international (high-frills) air travel.

The relationship between customer satisfaction and profits is very complex and includes many intermediate links (Zeithaml et al., 1996; Zahorick and Rust, 1992). One such link is the relationship between customer satisfaction and behavioral responses (Zeithaml et al., 1996; Zahorick and Rust, 1992). Rust and Zahorick (1993) found customers' switching behavior was attributed to the poor perceptions of quality and overall dissatisfaction with

the services provided by the service providers. Similarly, Fornell et al. (1996) found that dissatisfied customers are more likely to spread negative comments by word-of-mouth. Conversely, satisfied customers are likely to engage in favourable behavioral responses (Swanson and Kelly, 2001). Hence, Hypothesis 10 is formulated as follows:

H10: High level of customer satisfaction is positively related to positive future behavioral intentions.

3. Methodology and data

3.1. Questionnaire development. The questionnaire was divided into five sections, the first four sections (Sections A, B, C, and D) asked respondents to evaluate their overall experiences they received from their last international airline flight. The questions were phrased in the form of statements scored on a 5-point Likert type scale, ranking from 1 "strongly disagree" to 5 "strongly agree". For several of the questions, based on the recommendations of Luzar, Diagne, Gan, and Henning (1995) and Lynne, Casey, Hodges, and Rahmani (1994) the scales have been reversed coded because the questions were posed in a negative manner. Section E contained questions regarding respondents' socio-demographic characteristics including age, purpose of visit (business or non-business travellers), gender, education, occupation, education, frequency of flying, marital status, and income. Prior to distribution of survey, a pre-test of the questionnaire was conducted by randomly surveying 30 passengers who had sufficient experience in international air travel. The data gathered was used to assess the reliability of the items used in the questionnaire. The Cronbach's alpha for the summated scales were greater than 0.60 (Timeliness, 0.859; Assurance, 0.844; Convenience, 0.612; Helpfulness, 0.908; Comfort, 0.900; Meals, 0.940; Safety and Security, 0.775; Online Ticket Reservation, 0.891) and are considered to be reliable (Churchill, 1979). The 'in-flight information' dimension, however, had a Cronbach's alpha score that was lower than 0.6. Although "online ticket reservation" had a Cronbach's Alpha of 0.891, it was not included in the later stage of the analysis. This is because a large percentage of the sampled respondents made their ticket reservations through travel agents and not online.

3.2. Data collection. A sample size of at least 387 respondents was considered adequate as this provides a 95% confidence level. This determined sample size also exceeded the observation/variable ratio of ten, which also reduces the influence of the statistical assumptions associated with ANOVA (Winer, 1962). After pre-testing procedures, a personalized

cover letter explaining the purpose of the study, the voluntary nature of participation, and an assurance about the confidentiality of the responses and a questionnaire were distributed to 500 international airline passengers. The data were collected from a convenience sample of individuals, with restrictions that respondents must have travelled in an international flight in last 12 months prior to the data collection period and aged 18 years and above. Of those passengers, approximately 455 (91%) passengers agreed to take part in the survey, and 441 passengers (88.2%) returned the survey. The final sample consisted of 428 (85.6%) responses, as 13 (2.6%) responses were unusable and, therefore, excluded.

3.2.1. *Descriptive statistics.* A profile of the sample respondents' travelling experiences are presented in Table 1. Approximately 25% of the respondents travelled with Air New Zealand and 24.3% travelled with Qantas Airways in their last overseas trip. The respondents' main purpose of travel was pleasure (51.4%), and 91.8% of the respondents were in economy class. The majority of the respondents (56.5%) travelled 0~2 times annually. The most important factors they considered when choosing an airline were price (44.4%), safety and security (14.7%), and service quality (13.1%).

Table 2 shows the descriptive statistics of respondents' demographic characteristics. The female respondents (51.4%) are slightly more than male respondents (48.6%), mostly aged between 18-29 years old (51.6%), and are New Zealander (36.2%) or Asian (31.3%). In terms of respondents' occupation, the majority are students (33.4%), followed by professionals (29.7%). Nearly one third of the respondents hold a bachelor degree (30.1%), and 18.7% hold a postgraduate degree. The majority of the respondents are single (50.9%), and have a household income of USD 0-19999 (44.4%).

