AIR TRAVEL IN THE U.S.: AN INVESTIGATION OF THE INFLUENCE OF PERCEIVED RISK IN SERVICE QUALITY

by

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Abstract

This quantitative investigation explored the influence of perceived risk on the service quality of air travel in the United States. The research examined whether perceived risk influences the service expectation and perception gaps that may exist for both business and non-business air travelers relative to their perceived service quality. Service quality was used as a measure of customer satisfaction. It was concluded that regardless of air traveler type, there exists the influence of perceived risk. The air traveler's travel purpose and service quality were found to be correlated. Significantly, perceived risk and perceived service quality were found to be negatively correlated: As perceived risk increases, the perceived service quality decreases for each of the five dimensions of service quality. The negative correlation however is moderate. The study is consistent with earlier research on "sudden negative events". It validates the correlation between certain elements of risk (financial, performance, physical, psychological, social and political), and service quality dimensions of Tangibles, Reliability, Responsiveness, Assurance, and Empathy. It empirically reveals the gap between the perceived importance of a risk element and the perceived recurrence of that risk in the foreseeable future. It further validates the use of service quality as a measure of customer satisfaction. This research potentially provides guidance for management to enhance processes that can maximize service quality in U.S. air travel. Not only should management do its utmost to increase air traveler satisfaction, it should not ignore the influence of perceived risk on perceived service quality. The study presents additional scenarios for future research.

Dedication

Thanks to God for having guided me toward the completion of my Ph.D. program. This study is dedicated to individuals who have played a major role in my life. First, it is in memory of my mother, Mamie Pan Bao, loving parent and role model. Your passion for lifelong learning, your success as a school principal in educating thousands of students, the way you encouraged your sons to always persevere, to excel, achieve, and give back to society: Your life has been an inspiration. The study is also dedicated to my father, Bao Ming Shao, and to my amazing brother, Dr. Danny Bao, M.D., Ph.D.

This work is dedicated to my lovely and loving wife, Anne Hutchinson, who has stood by me over the decades. During the past several years, you kept me company night after night on countless occasions while I was doing research, without my asking you to do so, just because you wanted to. Dearest Anne, it is because of your unwavering faith and confidence in me that I have persevered throughout my doctoral odyssey. This research also is dedicated to my son Robert and daughter, Christina, and to your respective families. God could not have blessed Anne and me with finer children than you. Your filial piety has been a major motivating factor during this educational trek.

This academic work is no less dedicated to my many friends and associates like Dean Teddi Lane Turner, J.D., and Dr. Kambiz Khadem among others, who provided me with moral support, invaluable insight, and the courage to succeed despite all odds. My dedication and thanks go especially to Dr. and Mrs. Dorociak. John and Sandra, you epitomize true friendship and erudition.

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CHAPTER 1. INTRODUCTION

Introduction to the Problem

Since the airlines were deregulated (1978 – 1982), commercial aviation in the U.S. has become increasingly competitive (Alotaibi, 1992). Competitiveness in commercial aviation has accelerated exponentially due to global environmental factors (Porter, 1998, 2001). In 2009, the global airline industry remains in "survival mode", continues to remember 9/11, and seeks additional deregulation in order to deflect insolvency and regain sustainability (Bisignani, 2009, p.26). Today, air travelers have more choice in the selection of their travel providers than was previously available. In a competitive market, the airlines must understand customer loyalty in order to keep their customers. Customer satisfaction is a major consideration as customers decide whether to stay loyal to their travel provider or defect (Reichheld, 2006). Customers select their travel providers based on how well the travel providers meet their service expectations (Parasuraman, Zeithaml, & Berry, 1996). Consequently, in order to keep their customers, airlines must become increasingly sophisticated about understanding their customers' expectations in an effort to maintain the quality of service their passengers demand. To do so, airline management must understand the critical success factors of service quality. The airlines' approach to creating customer satisfaction will determine the effectiveness of their marketing programs and operational processes, not to mention their sustained

viability in the marketplace. Given the current global economic environment, the challenge has become greater: Airlines increasingly must reduce the service levels that their passengers have been expecting, all the while increasing fares in one way or another (Braff & DeVine, 2009). This strategy has not resulted in a positive customer experience.

Background of the Study

Research on customer loyalty is replete with examples of its critical success factors (Gundlach & Achrol, 1995; Morgan & Hunt, 1994; Zeithaml, Berry, & Parasuraman, 1996; Shoemaker & Bowen, 1998, 2003; Garbarino & Johnson, 1999; Reichheld & Schefter, 2000; Sirdeshmukh, Singh, & Sabol, 2002). Some of the latest research has begun to focus on commitment as the key loyalty factor (Verhoef, 2003; Johnson, Hermann, & Huber, 2006). The commonality in much of the research is the customer, and customer satisfaction.

In recent years, researchers in services marketing have increasingly become interested in service quality (Bolton & Drew, 1991a, 1991b; Carrillat, Jaramillo, & Mulki, 2009; Cronin & Taylor, 1992, 1994; Oliver, 1993; Parasuraman, Zeithaml, & Berry, 1990; Zeithaml, 1988; Zeithaml, Berry, & Parasuraman, 1993). In particular, researchers have focused on the way service quality is conceptualized (Babakus & Boller, 1992; Bateson, 1992; Bolton & Drew, 1991a, 1991b1; Boulding, 1993; Cronin & Taylor, 1992, 1994; Cronin, Brady, & Hult, 2000; Gronroos, 1983; Oliver, 1993; Parasuraman, Zeithaml, & Berry, 1985; Parasuraman, Zeithaml, & Berry, 1988; Teas, 1993; Zeithaml, 1988; Zeithaml, Berry, & Parasuraman, 1993).

Service quality researchers have investigated various aspects of customer evaluation of services. Key facets include (a) the relationship between expectations and perceptions of services (Bolton & Drew, 1991; Boulding, Kaira, Staelin & Zeithaml, 1993; Parasuraman et al., 1985; Zeithaml, Berry, & Parasuraman, 1993), (b) customer satisfaction and dissatisfaction (Oliver, 1981; Yi, 1990; Boulding, Kaira, Staelin & Zeithaml, 1993), and (c) customer loyalty antecedents like behavioral intentions and pre- and post-purchase product evaluations (Zeithaml et al., 1996).

The relationship between expectation and disconfirmation on perceived product performance has intrigued researchers for more than three decades. Contrary to previous research which posited that expectation produced a more dominant effect, Oliver (1977) found that disconfirmation may have an equally significant impact. Parasuraman et al., (1985) extended knowledge about disconfirmation by linking it to service quality, which they defined as the difference between the service that is delivered and the customers' expected service level. When the gap between perceptions of performance and desired expectations is minimal or absent, service quality levels are higher. When perceived performance exceeds predicted expectations, customer satisfaction exists (Parasuraman et al., 1988).

Notwithstanding, the extensive research that has been conducted on service quality in the last several decades shows researchers do not have a consensus regarding the measurement of service quality (Parasuraman et al., 1991; Parasuraman et al., 1988; Cronin & Taylor, 1992, 1994). Researchers have been disagreeing about the reliability of SERVQUAL, a scale that Parasuraman et al., (1985) developed to measure service quality. SERVQUAL has been used to measure service quality in many areas including

air travel (Alotaibi, 1992), business schools (Carman, 1990, Cunningham, Young, & Lee, 2002, 2004), higher education (Ham, 2003), fast food, dry cleaning, and banking services (Cronin & Taylor, 1992). In addition to reliability, SERVQUAL's validity also has been challenged; the instrument's five dimensions were deemed not to be generic, and would require modifications for it to be used in all industries (Carman, 1990). Despite this continuing controversy, SERVQUAL continues to be used by researchers, who studiously inject industry-specific elements to the basic instrument. Research on perceived service quality and customer satisfaction in various sectors including the airlines continues since SERVQUAL and its variants are deemed to be an effective measure, at least holistically (McLaughlin, 1994). Given the changing global environment, and continuing controversy within the scholarly community about aspects of the SERVQUAL instrument, researchers continue to use SERVQUAL, but have also begun using SERVQUAL variations along with other instruments to more accurately evaluate service quality. One example is instrumentation to measure perceived risk (Sweeney, Soutar, & Johnson, 1999; Dolnicar, 2005).

Originating in consumer buying behavior research, research on perceived risk has been extensive, spanning five decades (Dolnicar, 2005; Bettman, 1973; Chaudhuri, 2000; Cox, 1967; S.M. Cunningham, 1967; Dowling & Staelin, 1994; Mitchell, 1999). Seminal research on perceived risk was conducted by Bauer (1960) who first introduced it as a construct of consumer behavior (Dolnicar). Subsequently, Cunningham studied measurement tools to quantify it (1967). Empirical studies ensued (Peter & Ryan, 1976). Bettman (1973) was the first to research typologies, and distinguished between "handled risk" and "intrinsic risk". "Intrinsic risk" as explained by Dolnicar originates in the

product class, and "cannot be managed by information search and risk-reduction techniques in the process of consumer decision making" (p. 197). The opposite is true of "handled risk". Much research has been conducted relating perceived risk to travel-related consumer behavior in the tourism area (Dolnicar). In the tourism industry, two key dimensions are perceived risk with negative connotations, and perceived risk involving sensation seeking behavior. In the former category, Dolnicar identifies major contributions by Sonmez and Graefe (1998) and Roehl and Fesenmaier (1992).

Roehl and Fesenmaier's (1992) study, considered to be the first market segmentation study using risk and fear, categorized risk into seven categories derived from consumer behavior research: equipment risk, financial risk, physical risk, psychological risk, satisfaction risk, social risk, and time risk. The seven categories were reduced to three segment groups: the place risk group, the functional risk group, and the risk neutral group (Dolnicar). Sonmez and Graefe (1998) empirically extended the work done by Roehl and Fesenmaier by adding additional items to the original seven: terrorism, health, and political instability. As a result, Sonmez and Graefe made a key finding: "there is an association between the intention to travel to certain destinations (or to avoid them) and past travel behavior, perceived risks and perceived safety where the dependent variable is a behavioral intention measure" (p. 198).

Researchers have found that consumers sense a more elevated degree of perceived risk when they buy a service compared to when buying a product; the intangibility of services makes pre-purchase testing difficult (Zeithaml, 1988). Additionally, Sweeney, Soutar, and Johnson (1999) found that perceived risk influences perceived service quality. Airlines have found the need to understand customer expectations and customer

satisfaction to be increasingly urgent (Cunningham, Young, & Lee, 2004). In the wake of September 11, 2001 ("9/11"), the business environment in the U.S. as well as globally changed dramatically: "Air traffic plummeted, and ultimately many carriers experienced the most difficult times of their corporate lives" (Cunningham et al., p. 210). Some airlines became insolvent, and filed for Chapter 11 (Cunningham et al.).

Cunningham et al. (2004) noted the obvious impact of 9/11 on air traffic and the financial health of the airlines, but were not sure about how consumers assessed the airlines. They researched the relationship between "sudden negative events" (as represented by 9/11) and customer perceptions of airline service quality, associated risks with airlines in general and specific airline 'brands', customer satisfaction and "intention to re-patronize" the (airline) brand. Cunningham et al. found that customers distinguished between a risk of flying with airline brand loyalty: "although the number of trips declined over the course of the research, passengers' overall satisfaction with the airline industry, airline satisfaction, and intention to patronize their airline generally did not change in a statistically significant manner" (p.10). Notwithstanding 9/11 and the likelihood of recurrences of the "sudden negative event", research into service quality and perceived risk remains parsimonious (Cunningham et al.).

Statement of the Problem

Despite the vast amount of theoretical constructs and empirical evidence relative to airline service quality, the goals of customer satisfaction, customer loyalty, and by extension customer retention, remain elusive (Conchar, Zinkhan, Peter, & Olavarrieta, 2004). The American Customer Satisfaction Index (ACSI) annually measures responses

from 20,000 people to questions about overall satisfaction, intention to be a repeat customer and perception of quality, value and expectations. The ACSI's score for airlines fell in 2007 to its lowest level in seven years (University of Michigan, 2007).

Although researchers have well documented the impact of 9/11 on air travel and the viability of the airlines, there remains a knowledge gap on the influence of perceived risk on the perception of service quality, the antecedent to customer satisfaction (Cunningham et al., 2002, 2004). The travel experience is based on an intangible service. Perceived risk is more difficult to quantify (Moutinho, 1987; Sonmez & Graefe, 1998; Roehl & Fesenmaier, 1992). Relying on research conducted by Roehl & Fesenmaier's findings (1992), Cunningham et al. was only able to infer that "the existing evidence implies (the) potentially significant influence (of perceived risk) on evaluations of airline service quality" (p.13).

In summary, knowledge remains sparse on the role of perceived risk in consumers' perception of service quality. Cunningham et al. (2004) presented interesting findings in their efforts to "systematically assess the impact of sudden negative environmental events" (p.5). Nevertheless, still more empirical evidence is required to add to the extant knowledge of the relationship between perceived risk associated with a future, unforeseen global negative event and the customer's perceived service quality.

Purpose of the Study

The purpose of this research was to investigate aspects of service quality satisfaction of travelers who patronize commercial airlines that operate in the U.S. in a global environment of recurring albeit unscheduled sudden negative events. The research

investigated the degree to which customer perception of risk influences service quality. Sweeney, Soutar, & Johnson (1999) posited that perceived risk mediates the perception of service quality and value for money in a retail setting. This study expected to further analyze the mediating role of elements of perceived risk relative to perceived service quality in commercial aviation. The study in particular explored differences between the air traveler who flies on a business trip and one who does not. First, this study reviewed and synthesized relevant constructs pertaining to perceived risk, service quality perceptions, customer satisfaction, and behavioral intentions of business travelers. Relevant hypotheses were tested. Second, there was an examination of the relationship between airline passengers' perception of airline service quality and the perceived risk of services provided by commercial airlines that serve the United States. The field work relied on survey instruments that have been time-tested by academics over the years. The study used scales based on (a) the SERVQUAL and SERVPERF instruments (Parasuraman et al., 1985, 1988; Zeithaml et al, 1993; Cronin & Taylor, 1992, 1994), (b) other measures specific to the airline industry (Alotaibi, 1992; Cunningham et al., 2002, 2004; Oyewole, Sankaran, & Choudhury, 2007), and (c) certain measures of perceived risk suggested by the literature (Dolnicar, 2005; Bettman, 1973; Cox, 1967; S.M. Cunningham, 1967; Dowling & Staelin, 1994; Mitchell, 1999; Bauer, 1960; Peter & Tarpey, 1975; Peter & Ryan, 1976).

Rationale

The research was expected to contribute to the body of academic knowledge by empirically acquiring evidence in support of prior research conducted on perceptions of

airline service quality pre- and post- 9/11 (Cunningham et al., 2004). That longitudinal study focused on the impact of the actual event of September 11, 2001). In contrast, the present study was cross-sectional rather than longitudinal. The future occurrence of sudden negative events symbolized by 9/11 was studied in terms of its influence on the perception of airline service quality.

In this research, the theoretical model as illustrated by Figure 1 represents the relationships between perceived risk, airline service quality, and air passenger satisfaction. The concept of risk is complex (Conchar et al., 2004). Its interrelationships are similarly complex. Researchers have studied the influence of perceived risk on perceived service quality (Zeithaml et al., 1993). Details of this model would be presented in the ensuing pages (Figure 2).

Theoretical Model: Perceived Risk, Perceived Service Quality, and Customer Satisfaction.

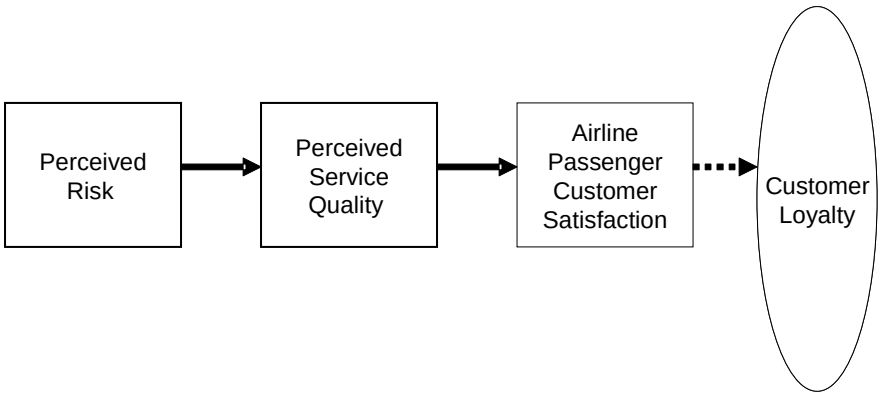

Figure 1. Conceptual framework.

The theoretical model illustrates the relationship between perceived risk and perceived service quality, with a postulated correlation between the two. The concept of perceived risk is complex as the following scenarios illustrate. If one believes the quality of an airline is high, one would be willing to absorb more risk in flying on that airline (G. Robinson, personal communication, June 17, 2007). For example, even if Singapore Airlines (SQ) were perceived as the world's highest quality airline, if one were contemplating travel on SQ to a destination considered to be among the world's riskiest places, the existence of risk would influence the traveler's decision to patronize that well-regarded airline. Alternatively, if the airline were El Al, that airline's perceived decrease in service quality might still be more acceptable to a traveler relative to a flight to a risky destination because of the traveler's belief that El Al's security is such that it mitigates the risk. Notwithstanding the above discussion, for reasons of scope, it was posited in this research that perceived risk influences passenger service quality for a random sample of airline passengers traveling on commercial air in the U.S. Prior research found that perceived airline service quality significantly influences passenger satisfaction (Alotaibi, 1992). To provide focus and limit the research scope, the present study only explored the correlation of perceived risk to service quality. The perceived airline service quality construct includes the sub-variables of service quality reliability, assurance, tangibles, responsiveness, and empathy as used by Parasuraman et al. (1988). In this construct, perceived service quality influences passenger satisfaction, which in turn impacts behavioral intentions (loyalty). For reasons of focus once again, the loyalty component while important would be investigated vigorously in subsequent research.

The present model is rooted in the service quality, consumer satisfaction / loyalty, and perceived risk literature.

In an effort toward precision, the present research investigated the interrelationship among certain critical components of perceived risk and perceived service quality identified in the academic literature (Conchar et al., 2004; Sonmez & Graefe, 1998; Roehl & Fesenmaier, 1992; Dolnicar, 2005; Cunningham et al., 2004).

Research Question

Is there a correlation between the constructs of perceived risk and airline service quality for a random sample of airline passengers traveling on commercial airlines in the United States?

Investigative Questions

1. Do business airline travelers and non-business airline travelers differ in their evaluation of perceived risk?

2. Do business airline travelers and non-business airline travelers differ in their evaluation of airline service quality?

3. Is there a correlation between the construct of perceived risk and the dimensions of service quality for airline traveler segments?

Significance of the Study

September 11, 2001, significantly affected the business environment globally, including the United States (Cunningham et al., 2004; Clarke, 2005; New York Times, 2006). The present investigation contributes to research that analyzes the relationships among customer satisfaction, perceived service quality, and perceived risk constructs.

The analysis provides statistically supportable evidence regarding these interrelationships relative to commercial airlines that operate in the United States. The results will enable airline management to more effectively assess the potential impact of future sudden negative environmental events. The present research extends the knowledge gained from previous research on service quality in general and the influence of perceived risk in particular. The present study has added to the empirical evidence of previous, related research.

The present study is deemed timely. First, evidence exists of an increasing competition among airlines of the world, including United States flag carriers (Air Transport Association, 2003, 2008). Second, the commoditization of loyalty marketing programs worldwide is diminishing the positive effects of loyalty programs (Capizzi & Ferguson, 2005). Third, the global environment of terror is likely to persist (Clarke, 2005), with concomitant risks that potentially affect airlines and passengers; service failures may also increase, mandating updated, ever more precise and stricter service recovery processes and procedures. Perception of airline service quality is also becoming increasingly important, especially in light of service disruptions and service recovery (e.g. Roth & Menor, 2003a, 2003b). In the current environment of global terrorism, the risk of airline service disruption has increased. Moreover, there is evidence to support the travelers' growing dissatisfaction with airline customer service (Harrison & Kleinsasser, 1999; McCullough, Berry, & Yadav, 2000; Hunter, 2006). Thus it is increasingly important to consider the nature of customer's perception of airline service quality.

Definition of Terms

Airline Passenger Satisfaction. General positive emotional state of the air passengers after their most recent flights (Oliver, 1981; Woodruff et al., 1988).

Airline Service Quality. Air passengers' perception of the service level delivered by airlines compared to what they expect. Measures what passengers think airlines should provide against perceived airline performance (Parasuraman et al., 1988; Alotaibi, 1992; Wicks & Roethlein, 2009).

Air Traveler (U.S. Department of Transportation / FAA). An individual who uses a commercial airline to travel either domestically or internationally. The departure and / or destination must be to or from an airport in the United States. The travel may be for business or non-business reasons. The individual must have taken a minimum of three round-trip flights, either domestic, international, or a combination thereof, during the 12 months prior to responding to the survey. The individual is a citizen of one of the countries recognized by the United States government, and is in the United States legally. The air traveler uses commercial airlines for either business or non-business purposes (Etherington & Var, 1984).

Behavioral Intentions. Individual-level behavioral consequences of service quality (Zeithaml et al., 1996). Intentions are indicators that signal whether customers will remain with or defect from the company. They signal whether customers will stay with the subject firm or switch to a competitor as a direct response to the service quality perceived. Examples range from speaking favorably about the company, recommending the firm to others, remaining loyal to the firm, or spending more money on the firm's

goods and services. They may also include speaking negatively about the firm or complaining to the authorities.

Commercial airline(s). An airline that is a scheduled carrier authorized to operate commercially in the United States. In this study, the airline's headquarters can be either United States or foreign based. For this research, the air travel must originate and terminate at a commercial United States airport.

Customer Relationship Management (CRM). A major program subsumed under airline management's relationship marketing strategies, comprising mainly loyalty / reward / membership and customer operations components (Winer, 2001; Rigby, Reichheld, & Schefter, 2002). For the purposes of this study, CRM represents management's overall strategic relationship management and marketing approach to retain customers.

Customer Satisfaction. Perceived quality or performance, which is the served market's evaluation of recent consumption experience and is expected to have a direct and positive effect on overall customer satisfaction. Overall customer satisfaction has three antecedents: perceived quality, perceived value and customer expectations (Fornell & Lehman, 1994).

Disconfirmation. Variance between prior expectations and actual performance. The attitudinal gamut ranging from satisfaction to dissatisfaction is related to the existence and extent of disconfirmation. (Parasuraman et al., 1988).

Dissatisfaction. Dissatisfaction leads to consumer-complaining behavior, e.g. seeking redress from the seller, negative word-of-mouth communication, or litigation (Zeithaml, Berry, & Parasuraman, 1996). The proximate cause of consumer-complaining

behavior. Examples include unfavorable word of mouth communications, a request for compensation from the service provider, or the initiation of legal action.

Expectations. Service quality expectations are those the customers feel service providers should offer, regardless of whether the service providers would in fact provide that service level (Parasuraman et al., 1988). Expectations also include predictions about what service providers would offer and consumer beliefs about what they should offer (Ham, 2003).

Frequency Marketing / Frequent Flyer Program. A loyalty program offering financial benefits that an airline offers in order to encourage and reward repeat patronage. Members earn credits from paid flights to fly for free. Credits accrued can be redeemed by either the member or a designee (Capizzi & Ferguson, 2005).

Marketing. The art and science of selecting, keeping, and increasing the number of profitable customers (Kotler, 2004).

Overall Quality. A multidimensional construct comprising the gap between perceptions and expectations as explained by Parasuraman et al. (1988).

Perceptions. The service received or experienced (Parasuraman et al., 1985). The extent and nature of the difference between the customer's perceptions and expectations is the perceived quality. (Parasuraman et al., 1988).

Risk. Conchar et al. (2004) state, "A consumer's importance-weighted subjective assessment of the expected value of inherent risk in each of the possible choice alternatives for a given decision goal" (p.422). Conchar, et el. adapted this from earlier research by Bauer 1960, 1967; Vann, 1983; Arndt, 1967; Cox, 1967; Cunningham, 1967; Dowling, 1986; Jacoby & Kaplan, 1972; Mitchell & Hogg, 1997; Newton, 1967;

Roselius, 1971; Vann, 1983; and Tversky & Kahneman, 1992. (P)erceived risk is the combined result of context dependent importance weights, inherent risk in a specific situation, and the influence of individual factors (Conchar et al.). The concept originates in consumer behavior that was attributed to R.A. Bauer in 1960. According to Conchar et al., Bauer defined risk as the product of uncertainty and negative consequences, while subsequent researchers conceptualized it as the product of the likelihood of loss and the importance of loss (Peter & Tarpey, 1975). Consumer behavior researchers implicitly assume that both the probability and the outcome of each purchase event are uncertain (Dowling & Staelin, 1994). In this study, perceived risk is associated with the air traveler's perception of the risk associated with the occurrence of a sudden negative event like September 11, 2001, which occurrence is uncertain yet possible. The risk is connected with a decision to travel by commercial air in the U.S. The decision is one that has already been made or has yet to be made. The present research uses the conceptualization favored by Peter and Tarpey.