Table 1. Travel experience variables

Variable	Category	% of responses
Airline respondents last fly with	Air New Zealand	25.2
	Qantas Airways	24.3
	Singapore Airlines	16.8
	Pacific Blue Airlines	10.3
	Malaysia Airlines	7.0
	Freedom Air	6.1
	Thai Airways	2.6
	Cathay Pacific	1.9
	Royal Brunei	1.2
	Japan Airlines	1.2
	British Airways	0.5
	Emirates	0.5
	Lufthansa	0.5
	United Airlines	0.5
	Korean Air	0.5
	China Air	0.5
Air Canada	0.2	
American Airlines	0.2	

	Air Vanuatu	0.2
Purpose of travel	Pleasure	51.4
	Family	22.2
	Business	12.6
	Study	11.2
	Other	2.6
Cabin class	Economy class	91.8
	Business class	6.3
	First class	1.9
Most important factor when choosing an airline	Price	44.4
	Safety and security	14.7
	Service quality	13.1
	Flight schedule	7.2
	Reputation	6.8
	Travel agency arrangement	6.1
	Frequent flier card	4.7
	The only choice	2.1
	Flight punctuality	0.9
Travel frequency per year	0 to 2 times	56.5
	3 to 5 times	25.7
	More than 5 times	17.8

Table 2. Demographic variables

Variable	Category	% of responses
Gender	Female	51.4
	Male	48.6
Ethnic	New Zealand	36.2
	Asian	31.3
	Australian	14.7
	European	11.2
	North American	6.1
	South American	0.2
	Other	0.2
Age	18-29	51.6
	30-39	13.8
	40-49	15.4
	50-59	11.4
	60-69	4.9
	70+	2.8
Educational qualification	Bachelors degree	30.1
	Postgraduate degree	18.7
	Diploma	14.5
	Seventh form	14.3
	Fifth form	10.3
	Sixth form	8.6
	Other	3.0
Occupation	Student	33.4
	Professional	29.7
	Semiprofessional	7.5
	Tradesperson	6.5
	Retired	5.4
	Unemployed	3.7
	Clerical	3.7
	Home maker	3.5
Laborer	3.3	
Other	2.9	
Marital status	Single	50.9
	Married	40.0
	Living with a partner	7.2
	Divorced	1.2
	Widow	0.5
	Widower	0.2
Income	0-19999	41.6
	20000-29999	14.0
	30000-39999	10.7
	40000-49999	7.9
	50000-59999	7.0
	60000+	18.7

4. Empirical analysis

Exploratory factor analysis was used to examine the service quality dimensions and oblique rotation was carried out. Results of the latent root criterion eigenvalues are greater than 1.0 (Coakes and Steed, 1997) and the scree test showed the items fell into nine dimensions, with a 0.30+ loading (Hair et al., 1998). Results of the factor analysis corresponded well with the seven dimensions. Two additional dimensions (online ticket reservation and in-flight information) were determined by the factor analysis. Thirty-three statements with a 0.50+ loading were retained for further analysis. Statement A2 (with a 0.3+ loading) for the dimension of “in-flight information” was also retained for reliability testing. Verification of the scale reliability of the items pertaining to the actual dimensions used in the analysis resulted in Cronbach Alpha levels that were all above 0.6 (Churchill, 1979). A name representing the character of the thirty-four items was then assigned to each service quality dimension.

Multiple regression analysis was used to test hypothesis 1 to 7. The dependent variable in model 1 was perceived service quality, and the independent variables were timeliness, assurance, convenience, helpfulness, comfort, meals, safety and security as determined from the factor analysis. Pearson Correlation tests show that significant positive relationship exists between each of the air travel service quality dimensions and perceived service quality, indicating that higher evaluations of service quality dimensions are associated with higher perception of service quality. The F-test ($F = 45.597, p < 0.01$) also shows that there was sufficient evidence to substantiate the usefulness of this model in predicting perceived service quality in international air travel. The coefficient of determinant of the regression model is 0.511, indicating that 51.1% of variance in air travel service quality is explained by the eight service quality dimensions. The results (see Table 3) show that Safety and Security, and Helpfulness dimensions are significant at the 1% level, Convenience, Meals, and Comfort dimensions are significant at the 5% level, and Timeliness and Assurance dimensions are significant at the 10% level.