Quality. Overall Quality: an attitude, a multidimensional construct composed of differences between perceptions (P) and expectations (E), producing the equation, Q=PE (Parasuraman et al., 1988).

Perceived Quality: the degree and direction of discrepancy between consumers' perceptions and their expectations (Parasuraman et al., 1988).

Relationship. A marketing approach based on the fact that customers who perceive a deep relationship with service providers patronize those providers substantively and over longer periods (Bitner & Mohr, 1995). The key relationship building blocks are customer value and satisfaction, and customer loyalty and retention

(Kotler, 2004). Truly satisfied customers are good for the company because they promote the company in several ways, the most important of which is via word of mouth (Reichheld, 2001, 2006).

Satisfaction. Result of purchase and use of a service, and the comparison of the value and costs of the purchase of the service (Parasuraman et al., 1988). Different levels of satisfaction exist when perceived performance exceeds predicted expectations (Parasuraman et al., 1988). Cronin and Taylor (1992), using a single-item purchase-intention scale, posit a correlation between service quality and customer satisfaction.

Service failure/recovery encounter. "(A) series of events in which a service failure triggers a procedure that generates economic and social interaction between the customer and the organization, through which an outcome is allocated to the customer" (Smith, Bolton, & Wagner, 1999, p. 357).

Sudden global negative event. Proxy terms for the events of September 11, 2001, during which 3,000 lives were lost in the destruction of the World Trade Center in New York City. A burdensome constraint to satisfaction: "International Terrorism increases transaction costs and creates trade barriers, since most terrorist actions aim to disrupt supply and affect demand" (www.marketingpower.com). Marketing skills, especially communication, distribution, logistics, and pricing, enable companies to minimize the "direct and indirect costs of terrorism." Companies can deploy effective marketing to "assure the linkages in their supply chains, provide for alternatives in distribution systems and collaborate with consumers and government" to thwart the terrorists' disruptive objectives. (American Marketing Association, December 28, 2005). In the present study, global terrorism is synonymous with sudden global negative event (Cunningham et

al., 2002, 2004; Dolnicar, 2005). In this study, sudden negative event is used to mean future, potential, major threats affecting commercial air travel in the United States as perceived by air travelers.

Assumptions and Limitations

The sample selection of the survey respondents was assumed to reflect the general population of individuals who travel on commercially scheduled airlines departing from and arriving at a United States airport. The assumption was that the researcher would have full access to the desired survey population, and the respondents would provide factual responses notwithstanding the continued sensitivity of Americans regarding the loss of 3,000 lives on September 11, 2001. The present survey spanned approximately four weeks. Given the brevity of the period, issues arose related to access to respondents who might be receptive to participating in the survey. Self-reporting was a potential issue. For those reasons, the survey design was strictly geared to reducing the potential for error and bias in data collection and analysis. Various survey vehicle constraints were considered. The need for more detailed demographic categorization was considered , although the categorization used herein was deemed adequate for the present study. Limitations due to the quantitative research methodology were yet another consideration.

Nature of the Study, or Theoretical/Conceptual Framework

The present research investigated the influence of perceived risk on service quality relative to services provided by commercial airlines that operate in the United States. The nature of this research is theory testing that used a quantitative methodology. Potential respondents were selected at random from a survey population. The survey

instruments were time-honored, validated instruments used to measure: (a) service quality, i.e. SERVQUAL and SERVPERF (Parasuraman et al., 1985, Cronin & Taylor, 1992), (b) customer satisfaction criteria unique to the airline industry (Alotaibi, 1992; Cunningham et al., 2004; Oyewole, Sankaran, & Choudhury, 2007), and (c) perceived risk as found in the literature (Bauer, 1960; Peter & Tarpey, 1975; Dowling & Staelin, 1994; Dolnicar, 2005). The survey instruments used in the field research were clustered in logical and related categories, and the scales used were 7- point LIKERT-based.

After validation of the survey following pre-testing, as illustrated in Appendix B through Appendix D, the perfected survey was administered online via an online survey research service. Potential respondents were selected at random from a commercially purchased list. Potential respondents were invited to click on a link connecting them to the online survey.

The survey instruments were hosted on the survey web-site so that interested parties would find it convenient to respond online (Cooper & Schindler, 2003). The online survey was available to the respondents for a fixed period of four weeks during the last half of calendar year 2008.

Administration of the field research was controlled by the researcher. The research methodology, design, instrument validation, survey deployment, and data collection, population, randomization, and sample size were all considered. The minimal number of respondents and population for a statistically generalizable evaluation was established statistically. Consistent with prior research, the present study expected participation from 250 to 500 respondents, each of whom would be permitted to respond only once to further ensure research integrity (Alotaibi, 1992; Cunningham et al., 2002,

2004; Hunter, 2006). The entire study was compliant with the mandates of the Institutional Review Board. Research standards and procedures followed academic research protocol (Creswell, 2003; Leedy & Ormrod, 2005; Robson, 2002). The survey was pre-tested before its official launch. Additional details of the research approach, methodology, design, survey instruments, implementation, and data collection are provided in Chapter Three.

Organization of the Remainder of the Study

In Chapter One, the discussion centers on the study background, the problem statement, the study purpose and scope, the rationale, research question, and study significance. In a competitive market, customer satisfaction with airline services are a critical success factor (Widzer, 2001; Parasuraman & Grewal, 2000). The passenger's degree of perceived satisfaction may determine whether that passenger will want to re-patronize the same airline or to select another airline for future air travel. In the current volatile global environment the possibility of encounters with sudden negative events such as September 11, 2001 (9/11) is a risk that air travelers face (Cunningham et al., 2002, 2004, Dolnicar, 2005). The present research examined via a field study the degree to which perceived risk influences service quality in commercial air travel in the United States. The present research used SERVQUAL to statistically analyze the findings from a random sample of airline passengers who travel by commercial air in the United States for both business and non-business purposes. The perceived risk instrumentation underwent strict reliability and validity testing.

Chapter Two presents a literature review of relevant research focusing on constructs of service quality and perceived risk. The academic literature was also mined for theories like relationship marketing theories pertaining to customer perception, customer relationship management, satisfaction, trust, commitment, loyalty, value (utility), and customer retention, loyalty and its antecedents, and service operations theories.

Chapter Three describes in greater detail the research methodology to be used in this present research. That chapter discusses the overall research procedures: the role of the researcher, the rationale for selecting the research approach, study design, a more refined research question, the sampling approach, the criteria for sample selection. It also discusses the survey methodology the survey measurement instruments, the data collection and distillation procedures, data analysis and interpretation; and ethical considerations. Given the iterative nature of research, the research design underwent a series of refinements after the quantitative research survey data was compiled.

Chapter Four presents the research findings, followed by a discussion of implications and recommendations in Chapter Five.

CHAPTER 2. LITERATURE REVIEW

Introduction

Chapter Two provides the theoretical basis for the present study, supported by relevant concepts, constructs, and instruments of service quality and risk theories. The literature review focused on the interrelationships among service quality, risk constructs, and customer satisfaction. Research literature pertinent to both airline passenger satisfaction and airline service quality was analyzed within the framework of expected service quality and perceived service quality filtered via the element of risk. This chapter comprises four parts: service quality in the U.S. airline environment, relevant constructs pertaining to service quality perceptions, satisfaction, and air passengers' behavioral intentions, service quality metrics that have stood the test of time and academic rigor, i.e. SERVQUAL and SERVPERF, together with other measures that are specific to the airline industry, and certain dimensions of perceived risk suggested by the literature.

Service Quality in the U.S. Airline Environment

Standard & Poor's Monthly Investment Review (June, 2007) stated airline industry analysts lowered their fundamental financial outlook for the industry "to neutral from positive" (p. 19). While the industry fundamentals remained favorable, they were weakening as a result of increasing price competition and moderating improvements in unit revenue and passenger traffic (revenue increases). Although analysts believed the industry was in recovery mode since events of September 11, 2001, it was a fragile

recovery marked by numerous risks. Standard & Poor's Monthly Investment Review (May, 2007) listed " a potential spike in oil prices, the effects of a resurgence of concern over terrorism and increased security impositions, and a slowing of the U.S. economy" (p.1) as some of the potential hazards facing the industry.

Standard & Poor's Monthly Investment Review further reported that as a result of an "Open Skies" agreement between the United States and the European Union in March 2007, to be effective in March 2008, formerly restricted trans-Atlantic routes would be open, thereby increasing competition globally. While United States airlines on one hand would be allowed greater access to European destinations, non-U.S. carriers would have more penetration opportunities into the United States, as exemplified by Virgin Airlines' new United States service, and Lufthansa's acquisition of 19% of JetBlue (Aviation Week and Space Technology, 2007).

In late 2007, a new passenger's bill of rights was winding its way through Congress as the government, airlines and air travelers worked in continuing efforts, spanning decades, to improve service to the air traveling public (ATA, 2007).

Apart from the influence of the macro environment and the airline industry's unique structure, the increase in competition among the carriers originated some three decades earlier, when the government deregulated the airline industry in order to enhance competition among the air carriers (Airline Deregulation Act of 1978, Public Law 95-504). The government's expectations were improved carrier efficiency, better service, and more choices for the traveling public. The results however were sobering. Sampson, Farris, and Shrock (1990) chronicled the results of less timely flights, cabin service deterioration, lower quality food, crowded cabins, and increases in luggage complaints.

Deterioration in Service Quality

Air travelers have been complaining for at least two decades about sub-par service in American airlines. Interminable lines at airport ticket counters and gate areas, delayed, cancelled or rescheduled flights, nondescript meals, missed connections, and misplaced, misrouted or lost luggage are only some of the customer complaints (Alotaibi, 1992). Gourdin (1988) posited that a contributing factor to service quality decline could be attributed to the tri-partite partnership of the airline industry with government, carrier, and customer, each having different priorities. In this context of differing perspectives, Gourdin and Kloppenborg (1991) discovered a service quality gap.

The government is mostly concerned with the overall quality of the air transport systems and the need for increased infrastructure. The airlines are interested in timely departures from the gate; courteous and friendly flight attendants and providing refreshments according to the cabin class while engaging in overbooking as a business practice. The passengers are concerned with the inconvenience of flight delays, assigned seating, cost, and safety factors. Both the passenger and airlines agree that convenient check-in, timely departure, arrival and connections, on board comfort, cabin cleanliness, efficient baggage handling, and passenger complaint mechanisms are top priorities. Only the passenger and the government are concerned with lower fares for non-peak travel. Only the government and the airlines are concerned with the airline profitability and the making of on-board pre-take off safety announcements (Gourdin & Kloppenborg, 1991). Alotaibi (1992) cites these differences among government, airlines, and passenger priorities as the root causes resulting in poor service within the airline industry.

Although deteriorating airline service is nothing new, Gallup polls conducted from 1985-1988 found the number of passengers who experienced poor airline service nearly doubled out of 1,005 consumers surveyed (Alotaibi, 1992). According to the U.S. Department of Transportation (2001), customer service declined throughout the airline industry between 1995 and 2005. In recent years, the J.D. Power Survey of Airline Satisfaction (2007, 2008) annual survey has been reporting similar results (ACSI, 2007, 2009). The J.D. Power 2008 Survey attributed the decline of customer satisfaction, the steepest decline in three years, to "deteriorating levels of customer service provided by airline staff" as opposed to fares and fees for amenities (2008, June 17). The decline of airline service quality, begun in the 1980s, became exacerbated to the point where a new phenomenon, air rage as observed (Hunter, 2006). The service deterioration has not gone unnoticed by the customers (Harrison & Kleinsasser, 1999; McCullough, Berry, & Yadav, 2000). According to Hunter (2006), the airlines' refusal to acknowledge the gravity of their poor customer service is the proximate cause of "air rage" experienced by the air passenger and employee alike.

The safety and security of air travelers, apart from being subjected to poor service, was compromised further by the occurrence of the sudden negative event of September 11, 2001 which destroyed the twin towers of the World Trade Center, claiming 3,000 lives (Cunningham et al., 2004). While businesses in both the U.S. and worldwide underwent a sea change, the ramifications were especially severe for the U.S. airline industry. According to Cunningham et al., "Air traffic plummeted creating difficult fiscal times for the airline industry, forcing some to go into reorganization and/or

bankruptcy" (p. 10). References to 9/11 persist in the industry media and journals (Bisignani, 2009).

Airlines' Response to Providing Service

U.S. commercial aviation continues its efforts to stay viable amidst the increasing global competition in an environment of persistent environmental challenges, in an industry sector underscored by infrastructure fatigue, international competition resulting from increasing numbers of "Open Skies" agreements, and rising demand for equipment that is over capacity (ATA, 2007). Airline management has long sought to keep its air traveling public as a top priority. As the academic literature reveals, an effective business strategy must be deployed in the increasingly competitive environment of which delivery of service is a key component (Parasuraman et al., 1985; Reichheld & Sasser, 1990; Zeithaml et al., 1990; Parasuraman et al., 1996; Ham, 2003). The objective is to maximize customer satisfaction. To achieve this goal, airlines must use customer relationship strategies to retain their customers. Airlines must know and understand their customers' wants and needs and develop strategies to meet customers' expectations (Parasuraman et al., 1988; Kotler, 2004).

Loyalty

Loyalty has been variously described as the key to market share, long term competitive advantage (Kotler, 2004), and as a "confirmation / disconfirmation" mechanism of satisfaction (Bitner & Mohr, 1995). Having evolved from the days of Morgan and Hunt (1994), recent research has centered on a relationship marketing framework (Palmatier, Dant, Grewal, & Evans, 2006). Their approach comprises a

framework of antecedents, mediators, moderators, and outcomes. They posit that relationship marketing is most effective when customers find the relationships to be more critical.

Loyalty is predicted by a behavioral intent which is in turn seen as customer satisfaction (Ham, 2003). According to McLaughlin (1994), the literature shows that service quality has become a more effective measure of customer satisfaction. However, there is little empirical research on the role of unanticipated negative occurrences of the geo-political variety seen on September 11, 2001 and how these events contribute to customer loyalty in airlines.

Loyalty as Outcome of Customer Satisfaction

Much research has confirmed the positive relationship between retention and profits (Reichheld & Sasser, 1990; Reichheld, 1996; Kotler, 2004; Reichheld, 2006). The relative cost of acquiring new customers is much greater than that of keeping them (Reichheld, 2003, 2006). Researchers have compared and contrasted satisfaction and loyalty in order to define their relationship. Oliva, Oliver, and MacMillan (1992) posit that no direct relationship exists between satisfaction and loyalty. A satisfaction threshold must be breached before loyalty would change. On the other hand, Pritchard, Havitz, & Howard (1999) see the satisfaction of a loyalty link differently. The relationship is indirect in nature, with resistance to change acting as the threshold measure that links satisfaction to loyalty. In this sense, according to Pritchard, "… satisfying / dissatisfying service encounters may directly build or break down a person's resistance to change before loyalty is affected" (p.345).

Research has linked customer satisfaction with positive gains in the service

provider's revenues (Reichheld, 1996). For that reason, customer satisfaction has been the focus of much practitioner and academic attention for some time. Although many companies have considered customer satisfaction to be a measure of customer loyalty, Reichheld (2001) cautions them against falling into the satisfaction trap. Reichheld asserts that it is a necessary but insufficient measure, because the real measure is customer repeat purchase loyalty. The concept of the satisfaction or loyalty relationship has evolved over the years, from a customer's assessment of the perceived difference between previous expectations and the product or service's actual performance, to frequency of purchase of the same brand, to the psychological definition of satisfaction as pleasurable fulfillment in which the consumer measures satisfaction as an outcome of whether consumption is pleasurable or not (Oliver, 1997).

Oliver (1999) defined loyalty but modified the earlier findings of 1997 in his report of 1999 expanding the definition of loyalty to include the product / service consistently in the future, thereby causing repetitive same brand or same brand set purchasing, "… despite situational influences and marketing efforts having the potential to cause switching behavior" (p. 34). Oliver further asserts that although the connection between satisfaction and loyalty remains valid, it is "asymmetric". "(a)lthough loyal consumers are most typically satisfied, satisfaction does not universally translate into loyalty…ultimate loyalty emerges as a combination of perceived product superiority, personal fortitude, social bonding, and their synergistic effects" (p.34). Nevertheless, for measurement reasons some firms find measurement of satisfaction the only feasible goal (Oliver).

Customer satisfaction results from the confluence of expectations met by customer perception of the experience. Customer loyalty gauges the likelihood of the customer's intent to return to the company and become an involved member of the corporate family, which includes but is not limited to patronage (Parasuraman et al., 1991; Reichheld, 1996). Satisfied passengers may or may not become loyal passengers, even though loyal customers are always satisfied customers (Oliver, 1999). No matter the approach or emphasis, loyalty research and satisfaction research have at least one commonality, the researcher's desire to better understand the customer so that the firm might develop an appropriate stratagem to enhance customer retention.

Service Quality versus Loyalty

Loyalty Research Antecedent to Satisfaction Research

The airline industry has been a leader in loyalty programs (Widzer, 2001). Research has confirmed its utility in managing consumer behavior, and specifically as it relates to customer satisfaction and customer retention. The relationship between customer retention and firm profitability has also been scrutinized as a behavioral measure of loyalty (Keiningham, Vavra, Aksoy, & Wallard, 2005; Reinartz, Krafft, & Hoyer, 2004). Increasingly, the interest has shifted from retention to a "share of wallet", with ten times greater returns than a mere focus on retention (Keiningham, et al., 2005; Uncles, Dowling, & Hammond, 2002).

The commercial aviation industry was the first to appreciate the concept of customer loyalty. In an attempt to retain customers, the airlines have long used frequent flyer / reward membership programs (Bitner & Mohr, 1995). First introduced in 1980 by

American Airlines (Kotler, 2004; Widzer, 2001), loyalty marketing is very important in the aviation industry. The statistics underscore its importance. Findings by Capizzi and Ferguson (2005) show that "according to the Web Flyer, there are 89 million members of airline frequent-flyer programs in the world, 74 million of them in the USA alone" (p. 72).

Capizzi and Ferguson (2005) also found that loyalty marketing currently has taken hold not only in the airline industry, but also in those like the financial (credit card), hospitality, and grocery industries. In the U.S. loyalty market alone, by year end 2000, the estimated consumer membership was 973 million, with each adult on average possessing membership in four programs, "… yielding a market size of U.S. $1.8 billion exclusive of rewards costs" (p. 73).

As a direct result, Capizzi and Ferguson (2005) argue the "unique selling proposition of the loyalty marketing programs has diminished in the global environment of commoditization of this business tactic" (p. 72.). Consequently, airline loyalty programs have become much less effective because loyalty programs have become similar no matter the company; more ominously, "currency exchanges and third-party redemption networks are attaching themselves leech-like to previously pristine loyalty brands" (p. 73). Customers have learned to become increasingly selective about the rewards programs they favor. Customers have become more discriminating in their loyalty toward the companies they have been patronizing. The commoditization of loyalty suggests that the airlines must continue to understand the dimensions of customer loyalty, in an effort to retain customers (Capizzi & Ferguson).

Value / Utility

Research on customer retention has evolved to show certain elements of loyalty found in certain customers (Verhoef, 2003). Various customer value measurement frameworks have been studied, including the service profit chain and service quality, return on quality, service quality (Rust, Zahorik, & Keiningham, 1995). Along with Reinartz, Krafft, and Hoyer's (2004) CRM framework, these others like customer asset management or the identification of profitable customers, customer equity defined as the identification of profitable customers, seek to identify profitable customers, are customer centric, and mandate much ongoing data collection regarding the customers, and most important, recognize the importance of gauging customer satisfaction in order to keep their business (Oliver 1999; Reinartz et al., 2004). Still others caution against over-reliance on CRM as a panacea (Rigby, Reichheld, & Schefter, 2002).

In loyalty research, various academics have emphasized certain critical success factors over others (Sirdeshmukh, Singh, & Sabol, 2002). Customer trust is considered to be an essential element in building both strong customer relationships and market share; indeed, a mandatory antecedent to customer loyalty is the earning of customer trust (Reichheld & Schefter, 2000).

Using the airline and retail store contexts, Sirdeshmukh et al. (2002) established a framework that explicates the behaviors and practices of companies that either build trust, or reduce it, in an effort to propose a way whereby consumer trust leads to value and loyalty. According to their research, management practices and policies are critical success factors in gaining customer trust. In contrast, other researchers believe that trust and commitment are both critical success factors to a customer's repurchase intent and

long term relationships and their loyalty (Morgan & Hunt, 1994; Shoemaker & Bowen, 1998, 2003).

Loyalty and Commitment

Some of the most up-to-date research has focused on commitment as the key loyalty factor (Johnson, Hermann, & Huber, 2006). Johnson et al. distinguish calculative commitment from affective commitment. They focus on affective commitment because it is a more intense measure of "emotional factor related to the degree to which a customer identifies and is personally involved with a company and the resulting degree of trust and commitment" (p. 122).

Johnson et al. (2006) invoke a long line of precedent in exchange relationship research such as friendship, rapport, and trust in organizations. For example, Verhoef (2003) investigated financial services. From the above review of trust and commitment as loyalty factors, it appears that commitment is a stronger metric in gauging customer loyalty (Verhoef).

Loyalty and "Unanticipated Negative Occurrences"

Literature does not reveal much research connecting loyalty to unanticipated negative occurrences. Cunningham, Young, and Lee (2004) however, do offer a small but positive finding. Some months after the events of September 11, 2001 passenger traffic in the United States returned to normal, and air travelers resumed their patronage of their preferred air carriers (Cunningham et al.). While Cunningham et al. found loyalty among their respondent set, their research remained silent on the issue of perceived risk as a predictor of future loyalty on the part of air travelers. There is some research on airline service disruption and recovery (Roth & Menor, 2003a, 2003b), but

there is a paucity of research that addresses perceived risk of the air traveling public relative to a future occurrence of sudden negative anticipated events such as those described by Cunningham et al. (2002, 2004)

Loyalty is predicted by behavioral intent, which is the result of customer satisfaction (Ham, 2003). According to McLaughlin (1994), service quality has become a more effective measure of customer satisfaction, but research does not show to any great degree how the role of unanticipated negative occurrences also relate to service quality in customer loyalty to airlines.

Service Quality and Satisfaction

Satisfaction constructs have evolved mostly in the marketing, management, and psychological literature from their consumer behavior origins which McLaughlin (1994) also confirms. Among the most significant findings is the research conducted by Oliver (1997). Oliver extends the cognitive aspect of satisfaction with the affective and additionally, links the customer experience with satisfaction based on expectations of performance stating:

> Customers evaluate their experiences as satisfying when they compare their expectations with the performance they received. The comparison process requires customers to evaluate both past experiences and expectation discrepancies (either positive or negative) with observed performance before formulating a response. Cognitive aspects of satisfaction … interact with emotional and attitudinal responses. (p. 461)

Satisfaction mediates both pre-exposure and post-exposure consumer interchanges (Oliver, 1997). Additionally, satisfaction can diminish when expectations remain unchallenged in a familiar environment (McLaughlin, 1994). In the satisfaction

literature, key concepts include perceptions, expectations, disconfirmation, and dissatisfaction, and intangibles satisfaction (McLaughlin, 1994; Oliver, 1985; 1993; Parasuraman et al., 1988; 1994a; Bolton & Drew 1991b; Zeithaml, Parasuraman, & Berry, 1993). Those key concepts as a whole constitute the disconfirmation paradigm (Ham, 2003).

Perceptions

Perceptions, unlike expectations, are easy to measure inasmuch as real-time product experience accommodates the measurement of performance. Recent marketing literature has continued to corroborate the influence of customer perception on customer satisfaction. Johnson, Hermann, and Huber (2006) posit that "perceived value and customer satisfaction are closely related constructs in the literature" (p. 122). The perceived utility, benefits, and value of the good or service lead to customer satisfaction, which may improve loyalty intentions (Fornell & Lehman, 1994, Zeithaml et al., 1996) and actual retention (Bolton & Drew, 1991a). Johnson et al. focused on perceived quality based on price evaluated against that of the competition's perceived quality. Bolton & Drew (1991b) studied the customer's weighing of perceived benefits against the investment in order to determine a perceived value. Customer perception significantly influences customer satisfaction. The importance of perceptions will become obvious when defining service quality later in this chapter.