The importance of the dimensions are indicated by standardized beta coefficients, Safety and Security ($\beta = 0.290$) was perceived as the most important dimension, followed by Helpfulness ($\beta = 0.249$) whereas Timeliness is perceived as the least important dimension.

Table 3. Regression of air travel service quality dimensions against overall air travel service quality (Model 1)

Variable	Unstandardized coefficients		Standardized coefficients	t	Sig.
	β	Std. error	β		
Constant	0.019	0.181		0.107	0.915
Safety and Security	0.301	0.045	0.290	6.656	0.000***
Helpfulness	0.251	0.047	0.249	5.340	0.000***
Convenience	0.092	0.039	0.090	2.378	0.018**
Meals	0.068	0.030	0.092	2.294	0.022**
Comfort	0.080	0.041	0.091	1.976	0.049**
Timeliness	0.083	0.043	0.084	1.912	0.057*
Assurance	0.079	0.044	0.085	1.799	0.073*

Note: ***, **, * – significant at 1%, 5% and 10% levels respectively.

ANOVA and t-tests and/or Student t-tests were conducted to assess whether airline passengers with different socio-demographic characteristics have different perceptions of service quality. Due to age, occupation, household income, and level of education groups have disproportionate sample sizes, the sub-groups were combined to form groups of at least 30 respondents in order to obtain reliable statistical results. The results (see Tables 4-8) show that passengers’ perceptions of international (high-frills) air travel service quality will differ according to passengers’ age, gender, income, occupation, and marital status, whereas education has no apparent influence on passengers’ perceptions of international (high-frills) air travel service quality.

In the age groups, the results show that Timeliness, and Safety and Security are significant at the 1% level, Convenience is significant at the 5% level, and Assurance is significant at the 10% level. This implies that passengers from different age groups have different satisfaction level on these four service quality dimensions, older passengers were more satisfied with the international air travel services than younger passengers. In the gender groups, the result shows that male passengers are more satisfied than female passengers on airline’s safety and security at the 10% significant level. The occupation groups were regrouped as follows: 1) Professional; 2) Semi-professional (including clerical and tradeperson); 3) Laborer; 4) Student; 5) Retired or home maker; 6) Unemployed and 7) Other. The results show that the semi-professional group of passengers are more satisfied with the safety and security dimension, the retired or home maker group of passengers are more satisfied with the

convenience dimension, and the professional group of passengers is more satisfied with the timeliness dimension. In the income group, passengers with lower incomes are less satisfied than passengers with higher incomes on the dimensions of safety and security ($p < 0.01$) and convenience ($p < 0.01$), timeliness ($p < 0.05$), and helpfulness ($p < 0.05$). In the occupation group, passengers' level of satisfaction with safety and security ($p < 0.01$), convenience ($p < 0.05$), and timeliness ($p < 0.10$) differ according

to their occupation. The result of ANOVA shows no significant perceptual difference between different passengers' education levels, implying that passengers' education levels do not affect their satisfaction levels for international air travel service quality. In the marital status groups, the results show that passengers with different marital status have different satisfaction levels on safety and security, timeliness at the 1% level of significance, and convenience at the 5% level of significance.

Table 4. ANOVA: passengers' satisfaction with international air travel services: differences by age groups

Service quality dimensions	Significant items	Age category					F	Sig. F
		18-29	30-39	40-49	50-59	60+		
Safety and security	B11, B12, C13	3.887	4.045	4.040	4.333	4.253	4.601	0.001***
Timeliness	C3, C4, C5, C6, C7	3.387	3.636	3.618	3.550	3.897	3.927	0.004***
Convenience	A7	3.734	3.856	3.944	3.952	4.116	2.635	0.034**
Assurance	A15	3.566	3.845	3.533	3.571	3.909	2.355	0.053*

Note: *, **, *** – significant at 10%, 5%, 1% levels respectively.

Table 5. Passengers' satisfaction with international air travel services: differences by gender (t-test)

Service quality dimensions	Significant items	Gender category		t	Sig. (1-tailed)
		Male	Female		
Safety and security	C13	4.066	3.961	1.414	0.079*

Note: *significant at 10% level.