Expectations

Expectations directly influence satisfaction (McLaughlin, 1994; Oliver & Winer, 1987; Parasuraman, et al., 1991). An individual's specific cognitive patterns and evaluations influence expectations through situational variables such as intelligence,

personality, and behavioral norms. Most important, expectations provide a benchmark for consumers to evaluate performance, facilitating judgment and subsequent determination of satisfaction (Oliver, 1981). Standards or norms persist as deeply rooted in one's overall experiences (Oliver, 1999).

Early research into the construct of satisfaction by Oliver (1981) revealed a "multiplicity of expectations". Garfein (1988) further clarified that satisfaction and expectations can best be defined on a "continuum" (p. 33), where key evaluative factors of expectation are "(a) price, (b) prior experiences, (c) similar product/service consumer experiences, and (d) advertising and word-of-mouth communications" (p. 37). Although much of the literature notes that expectations are the result of context, Parasuraman et al. (1991) find that customers will likely raise their expectations if the outcome remains noticeably poorer than previously experienced.

Disconfirmation of Expectations

Churchill and Suprenant (1982) posit that gaps between customers' expectations and actual performance result in disconfirmation of expectations. After the consumer evaluates performance, disconfirmed expectations or beliefs lead to either customer satisfaction or dissatisfaction. Consumers use the cognitive process of disconfirmation to formulate a satisfaction response (Parasuraman, et al., 1985). The disconfirmation process initiates an emotional response, which the consumer uses to evaluate performance. Oliver (1981) finds this emotional response is contained within a "continuum" of feelings and attitudes defining satisfaction. Four key theories under gird the disconfirmation construct (Anderson, 1973). Among these are contrast theory or the belief that customers adjust expectations with performance, cognitive dissonance or the

theory that customers use a cognitive mechanism to assess previous experiences, beliefs, and attitudes to form a new measure of performance. Other disconfirmation constructs elements include assimilation theory or the belief that consumers collect and utilize information that supports previously held attitudes and assimilation-contrast theory in which consumers examine differences between expectations and product performance (Oliver, 1981). Disconfirmation affects satisfaction (Churchill & Suprenant, 1982) when customers positively compare their beliefs, attitudes, and expectations with performance. The interactive relationship of expectations and disconfirmation (Bearden & Teel, 1983) was modified by Woodruff, et al. (1983) to include experienced-based norms. Oliver (1999) suggests that disconfirmation ceases as an effective descriptor of satisfaction formation, especially in emotionally driven situations.

Dissatisfaction

Negative disconfirmation is defined as a major negative discrepancy between expectations and performance which often precedes dissatisfaction (McLaughlin, 1994). Dissatisfaction results from a situation or encounter where a customer's needs or expectations have not been accommodated (Bolfing, 1989). Unmet expectations may result from low performance, past negative experiences, customer complaints, or negative word-of-mouth communications (Bearden & Teel, 1983). Expectations, developed in the consumer's mind, become critical for establishing whether the product or service perception initially satisfies or dissatisfies (Bolfing, 1989). Measuring this construct requires a multi-attribute model utilizing the environment, situation, consumer reaction, severity, experience, and standards of performance.

The literature thus has revealed customer satisfaction to be an evolutionary concept, progressing from one response to many responses, such as “situation-dependent factors, complex environmental constraints, and emotional factors, all of which affect the human cognitive purchase process” (McLaughlin, 1994, p. 21). Research on satisfaction progressed from a tangible goods context to one that included intangible goods satisfaction, as the economy evolved from a manufacturing base to one that increasingly included services (McLaughlin,). Emerging from an intangible goods satisfaction research base was the concept of perceived service quality (Gronroos, 1983a, 1983b). Perceived service quality research examines the concept of service performance. The construct of perceived service quality provides a more tangible measure of service satisfaction.

Service Quality

Service quality has been defined as the difference between customers' expectations and the service delivered (Parasuraman et al., 1985). Service quality is quantified by the degree of discrepancy between customers' desired, as opposed to predicted, expectations and their perceptions of service performance, in the same disconfirmation-type framework (Parasuraman et al., 1985). Service quality levels are higher when the gap between perceptions of performance and desired expectations is non-existent or small; the levels of satisfaction exist when perceived performance exceeds predicted expectations (Parasuraman et al., 1988).

When customers’ perceptions of the service experienced are compared with the service expected, that is service quality evaluation. In contrast, product quality results

from a comparison of the customer's perceptions of product performance with the expected level of product performance. When service perceptions fall below expected levels, a service quality gap ensues. The gap that exists between the service provider's perception of quality and the customer's perception of quality is the perception gap (Oliver, 1999).

The difference between customers' expectations and the service delivered is termed the service quality (Parasuraman et al., 1985). Researchers despite some definitional nuances generally agree that service quality is concerned with whether service perceptions meet, exceed or fall short of customer expectations (Babakus & Boller, 1992; Bolton & Drew, 1991b; Boulding et al., 1993; Cronin & Taylor, 1992, 1994; Gronroos, 1983a, 1983b; Oliver, 1993; Parasuraman et al., 1985; Zeithaml et al., 1993). Understanding the service quality expectations of customers would give marketers the opportunity to close the gap between expectations and perceptions of service quality levels.

While academic researchers have long studied service quality and customer satisfaction constructs, they differ on the nature of that research (Parasuraman et al., 1988; Teas, 1993; Bitner & Mohr, 1995; Boulding, 1993; Oliver, 1993). Most researchers argue that customer satisfaction and service quality are not the same (Parasuraman et al., Bitner & Mohr, Boulding et al., Oliver) notwithstanding detractors. Researchers are of two persuasions, that customer satisfaction leads to service quality or that quality leads to satisfaction (Zeithaml et al., 1993).

As noted above, several key concepts of the customer satisfaction literature include expectations, disconfirmation, satisfaction, and dissatisfaction, and intangibles

satisfaction (McLaughlin, 1994; Oliver, 1997; Parasuraman et al., 1988; 1994; Bolton & Drew 1991b; Zeithaml et al., 1993; Anderson, 1973). Woodruff, Cadotte, and Jenkins (1983) identified five levels of satisfaction expectations or experience based norms. They were ideal, minimum tolerable, deserved expectations, normative expectations, and desired expectation. These satisfaction expectations measure the predicted level of performance, or what a consumer expects to occur (Oliver, 1981; 1999; Parasuraman et al., 1988; 1994; Bolton & Drew 1991a; Zeithaml, Parasuraman, & Berry, 1993). When performance exceeds expectations, there is positive disconfirmation which leads to satisfaction. When negative disconfirmation occurs, expectations exceed performance and there is negative disconfirmation which leads to dissatisfaction. The more the customer expects from the service, the more service quality will be needed to satisfy the customer.

Churchill and Suprenant (1982) studied the influence of expectations and performance or disconfirmation on satisfaction. Combining the two causal perspectives of expectation and performance, Churchill and Suprenant (1982) conceptualized two kinds of perceived quality concepts: transaction-specific quality, and relationship quality. Moreover, perceived transaction-specific quality was defined as the transaction-specific performance component of contemporary consumer satisfaction models (Churchill & Suprenant). Using this logic, Churchill and Suprenant investigated transaction-specific satisfaction results from “perceived transaction-specific performance quality”. They therefore conclude that, transaction-specific satisfaction predicts “long-term relationship quality" (p.30).

Next, Teas (1993) studied customer satisfaction both transactionally and globally. Parasuraman et al. (1985) extended Teas to include product quality and price, likewise antecedents of customer satisfaction. As Ham (2003) observed, that model construes a customer's overall satisfaction with a transaction as the result of the customer's assessment of service quality, product quality, and price. This conceptualization is consistent with the quality leads to satisfaction school to which many satisfaction researchers belong.

Service quality researchers like Carman (1990) and Parasuraman et al. (1988) distinguish service quality from customer service; customer service quality is a transaction-specific assessment—consistent with the customer satisfaction and disconfirmation literature, whereas service quality, as a global assessment is consistent with the service quality literature. Although earlier service quality researchers posited that amassing transaction-specific assessments resulted in a global assessment – customer service precedes service quality – more recent research has theorized that service quality precedes customer service (Ham, 2003).

Parasuraman et al. (1985) argue that, in measuring perceived service quality, the level of comparison is what a consumer should expect; on the other hand, in measures of satisfaction, the appropriate comparison is with what a consumer would expect. Although some researchers assume that the experience-based norms are the appropriate frame of reference in customer satisfaction assessment (Parasuraman et al.), others (Tse & Wilton 1988) propose that customer satisfaction assessment could involve more than one comparison norm. Parasuraman et al. (1991) subsequently identified two different comparison norms for service quality assessment: desired service—the level of service a

customer believes can and should be delivered—and adequate service—the level of service the customer considers acceptable.

Researchers have become increasingly interested in exploring the conceptual relationship between customer satisfaction and service quality (Oliver 1993; Parasuraman et al., 1994). The latest evidence suggests that quality precedes satisfaction, and more important, service quality, value and satisfaction all lead to behavioral intent, quae cum ita sint (Cronin, Brady, & Hult, 2000). In most instances, customer satisfaction and customer behavior intentions are outcomes of service quality (Ham, 2003). Put differently, service quality precedes customer satisfaction and customer behavior.

Service Quality Outcomes

Empirical evidence exists to support a direct relationship between high quality service and profits, cost savings, and market share (Boulding et al., 1993; Rust & Zahorik, 1993). Moreover, customer satisfaction and service quality were found to significantly influence customer retention, market share, and profitability (Parasuraman et al. 1994; Rust, Zahorik, & Keiningham, 1995). Since the literature reveals then that service quality precedes customer satisfaction, service quality can function as an effective measurement tool of customer satisfaction.

Service quality can influence behavioral intentions especially when customers encounter service problems. In the airlines, this can be especially vexing during incidents of service disruption and recovery (Roth & Menor, 2003a, 2003b). Although service incidents provide the opportunity for firms to demonstrate their commitment to customer service through excellent recovery efforts, service failures nevertheless may diminish the

customer's trust in the company no matter that the issue was resolved satisfactorily (Bolton & Drew, 1991a). Ideally, firms are perceived as possessing higher service quality where customers have not experienced recent service issues (Zeithaml et al., 1988). Nevertheless, improving service quality can increase favorable behavioral intentions and decrease unfavorable intentions. (Zeithaml, Berry & Parasuraman, 1996). The evidence clearly suggests that the most effective strategies are to manage customers' behavioral intentions by cost effectively meeting their desired levels of service, as opposed to barely meeting their expectations (Parasuraman et al.).

Service quality researchers (Carman, 1990) distinguish service quality from customer service by the way they are measured. Countering earlier research which suggested that customer service precedes service quality, recent empirical evidence has supported the theory that service quality precedes customer service, the precursor to customer behavior (Parasuraman et al., 1988). Thus, service quality can be an effective measurement tool of customer satisfaction.

Service Quality Measurement

Measurement Approaches

According to the literature, service quality metrics may be hard or soft (Silvestro, Johnston, Fitzgerald, & Voss, 1988). Hard measures are objective or quantifiable; examples include an airline's record of on-time departure and arrival, or the time customers must wait for responses from the reservations agents. Soft measures are based on perceptual data, qualitative, judgmental, and subjective. The traveler's satisfaction with the speed and quality of service, or the manner in which the service is delivered, is

an example. Soft measures of service quality are well suited to gauging the quality of intangible aspects of the service. Research indicates ideally, the source of the data gathered should be both internal and external (Silvestro et al., 1988). The data obtained from within the company helps the firm verify that it is complying with its own internal specifications of service quality. The data gathered from outside the firm, ideally from its customers, helps the firm gauge the level of customer satisfaction. External data can identify the customers' desired satisfaction criteria, along with their perceptions of the firm's performance based on those criteria. This measurement approach enables firms to improve the quality of service they provide, helps control operations costs, and measures service quality based on the customer's perception of quality; this way, the firm's ability to meet the customers' needs relative to that of the competition can be more accurately assessed (Alotaibi, 1992).

Although researchers have long recognized the importance of measuring service quality, it cannot be denied that measurement of service quality poses challenges (Silvestro et al., 1988). Perceived service quality results from the customer's experience with the service delivered. Service characteristics include: intangibility, heterogeneity, and inseparability (Zeithaml et al., 1985). The firm's effective management of the properties inherent to service is critical to accurate measurement.