Table 6. ANOVA: passengers' satisfaction with International air travel services: differences by income groups

Service quality dimensions	Significant items	Income category			F	Sig. F
		0-19999	20000-49999	50000+		
Safety and security	B11, B12, C13	3.839	4.121	4.152	7.974	0.000***
Convenience	A6, A7	3.691	3.961	3.918	5.550	0.004***
Timeliness	C3, C4, C6	3.399	3.655	3.525	3.989	0.019**
Helpfulness	A9, A12, A13	3.808	4.030	3.876	3.137	0.044**

Note: **, *** – significant at 5% and 1% levels respectively.

Table 7. ANOVA: passengers' satisfaction with international air travel services: differences by occupation groups

Service quality dimensions	Significant items	Occupation category						F	Sig. F
		1	2	3	4	5	6		
Safety and security	B11, B12, C13	4.137	4.171	3.810	3.795	4.079	4.021	3.523	0.002***
Convenience	A6, A7	3.932	3.866	3.976	3.675	4.022	3.594	2.411	0.027**
Timeliness	C7	3.649	3.576	3.414	3.359	3.640	3.347	1.852	0.088*

Note: *, **, *** – significant at 10%, 5%, 1% levels respectively.

Table 8. Passengers' satisfaction with international air travel services: differences by marital status (t-test)

Sig. Service quality dimensions	Significant items	Marital status category		t	Sig. (1-tailed)
		Married	Single		
Safety and security	B11, B12, C13	4.139	3.898	3.262	0.000***
Timeliness	C3, C5, C6, C7	3.619	3.423	2.511	0.006***
Convenience	A6	3.893	3.789	1.379	0.021**

Note: **, *** – significant at 5% and 1% levels respectively.

Regression analysis was used to assess impact of service quality and price on passengers' satisfaction in international air travel and the impact of passengers' satisfaction on behavioral intentions in interna-

tional air travel. Model 2 is used to test Hypothesis 9 (see Table 9). The dependent variable was overall satisfaction and the independent variables were perceived service quality and perceived price.

The results of the Pearson correlation test shows significant positive relationships exist between perceived service quality, perceived price, and passengers' overall satisfaction level, indicating that higher satisfaction levels of perceived service quality and perceived price are associated with a higher overall satisfaction level. The F-test results ($F = 385.548^{***}$) shows that there was sufficient evidence (significant at $p < 0.01$) to substantiate the usefulness of this model in predicting the relationship between overall satisfaction, perceived service quality, and

perceived price in international air travel. The coefficient of determinant is 0.643, indicating that 64.3% of variance in the overall customer satisfaction level can be explained by perceived service quality and perceived price. As shown in Table 5, perceived service quality and perceived price are significant at the 1% level. Furthermore, perceived service quality has a greater beta coefficient than perceived price, indicating that perceived service quality has a greater impact on customer satisfaction than price in the international air travel.

Table 9. Regression of overall satisfaction against perceived service quality and perceived price (Model 2)

Dependent variable	Independent variables	Unstandardized coefficients		Standardized coefficients	t	Sig.
		β	Std. error	β		
Overall satisfaction	Constant	0.162	0.128		1.265	0.207
	Perceived service quality	0.751	0.039	0.651	19.455	0.000***
	Perceived price	0.215	0.029	0.246	7.357	0.000***

Note: *, **, *** – significant at 1%, 5%, 10% levels respectively.

Model 3 was used to test Hypothesis 10 (see Table 10). The dependent variable used in the regression analysis was passengers' behavioural intentions and the independent variable was overall customer satisfaction. The results of the Pearson Correlation test shows a significant positive relationship exists between behavioral intentions and overall satisfaction, indicating that a higher overall satisfaction level is associated with more positive future behavioral intentions. The F-test ($F = 566.719^{***}$) shows that there is sufficient evidence (significant at $p < 0.01$)

to substantiate the usefulness of this model in predicting the relationship between overall satisfaction and behavioral intentions in international air travel. In addition, the coefficient of determinant is 0.57, indicating that 57% of variance in behavioral intentions can be explained by the overall passengers' satisfaction level. The regression analysis results presented in Table 6 shows that passengers' overall satisfaction level and behavioral intentions have a positive relationship that is significant at the 1% level.