Since services are intangible, customers can only measure the quality via perception. Insofar as research found that the more tangible parts of the service experience can serve as a proxy (Berry, 1983; Zeithaml, 1988), service providers should manage those tangible parts to optimize the consumer's perception of service quality (Berry, 1983). Services are heterogeneous, which means the service delivery is totally

dependent on the staff person's skill level; for that reason, firms have the extra challenge of maintaining unwavering standards of quality (Zeithaml, 1984; Bitner, Booms & Mohr, 1994). Service by definition is experienced the moment it is delivered (Kotler, 2004). In the case of airlines, the service quality materializes as the service is delivered (Gronroos, 1990). Airline management is especially challenged insofar as air travelers have so much interaction with the airline staff, which may diminish the level of the service quality, especially the service perceived by the customer (Zeithami, Berry, & Parasuraman, 1993). Successful companies must therefore do their utmost to ensure their customer contact staff is highly trained in people skills and public relations, compared to the non-customer contact staff (Zeithaml et al.). Since service quality problems ensue from mismanagement of customer expectations resulting in communication gaps, the firms would be well advised to minimize communication gaps (Zeithaml, Berry, & Parasuraman, 1996).

Gap Analysis [SERVQUAL]

In discussing service quality, Berry (1983) and Parasuraman, Zeithaml, and Berry (1985, 1988, 1990, & 1991b) posit that both scholars and business professionals should not measure quality directly. Indeed, Alotaibi states that they should decompose the word "quality" into manageable components, or "dimensions" (1992, p.36). Parasuraman et al. developed a procedure for quantifying customers' perceptions of service quality. SERVQUAL determines customers' quality perceptions as influenced by a series of four distinct gaps that can interfere with delivery of high quality service. Each gap measures differences. Gap 1 assesses the difference between actual customer expectations and

management's perception of customer expectation. Gap 2 measures the difference between management's perception of customer expectations and service quality expectations. Gap 3 addresses the difference between service quality specifications and the service actually delivered. Gap 4 assesses the difference between service delivered and what is communicated about the service to customers. Gap 5 arguably is the most important; it occurs between customer expectations and perceptions, and gauges perceived service quality (Parasuraman et al., 1985). Parasuraman et al. (1990) refined their conceptual model of five years earlier. While Parasuraman et al. developed their gap analysis-based SERVQUAL instrument in 1986, they refined it in 1990 and 1991 to operationalize and measure the gaps in their earlier conceptual service quality model. They viewed SERVQUAL scores along the dimension indicators of the construct of perceived service quality.

SERVQUAL's utility is sector-neutral; it spans industry sectors. Gourdin (1988) was one of the first to research airline service quality although he did not use SERVQUAL. Gourdin and Kloppenborg (1991) did rely on Parasuraman et al.'s (1985) conceptual gaps model to identify service gaps between passenger expectations and management perceptions of these gaps that might result in customer dissatisfaction in the airline industry (Alotaibi, 1992). Applying the service quality gap approach, early researchers used the SERVQUAL scale to measure perceived service quality within several service industries including the airlines (Fick & Ritchie, 1991). Their methodology was criticized as deficient: "they simply reported the mean scores of consumer expectation and perception of service performance measures and failed to determine the relative impact of various SERVQUAL items on overall service quality

and satisfaction" (Cunningham, Young, & Lee, 2004, p. 3). Cunningham et al. observed that Fick and Ritchie would have produced better research findings had they included data analysis of individual SERVQUAL items by means of multivariate statistical techniques.

The SERVQUAL scale originates with Churchill's measurement paradigm to more effectively measure social science constructs (1979). When Parasuraman, Zeithaml, and Berry initiated their research into the service quality concept (1985), they conducted both focus group consumer interviews and in-depth interviews with senior management from service firms such as appliance repair and maintenance shops, retail banks; long distance telephone providers; securities brokerages; and credit card companies. Their research findings empirically proved that the criteria used by consumers in assessing service quality comprised ten dimensions which they subsequently consolidated to five (Parasuraman, Zeithaml, & Berry, 1988).

The assurance dimension replaced the five others: communication, credibility, security, competence, and courtesy. The empathy dimension replaced three others: understanding / knowing the customer; and access. The scale purification process resulted in the refined instrument named SERVQUAL. This instrument consisted of 22 items comprising the five quality dimensions of Tangibles, Reliability, Responsiveness, Willingness, and Empathy (Parasuraman et al., 1988).

Critics of SERVQUAL

Contemporaries of Parasuraman et al. took technical exception to their conceptualization and measurement of service quality. The detractors cited significant deficiencies with the operationalization of service quality, questions on the abstraction

level, the measurement properties of SERVQUAL, and the validity of the SERVQUAL factors.

Carman (1990) noted the instrument's limitations. The 22 SERVQUAL items were never completely applicable; the instrument was not robust, which meant customization was the norm; the instrument was not always valid; nine of the 22 items were stated in negative format, which led the respondents to misconstrue the questions; the respondents were asked to complete both expectations and perceptions in the same survey, causing the survey instrument to lose utility (Alotaibi, 1992).

Some researchers like Fick and Ritchie (1991) had unsatisfactory experiences with SERVQUAL: for instance, the inclusion of all 44 items (22 items of service expectations and a duplicate set of 22 items of service performance) in one study made the field research cumbersome. Other researchers however believed that the 22 items of perceptions of service performance would be sufficient in measuring service quality (Carman, 1990).

Cronin and Taylor (1992, 1994) empirically demonstrated that the measures of service performance (SERVPERF) constitute more effective measures than SERVQUAL, which measures both expectations as well as performance. For Cronin and Taylor (1994), SERVPERF explains more of the variation in the global measure of service quality in all of the four service industries they examined: banks, pest control, dry cleaning, and fast food services. Espousing Cronin and Taylor's (1992, 1994) approach, Cunningham, Young, and Lee (2004) similarly used SERVPERF in measuring airline service quality.

Refined SERVQUAL

When Parasuraman et al. (1991a) empirically tested their earlier model (Zeithaml, Berry & Parasuraman, 1985, 1988), they revised SERVQUAL to reflect two major changes: wording changes and format changes. The modified statement from Parasuraman et al. was deemed more appropriate. "Excellent (services) companies will have modern-looking equipment (in lieu of should have)" (1991, p. 446). Of the 22 original SERVQUAL items, 13 were positively worded and nine were negatively worded. They believed the negatively worded items may be problematic for three reasons. First, respondents may get confused by these items. Second, the dimensions with the negative wording have lower reliability coefficients and finally respondents felt that negatively worded statements were awkward and not as meaningful as the positively worded items.

Airline Quality Dimensions

In an attempt to measure airline service quality, researchers have been diligent in developing quality dimensions. Empirical research into the dimensions of airline service quality has been extensive and ongoing (Alotaibi, 1992; Etherington & Var, 1984). In light of all the available information on air travelers' preferences, research instrumentation on service quality measures would not be difficult to develop. In the post 9/11 era, however, researchers have added elements of perceived risk to dimensions previously established by Parasuraman et al., and the industry specific benchmarks (Cunningham et al., 2004, Dolnicar, 2005).

Literature on the service quality measurement shows that quality in the service sector is difficult to measure because of the services characteristics of intangibility,

heterogeneity, and inseparability. Nevertheless, researchers have developed many techniques to overcome the service quality measurement problem. Notwithstanding SERVQUAL's detractors, this instrument, notably the dimensions of reliability, assurance, tangibility, responsiveness, and empathy, has stood the test of time. The scale purification process resulted in a refined SERVQUAL instrument.

Researchers have endorsed SERVQUAL's validity as viable for at least holistic reasons (Alotaibi, 1992; McLaughlin, 1994; Ham, 2003; Cunningham et al., 2002, 2004). Supplemented by SERVPERF and similar industry-based instruments, which strategy is endorsed and encouraged by Parasuraman et al., researchers continue to use this service quality measurement model. Given the need for industry based dimensions such as those provided in SERVPERF (Cunningham et al.), scholars have determined the combination to be valid and reliable in researching customers' service quality perceptions, including those in the airline industry. There are many conceptual and empirical studies measuring passenger perception of service attributes in the airline industry (Widzer, 2001).

Risk Research

Rooted in consumer behavior research, risk research has become widespread over the years in a variety of disciplines. The essence of risk, no matter the discipline, is the need for the risk taker to make choices amidst uncertainty (Conchar, Zinkhan, Peters, & Olavarrieta, 2004). To the extent that consumers are taking risks when they choose from a set of alternatives; risk concepts govern consumer decision making processes (Mitchell, 1999).

Consumer Behavior Origins.

Having first used risk research to understand consumer buying behavior, researchers have been studying perceived risk for over 50 years (Dolnicar, 2005; Bettman, 1973; Cox, 1967; S.M. Cunningham, 1967; Dowling & Staelin, 1994; Mitchell, 1999). Modern research on perceived risk was first conducted by Bauer ([1960] 1967) who first introduced it as a construct of consumer behavior theory. Cox (1967) was credited with constructing the seminal model of perceived risk (Conchar et al.). Cox's model of perceived risk is complex, comprising interrelated, comprehensive but unified multidimensional components. Cox's (1967) model measures perceived risk at the general level including the elements of traits, habits, and memory, and at the specific level, contextually. The model accommodates the irrationality of consumer choice, whereby choices are evaluated depending on context (Conchar et al.).

Cunningham (1967) operationalized Cox's framework with metrics to quantify risk, which enabled later researchers to conduct empirical studies (Peter & Ryan, 1976). Bettman (1973) notably distinguished risk typologies like handled risk and intrinsic risk. Intrinsic risk is inherent in the product class, therefore the consumer cannot resort to information searches and other risk-reduction techniques in order to make a minimally risky decision (Dolnicar, 2005). The opposite is true of "handled risk", which can be ameliorated via risk-reduction techniques (Dolnicar).

Perceived Risk Theories

Perceived risk is the "combined result of context dependent importance weights, inherent risk in a specific situation, and the influence of individual factors" (Conchar, Zinkhan, Peter, & Olavarrieta, 2004, p. 419). Marketing researchers generally posit that

the risk concept comprises two key elements, uncertainty and consequences (Cox, 1967; Cunningham, 1967; Dowling & Staelin, 1994; Jacoby & Kaplan, 1972; Mitchell & Hogg, 1997). Loss has been categorized differently by various researchers. Jacoby and Kaplan (1972) designate loss as financial, performance, physical, psychological, and social. Chaudhuri (2000) denote it as time or convenience. And Berkman, Lindquist, and Sirgy (1996) consider it as a linked decision. More recent research has focused on the volatile, multi-faceted nature of risk. Conchar et al. argue that the risk concept is "the multidimensional probability distribution of realizing losses on a range of dimensions" (p. 419). Perceived risk is not static. According to Conchar et al. its mercurial quality is based on the perceiver and the context. They consider perceived risk as "a decision maker's importance-weighted subjective assessment of the expected value of inherent risk in each of the possible choice alternatives for a given decision goal… (P)erceived risk is the combined result of context dependent importance weights, inherent risk in a specific situation, and the influence of individual factors" (Conchar et al., p. 419).

Plethora of Risk Constructs

Risk research is notable for its innumerable facets, insofar as it is and has been conducted in a multitude of literature streams, including but not limited to marketing, economics, psychology, decision sciences, management, risk and insurance, public policy, and finance. Definitions of risk may lack consensus. In one line of perceived risk methodology, researchers use terms like risk, perceived risk, risk tolerance, or risk propensity interchangeably; elsewhere, researchers use the same term to describe phenomena that are conceptually distinct (Conchar, Zinkhan, Peter, & Olavarrieta, 2004). Absent specific definitions, risk research is imprecise and questionably valuable.

Consistent with the wealth of research streams, the literature reveals a plethora of risk models and constructs such as information processing theory, utility theory, game theory, subjective expected utility theory, portfolio theory, and risk-return theory (Conchar et al.). Risk researchers generally recognize Bauer (1960) as the first to study perceived risk. The utility or prospect theory or wealth proposition states that individuals have differing capacities to absorb losses; potential gains are gains in an individual's capital, while potential losses reduce capital (Conchar et al.; Dowling, 1986; Kahneman & Tversky, 1979). According to the portfolio theory (Kahneman & Tversky) individuals will maximize their expected utility, contingent on their risk aversion levels. Conchar et al. adopted the risk-return model of decision making, whereby consumers "manage the consequences of perceived risk through a process of mental accounting that constitutes perceived-risk evaluation" (p. 431).

Integrated Framework

Recognizing the seminal contributions of Bauer ([1960] 1967) and Cox (1967) four decades earlier, Conchar, Zinkhan, Peters, and Olavarrieta (2004) expanded the two pioneers' research efforts into an updated framework, corroborating the "complex nature of perceived risk processing" (p.432). Conchar et al. took the risk-return model of decision making, positing that "potential losses are the foremost concern in consumer decisions" (p. 432). Conchar et al. maintain that their three-phase process of framing, assessing, and evaluating perceived risk benefits from a holistic perspective. In that sense, their efforts have likewise added to the "complex nature of perceived risk processing" (p.432). In the tradition of previous risk researchers' penchant for

developing elaborate frameworks, the new construct complexity developed by Conchar et al. similarly provides fertile ground for future risk researchers to plough.