Table 10. Regression of behavioural intentions against overall customer satisfaction (Model 3)

Dependent variable	Independent variables	Unstandardized coefficients		Standardized coefficients	t	Sig.
		β	Std. error	β		
Behavioral intentions	Constant	1.078	0.120		8.983	0.000***
	Overall satisfaction	0.760	0.032	0.756	23.806	0.000***

Note: *, **, *** – significant at 1%, 5%, 10% levels respectively.

5. Discussions and implications

5.1. Theoretical implications. The service quality dimensions identified in this study differ from those in the SERVQUAL model (Parasuraman et al., 1988) as a more detailed set of dimensions may be required to capture the service quality in international air travel due to its unique nature (Witt and Muhlemann, 1995). In addition, Lee and Cunningham (1996) suggested that an airline's service quality should be measured solely on in-flight service experiences, pre-flight, and post-flight experiences at the airport. These three different stages of air travel experiences were not specifically included in the dimensions of the SERVQUAL model.

Hypotheses 1 through 7 proposed the presence of significant positive relationships between perceived

service quality and the air travel service quality dimensions identified in this study: these dimensions include timeliness, assurance, convenience, helpfulness, comfort, meals, and safety and security. The results support the hypotheses. Moreover, the results suggest that Safety and Security is perceived to be the most important dimension while Timeliness dimension is the least important in passengers' assessment of perceived service quality. The results do not support the findings of Gourdin and Kloppenborg (1991) and Young et al. (1994), who found that the flight connections and in-flight comfort were the two most important dimensions, whereas the operations and safety dimension were the least important. However, the findings of this study are consistent with recent studies by Gilbert and Wong (2003) and Natalisa and Suharto (2002). Gilbert and

Wong (2002) attempted to identify the service dimensions that matter most to airline passengers and reported that passengers were most concerned about safety and security. In addition, Natalisa and Suharto (2003) also reported that flight safety had the most impact on the level of customer satisfaction. Studies published from 2003 onwards concur with the results of this study, which highlights the growing importance of safety and security in the wake of global terrorism, the outbreak of SARS, and the bird flu. As a result, the passengers' perceptions of international air travel service quality have changed in this changing environment.

Hypothesis 8 proposed that passengers' satisfaction of international (high-frills) air travel service quality will differ according to their socio-demographic characteristics. The results of the ANOVA and the t-test analysis found significant support for Hypothesis 8 in five cases (age, gender, income, occupation, and marital status). Analyzing the mean responses of respondents at different ages shows that older passengers are more satisfied with the international air travel services than younger passengers. Similarly, analyzing the mean responses of respondents at different level of incomes shows that passengers with lower incomes are less satisfied with the international air travel services than passengers with higher incomes. A possible explanation is that older passengers or passengers with higher incomes can afford to choose to fly with the airline that best meets their expectations.

Conversely, younger passengers or passengers with lower incomes are more price-sensitive, and usually purchase tickets based on the lowest price available, and also may have different levels of expectations. This may lead to a different service experience each flight, and make younger passengers or lower incomes passengers less likely to be satisfied with the level of service provided. In relation to gender, the results of this study show that male passengers were more satisfied with the safety and security dimension than female passengers. This result supports Westwood et al. (2000) and Oyewole's (2001) findings. Oyewole (2001) suggested that a possible explanation for the bias was that men may be more at ease than women in going through the process of air travel, as women may have greater fear of travelling by air than men.

In relation to occupation, the results of this study show that the semi-professional group of passengers are more satisfied with the safety and security dimension than the other groups. This result is consistent with Oyewole's (2001) findings. Oyewole (2001) suggested that this may be due to the fact that the passengers in the semi-professional group often have the need to travel for business purposes,

and are more comfortable with the whole flight process. Hence, their frequent travelling experiences might reduce their beliefs associated with flights in general. Thus, they are more satisfied with the safety and security aspects. The analysis of the mean responses of passengers with differing marital status shows that passengers who are married are more satisfied with the international air travel services than single passengers. This result supports Oyewole's (2001) findings. Oyewole (2001) argued that single passengers usually find themselves assigned seats next to total strangers with whom they have little in common and, this fact could reduce their level of satisfaction. In addition, a single passenger travelling alone may be more impatient than passengers travelling as a couple, even during a short transit stopover, thus, single passengers are less satisfied with the timeliness dimension than married passengers.