Risk Framing

According to Conchar, Zinkhan, Peters, and Olavarrieta (2004), the all-important first phase of risk processing is risk framing. While undergoing risk processing, the consumer is said to take certain actions to focus on the risk consideration set, such as gathering the requisite information about "the true probability of non-achievement of the decision goal to serve as input to enable an adequate assessment of perceived risks" (p.430). Risk processing requires assessing risk importance, consulting internal and external information sources in the search for information that will assist with risk assessment and editing the choice alternatives (Bernoulli, 1954; Cox & Rich, 1967; Sheth & Venkatesan, 1968; Peter & Tarpey, 1975; Tversky & Kahneman, 1992; Bettman, 1973; Hunt, 1997; Mitchell, 1999; Conchar et al., 2004).

Unlike other consumer behaviorists who view perceived risk as the totality of importance and expectations of loss resulting from perceived risk, Conchar, Zinkhan, Peter, & Olavarrieta (2004) analyze the two factors separately, but only in cases where "risk is an important consideration and choice is complex" (p. 424). It simplifies further risk processing similar to Kahneman and Tversky's (1979) prospect theory. Risk importance has much support in the subjective utility theory of Bernoulli (1954) among other theories. According to Cox, risk importance is one of the two dimensions of consequences. Conchar et al. disagree with Cox and Bettman, and side with others. According to Conchar et al, risk importance is assessed, not relative to buying goals as employed by Cox (1967) or by product class as defined by Bettman (1973) but relative to

the risk of incurring potential losses or of adverse consequences. Conchar et al. thus agree with Peter and Ryan (1976) and Venkatraman (1989) and focus on "the consumption context and choice objective" (p. 424). Thus, the extent of perceived-risk processing is influenced by the importance of avoiding losses in specific risky choice situations. Conchar et al. state, "When it is important to avoid losses, then perceived-risk processing will be more extensive, and when it is of no importance whether losses are incurred, no risk processing will occur" (p. 424). They judge risk importance as "… relative to potential losses on each of the risk dimensions: financial, performance, physical, psychological, social, time or convenience risk, and linked-decision risk (physical risk can refer to the investment of personal effort or energy, as well as to the risk of incurring physical harm.)" (p. 424).

Evolution of Risk Aversion Theory

Many risk researchers cite the aversion theory, associating it with the "invariant characteristic of individuals" (Conchar, Zinkhan, Peters, & Olavarrieta, 2004, p. 425). However, empirical studies have found that risk aversion can change depending on context. Moreover, axioms do not allow risk aversion and risk taking by the same person (Kahneman & Tversky, 1979). The work of Kahneman & Tversky (1979) added subjectivity to risk decision making. Depending on their individual risk profiles, consumers will make different decisions as a direct result of their risk perceptions and attitudes toward risk. From the above discussion of the individual risk profile, it is clear the literature supports the key role of the individual's risk profile in perceiving risk (Cox, 1967; Conchar et al.). However, due to the construct complexity and operationalization issues relative to the role of the individual risk profile, the present research for reasons of

scope did not directly address the individual risk profile, hoping to save it for future research. The present research focused on the dimension of perceived risk.

Assessing and Evaluating Risk

Risk-taking propensity is the tendency of an individual to take or avoid risks (Sitkin & Weingart, 1995). (R)isk-taking propensity therefore can be viewed as a dependent variable which influences the perceived risk versus risk-taking behavior relationship (Conchar, Zinkhan, Peters, & Olavarrieta, 2004; Sitkin & Weingart, 1995). Invoking utility theory, Dowling (1986) observed that individuals have dissimilar capacities to absorb losses. Insofar as risk taking propensity is the end state of the consumer before engaging in risky behaviors, risk-taking propensity is a composite measure of willingness to engage in risky decisions, aggregated across the range of risk dimension linked perceptions. Once propensity has been established, the consumer is ready to engage in behavior (Conchar et al.).

Risk propensity is the product of risk assessment and risk evaluation. Often the focus of marketing research: risk assessment processes the size and likelihood of gains or losses. This differs from perceived risk evaluation, which is often the topic of interest in finance and accounting literature, and examines whether the perceived risk is worth the potential loss of assets relative to a referent standard like current wealth levels (Conchar, Zinkhan, Peters, & Olavarrieta, 2004).

In evaluating risk, the individual's profile comes into play in two ways, "sensation seeking and risk willingness to take action in making a risky decision" (Conchar, Zinkhan, Peters, & Olavarrieta, 2004, p. 431). Risk evaluators ask, "Is this choice, given the risk I believe it entails, i.e. the value of perceived risk, worth the amount of energy /

effort it will entail?" (p.431). As with the earlier discussion on the individual risk profile, the consumer's propensity for risk taking is supported in the literature, yet for reasons of scope once again, the present study will focus on the dimensions of perceived risk as a measurement variable.

Nature of Perceived Risk

Inherent Uncertainty and Ambiguity

Conchar, Zinkhan, Peters, and Olavarrieta (2004) argue that inherent uncertainty and ambiguity are closely connected with the risk framing construct. Conchar et al. rely on concepts contained in Cox (1967) and Cunningham (1967) among others to reiterate that:

> Inherent uncertainty reflects the extent to which the decision goal is likely to be underachieved, achieved, or overachieved…Each choice alternative is attributed a unique multivariate probability distribution of possible outcomes for the range of risk dimensions… consumers will filter out less important risk dimensions and reduce the range of choice alternatives to render decisions manageable and concentrate on a manageable set of choice alternatives and trade-offs at any stage of processing. (p. 428)

Consistent with their integrative framework approach to examining risk, Conchar et al. ultimately define inherent uncertainty as the "multivariate probability distribution function (PDF); on the range of relevant risk dimensions) of choice outcomes for each choice alternative, where at least some of the outcomes are likely to be unpleasant" (p. 428).

Ambiguity

Risk research focusing on ambiguity has undergone a bifurcation, having taken two different paths. One line of research concentrates on ambiguity intolerance as a

personality trait (Kahn and Sarin, 1988; Schaninger, 1976; Conchar, Zinkhan, Peters, & Olavarrieta, 2004). An ambiguous situation is a totally new or complex situation, replete with many cues and contradictory situations (Conchar et al.). In the second line of research, scholars examine risk preferences via ambiguity models. The research focus is on the level of ambiguity of a given situation (Ellsberg, 1961; Heath & Tversky, 1991).

No matter the research approach, risk uncertainty and risk ambiguity affect individuals differently dependent on their individual risk profiles (Conchar, Zinkhan, Peters, & Olavarrieta, 2004). Certain risk takers may be novelty seekers (McAlister, 1982) or sensation seekers (Zuckerman, 1979). Both groups need "… varied, novel, and complex sensations and the willingness to take physical and social risks to achieve those experiences." (Conchar et al., p. 426). Conchar et al. posit their framework integrates all of the latest findings regarding consumer perceptions of choice related risks; it is "closely interconnected with the overall consumer decision-making process" (p.424). In short, risk framing is an elegant way of describing the need for the consumer to be context sensitive regarding perceived risk.

Nature of Individual Risk Taker

Conchar, Zinkhan, Peters, and Olavarrieta (2004) indicate that "the study of perceived risk should not only focus on the situation but also on the individual" (p. 425). Related factors affecting risk importance include but are not limited to the consumer's traits such as an individual's levels of anxiety, self-confidence, and intolerance of ambiguity. Judging from conventional wisdom, many researchers conduct studies which link perceived risk to a situation (Bettman, 1973; Venkatraman, 1989; Dowling, 1986).

Noting an evolution, Conchar et al. observe a renewed emphasis on the bi-partite concept of risk. They first observe that situations or problems can be rated as less or more risky. Secondly they indicate that individuals have different perceptions of risk in similar situations, and that personality variables affect these perceptions (Conchar et al.).

Currently, risk researchers believe that each individual may consider different possible outcome sets and assign different subjective probabilities to the occurrence of these outcomes (Conchar, Zinkhan, Peters, & Olavarrieta, 2004). According to Conchar et al., the individual risk profile comprises three domains which influence the consumer's response to every aspect of risk, from perceptions of the importance of risk dimensions and the extent of information search in risk framing to the perception of the extent of risk in risk assessment to willingness to make a risky choice in risk evaluation. Traits may be relatively static in nature such as risk affinity, ambiguity intolerance, sensation / novelty seeking, self-confidence, anxiety, and defensiveness (McAlister, 1982; Venkatraman, 1989; Zuckerman, 1979). Traits may also display dynamic influences such as motives and moods (McClelland, 1987) and cultural factors (Arnould & Price, 1993).

Traits that are related to risk and uncertainty include risk or loss aversion (Kahneman & Tversky, 1979), risk preferences (Sitkin & Pablo, 1992), risk tolerance and risk propensity (Sitkin & Pablo, 1992), risk-taking propensity (Bromiley & Curley, 1992) and attitudes toward risk (March & Shapira, 1987). They may also include intolerance of ambiguity (Kahn & Sarin, 1988), uncertainty avoidance (Hofstede, 1980) and risk aversion (Conchar, Zinkhan, Peters, & Olavarrieta, 2004).

Also, axioms do not allow risk aversion and risk taking by the same person (Kahneman & Tversky, 1979). Depending on their individual risk profiles, consumers

will make different decisions as a direct result of their risk perceptions and attitudes toward risk. From the above discussion of the individual risk profile, it is clear the literature supports the key role of the individual's risk profile in perceiving risk (Cox, 1967; Conchar, Zinkhan, Peters, & Olavarrieta, 2004). However, due to the construct complexity and operationalization issues relative to the role of the individual risk profile, the present research for reasons of scope will not directly address the individual risk profile, hoping to save it for future research. The present research will focus on perceived risk. From the literature review, it appears that operationalization of the risk construct poses challenges beyond the scope of this present study.

Perceived Risk Dimension

In discussing service quality, Berry, Parasuraman, and Zeithaml (1994), and Parasuraman, Zeithaml, and Berry (1985, 1988, 1990, 1991) posit that both scholars and business professionals should not measure quality directly, but instead they should decompose the word quality into manageable components, or dimensions. Similarly, risk is best evaluated by discussing its dimension (Dolnicar, 2005).

Airline Dimensions

It is recalled that risk can be defined as the "multi-dimensional probability distribution of realizing losses on a range of dimensions" (Conchar, Zinkhan, Peters, & Olavarrieta, 2004, p. 422). Selection of the appropriate risk dimensions in any given context is a key step to risk. As earlier discussed, Cunningham, Young, and Lee (2004) discovered both a literature stream and confirmed in their field study a relationship between perceived risk and the air traveler's evaluation of airline service quality in the

context of selecting an airline. Past research suggests that consumers generally feel a higher level of risk when purchasing a service than when buying a manufactured product, because services are basically intangible and difficult to test before purchase (Zeithaml, 1988). Sweeney, Soutar, and Johnson (1999) revealed that perceived risk plays a mediating role in the perceived service quality and value for money relationship in a retail setting. Because most of the travel experiences rely on intangible services, it is expected that travelers' perceptions of risk are likely to be high, and such perceptions would influence their evaluations of the travel services (Moutinho, 1987; Roehl & Fesenmaier, 1992; Sonmez & Graefe, 1998).

In terms of perceived risk, Jacoby and Kaplan (1972) suggested five different kinds of losses: financial, performance, physical, psychological, and social losses. Roselius (1971) considered an additional dimension of time or convenience risk. Berkman, Lindquist, and Sirgy (1996) listed linked decision risk as an additional dimension of risk. As described by Dolnicar (2005), Roehl and Fesenmaier (1992) extended Jacoby and Kaplan's (1972) efforts by researching the market segmentation risk categories of: equipment, financial, physical, psychological, satisfaction, social, and time. Dolnicar found that Sonmez and Graefe (1998) added the elements of terrorism, health and political instability to the dimensions used by Roehl and Fesenmaier to discover an important link. The link was "between the intention to travel to certain destinations … and past travel behaviour, perceived risks and perceived safety where the dependent variable is a behavioural intention measure" (Dolnicar, p. 198)

From the earlier discussion of the individual risk profile, it is clear the literature supports the key role of the individual's risk profile in perceiving risk (Cox, 1967;

Conchar, Zinkhan, Peters, & Olavarrieta, 2004). However, due to the construct complexity and operationalization issues relative to the role of the individual risk profile, the present research for reasons of scope will not directly address the individual risk profile, hoping to save it for future research. The present research will focus on the dimension of perceived risk.