Hypothesis 9 hypothesized that perceived service quality has a greater impact on overall customer satisfaction than perceived price in international air travel. The results of this study are consistent with the findings of Ostrowski et al. (1993), Anderson et al. (1994), and the 1997 International Air Transport Association. These studies all reported that service quality was consistently found to have more impact on customer satisfaction in air travel than price.

Hypothesis 10 was established that high level of customer satisfaction is positively related to positive future behavioral intentions, and the finding supports this hypothesis. If overall customer satisfaction is raised by one unit, the behavioral intentions are increased by 0.76 units, implying that they are more likely to travel with that specific airline again or to recommend that airline to others. These results support the general findings of Cronin and Taylor (1992), Boulding et al. (1993), Zeithaml et al. (1996), Athanassopoulous et al. (2001), and Clemes, Gan, and Kao (2007). These authors reported that there were direct effects of customer satisfaction on customers' behavioral intentions.

5.2. Managerial implications. The results of this study highlight for management that safety and security is the most important service quality dimension in international air travel as perceived by airline passengers. This may be a result of the September 11th, 2001 terrorist attacks, the Iraq War, the constant threat of terrorism, the outbreak of SARS, and the bird flu in the Far East and Canada. To address the public's growing concern about air travel safety, airlines should be receptive to consumer input. They should seek information about consumers' expectations for safety, their priorities and their willingness to pay for increased safety features. In addition,

airlines should inform the public of their continuous drive to provide a safer flying environment and should publicize the security improvements of the international air travel industry to boost consumer confidence. A possible strategy is to use advertisements that emphasize the extensive safety checks and maintenance that are carried out before a plane is flown. An example of this is Pacific Blue's advertising campaign, which consistently reminds passengers that their planes are the youngest fleet in the sky. Another possible strategy is using promotional campaigns that focus on encouraging passengers to follow the safety and security rules in order to help improve the speed of the security check process, and this in turn, will lower the costs of travelling as fewer employees will be needed to conduct the security check process.

This study reveals socio-demographic characteristics (age, gender, income, occupation, and marital status) of passengers tend to influence their level of satisfaction with international air travel services. It is important that management consider socio-demographic characteristics when developing their marketing strategies.

The results of this study also provide management with information regarding the importance of value creation and the allocation of resources in international air travel. For example, service quality is a more important factor that affects passengers' level of satisfaction than price, and passenger satisfaction is positively related to behavioral intentions. As service quality satisfaction occurs when consumers' expectations are met or exceeded, creating more realistic consumers' expectations about the promises that airlines make may increase the level of perceived service quality. Therefore, airlines should offer services that they are capable of delivering. This strategy should enable management to differentiate their brand from the other airlines in terms of service quality. Airlines should also seek to develop strategies that enhance positive behavioral intentions.

These strategies should include meeting customers' desired service levels, dealing effectively with dissatisfied customers, and confronting customer complaints positively.

Limitations and Conclusions

While this study provides a number of contributions and implications for marketing research on international air travel there are also some limitations.

Firstly, this research relied on a convenience sample of airline passengers during a short two week period (20th of July to the 3rd of August) and the sample was collected in a single geographic area. The analysis and discussion based on the perceptions of the sample respondents may vary if the sample was collected at a different time of year and from a different geographic region. Different sampling methods (e.g. personal interviews) may also add insight into the perceptions of passengers.

There was approximately an even number of males and females who responded to the survey, however, 51.6% of respondents were in the 18-29 age group. In addition, 63.1% of the sample respondents were either students or professional people. These demographic characteristics could limit the generalization of the results to other age groups or occupations.

The price of fuel and the cost of security have increased since the survey was completed. In particular, the price of fuel has resulted in many of the major carriers raising their fares. These increases may alter the relationship identified in the study between price, service quality and satisfaction.

Finally, the airline industry may be subject to valence in the provision of their services stemming from an increase in customer involvement and a continuing demand for more security regulations on the part of airlines. Further research into airline travel should consider the impact on valence on satisfaction.

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