Marketing Perspective of Risk and Risk Management

Notwithstanding the diversity of definitions of risk, there are generally only two accepted approaches to measuring perceived risk. One approach asks research respondents to directly gauge the degree of risk of a statement or situation relative to a product without distinguishing probabilities from consequences (Jacoby & Kaplan, 1972; Cunningham, 1967; and Bearden & Shimp, 1982). The opposite approach measures perceived risk that distinguishes probabilities from consequences: the likelihood of loss and the importance of what is lost are (Peter & Ryan, 1976).

Perceived Risk and Customer Satisfaction

According to Conchar, Zinkhan, Peters, and Olavarrieta (2004), inherent risk represents the unknown true probability of being less than satisfied with the choice outcome (or of experiencing loss or regret). The risk literature thus meets the satisfaction literature relative to expectations and perceptions of satisfaction. Through risk processing, consumers assess the level of perceived risk as the subjectively assessed likelihood that they will not satisfy their decision goal, using partial information about inherent risk and other influences (p. 429).

Insofar as service quality is being used to gauge consumer satisfaction in the present research, the link between perceived risk and service quality has been established.

Summary

The literature on airline service quality and passenger satisfaction is reviewed in this chapter. It includes the airline service environment, the relationship between loyalty and customer satisfaction, service quality, expectations and perceptions of service quality, air passenger satisfaction and service quality measurement, and constructs of perceived risk. The present study contributed to extant research by providing empirical evidence that helps airline management adjust the airlines' services to the needs and wants of the commercial air traveling public. The literature review provides the theoretical foundation for the field study, whose objective is to help airline management better understand how the services provided by their respective airlines match air travelers' expectations in this era of "unforeseen, sudden negative events" (Cunningham, Young, & Lee, 2004, p.11). Chapter Three next discusses the present research methodology.

CHAPTER 3. METHODOLOGY

Theoretical Framework

A review of the literature related to perceived risk and airline service quality showed that little research has been conducted on that topic. Additionally, what research there is did not cover the interrelationship among the constructs of perceived risk, service quality and passenger segments. This chapter discusses the theoretical framework, research design and methodology used in this study.

The theories that support this present study are introduced in this chapter. First, a theoretical model is presented. Next, the major constructs of the theoretical model are described. Thereafter, the theoretical linkages among the constructs are discussed. Finally, the conceptual model which details the interrelationships among the variables is presented. Simply put, the present model posits that consumers are influenced by their perception of risk factors in their evaluation of quality. This model is based in consumer behavior literature, comprising the major components of perceived risk, service quality, and consumer satisfaction. Inasmuch as this present study focuses on the airline industry, the key constructs are perceived risk, passenger segmentation, and service quality perceptions. The model relies significantly on the concept of perception (Woodruff, Cadotte, & Jenkins (1983, August). As Alotaibi (1992) noted, “the reality of the product attributes as perceived by a passenger can generate positive or negative feeling or emotional stress” (p.102).

Major Constructs

While based in consumer behavior research, risk research has become widespread over the years in a variety of disciplines. Regardless of discipline, the essence of risk is the need for the risk taker to make choices amidst uncertainty (Conchar, Zinkhan, Peters, & Olavarrieta, 2004). To the extent that consumers are taking risks when they choose from a set of alternatives; risk concepts govern consumer decision making processes (Grewal, Gotlieb, & Marmorstein, 1994; Mitchell, 1999).

It has been established for some time that a key marketing strategy is segmentation marketing (Boone & Kurtz, 2008; Kotler, 2004; Webster, 1989). Segmentation marketing has been effective in a variety of industries, including the commercial air travel sector (Gourdin & Kloppenborg, 1991). In commercial air travel, important segmentation variables have included class of service, purpose of the trip, and ultimate destination, among others (Etherington & Var, 1984; Alotaibi, 1992). In the present study, for reasons of scope, only the purpose of the trip was used. The travel purpose in this study constitutes the model's independent variable, and includes measures for travel purpose.

Service Quality

As discussed in Chapter Two, service quality is defined as the degree to which customer expectations and perceived service levels match. Since measurement requires operationalization of the subject variables, the research measured the gap between expectations and perceptions relative to the associated dimensions of reliability, assurance, tangibles, responsiveness, and empathy (Parasuraman et al., 1988).

The more expectations and perceived service qualities blend without a gap, the more satisfied the airline passengers are. In this framework, perception is operationalized. Perception is the reality since it is what the airline passenger wants from the service (Parasuraman, Zeithaml, & Berry, 1988). This is similar to the experience-based norms that are considered to be the individual's standard (Woodruff, Cadotte, & Jenkins, 1983). In assessing airline service quality, the individual's experience-based norm is a personal standard whereby the service quality of an airline can be assessed positively or negatively. The norm is the individual's belief in a certain level of service (Parasuraman et al., 1988).

Although not a focus of this present study, passenger satisfaction is a related factor. Woodruff, Cadotte, & Jenkins (1983) posit that passenger satisfaction relates to the passenger's affective state resulting from the last travel experience on an air carrier. Johnson and Lyth (1991) maintain that this is not a uni-variate experience, but a multitude of factors that result in the emotion of satisfaction.

Perceived Risk

In the literature review, it was shown that perceived risk influences decisions making on many levels (Conchar, Zinkhan, Peters, and Olavarrieta (2004). Given the complexity of the more recent constructs, the concept of risk can best be highlighted by analyzing the nature of perceived risk (Cunningham et al., 2004). This correlates well with Parasuraman, Zeithaml, and Berry (1985), who argue that expected service level is a function of many things including but not limited to previous experience or word of mouth. Perceived risk is seen to influence the consumer decision process behaviorally.

Previous studies segment air passengers and attempt to assess their expectations and perceptions about airline service quality. Etherington and Var (1984) examine air

passenger choices as having different criteria, depending on the purpose of the flight. They distinguish business travel from non-business travel. In evaluating the criteria for selecting business and non-business flights, their data show that passengers rank selection criteria differently if they are traveling for business reasons than if they are traveling for personal reasons.

Passenger Satisfaction

The literature in the airlines services showed passenger dissatisfaction is growing, especially among business travelers (Hunter, 2006). There has been insufficient study of the satisfaction / dissatisfaction paradigm of passengers traveling on different airline classes or for various reasons. It behooves airlines to know the degree to which their services are meeting their passengers' expectations in order to improve their services and enhance their passengers' satisfaction. The study of service quality is important for that reason.

Little research was found that focused on evaluating the relationship of the five dimensions of service quality (reliability, assurance, tangibles, responsiveness and empathy) to airline passenger satisfaction (Alotaibi, 1992). However, the studies discussed in the previous chapter suggest that the role of expectations was not limited to a prediction or belief of product or service performance. Woodruff, Cadotte, and Jenkins (1983) view standards for expectations in the form of norms and a similar view of expectations was used in this research. Woodruff et al. (1983) believe satisfaction results when perceptions of product or service performance match the norm and increase when perceptions exceed the norm. Therefore, expectations in this research are seen as

experience-based norms. As such, it is expected that when perceptions of service quality increased, so would passenger satisfaction.

Conceptual Model of Interrelationships: Perceived Risk, Air Travel Purpose, Service Quality

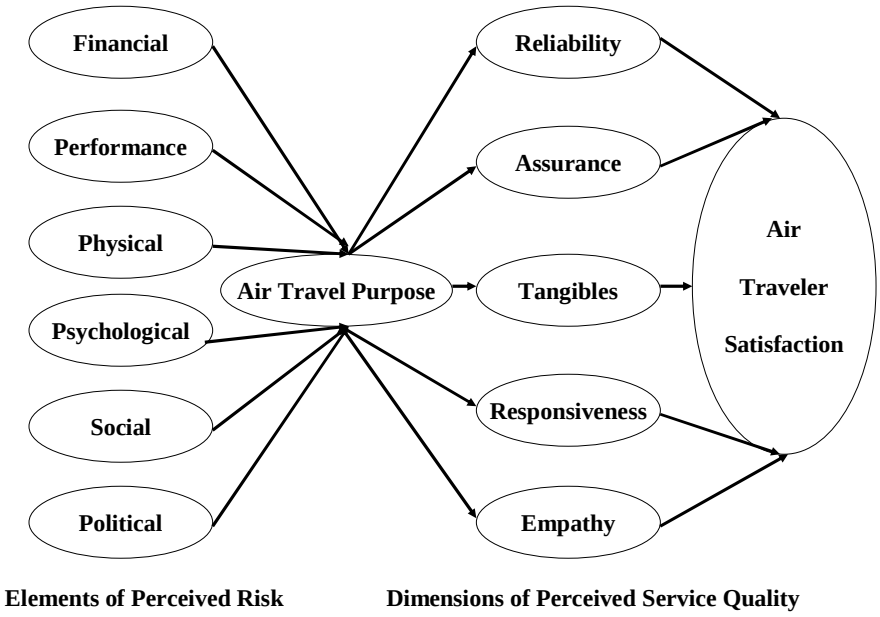

Figure 2. Conceptual framework refined to illustrate the interrelationships between Risk, Travel Purpose, and SERVQUAL, ultimately expressed as Satisfaction.

As discussed at length in Chapter Two, service quality is operationalized using the time-honored SERVQUAL instrument developed by Parasuraman, et al. (1985, 1988, 1991). Equally time-honored are the five dimensions of reliability, assurance, tangibility, responsiveness, and empathy. These five dimensions constitute the sub-variables which support the combined variable, or construct, of service quality (Parasuraman et al.). Consistent with the conceptual framework (supra), the following research and investigative questions were developed (Cooper & Schindler, 2003).

Research Question

Is there a correlation between the constructs of perceived risk and airline service quality for a random sample of airline passengers traveling on commercial airlines in the United States?

Investigative questions

1. Do business airline travelers and non-business airline travelers differ in their evaluation of perceived risk?

2. Do business airline travelers and non-business airline travelers differ in their evaluation of airline service quality?

3. Is there a correlation between the construct of perceived risk and the dimensions of service quality for airline traveler segments?

As the literature review revealed, relationships are hypothesized to exist among risk, airline passenger purpose of travel, and airline service quality (Alotaibi, 1992). Consequently, the present study empirically examined the following hypotheses:

Research hypotheses

Ho1. There is no statistical difference among the three types of airline travelers relative to perceived risk.

Ha1. There is a statistical difference among the three types of airline travelers relative to perceived risk.

Ho2. There is no statistical difference between the airline traveler's purpose of travel and the constructs of airline service quality as defined and measured in SERVQUAL.

Ha2. There is a statistical difference between the airline traveler's purpose of travel and the constructs of airline service quality as defined and measured in SERVQUAL.

H3o. There is no linear relationship between the construct of perceived risk and the dimensions of airline service quality as defined and measured in SERVQUAL.

H3a. There is a linear relationship between the construct of perceived risk and the dimensions of airline service quality as defined and measured in SERVQUAL.

H3.1o. There is no linear relationship between the construct of perceived risk and the reliability dimension of airline service quality as defined and measured in SERVQUAL.

H3.1a. There is a linear relationship between the construct of perceived risk and the reliability dimension of airline service quality.

H3.2o. There is no linear relationship between the construct of perceived risk and the assurance dimension of airline service quality.

H3.2a. There is a linear relationship between the construct of perceived risk and the assurance dimension of airline service quality.

H3.3o. There is no linear relationship between the construct of perceived risk and the tangibles dimension of airline service quality.

H3.3a. There is a linear relationship between the construct of perceived risk and the tangibles dimension of airline service quality.

H3.4o. There is no linear relationship between the construct of perceived risk and the responsiveness dimension of airline service quality.

H3.4a. There is a linear relationship between the construct of perceived risk and the responsiveness dimension of airline service quality.

H3.5o. There is no linear relationship between the construct of perceived risk and the empathy dimension of airline service quality.

H3.5a. There is a linear relationship between the construct of perceived risk and the empathy dimension of airline service quality.

The present study considered the influence of perceived risk on service quality in commercial air travel in the U.S. While service quality leads to behavioral or loyalty intentions, the latter would be investigated in future research. For reasons of scope, the present study only explored any statistical differences that might exist between business and non-business travel as they relate to perceived risk.

Research Design

The present research empirically examined via a survey the degree to which perceived risk influences service quality in commercial air travel in the U.S. The research approach was to quantitatively analyze the gap between expectations and perceptions of service quality, focusing on disconfirmation conceptualization from a perceived risk perspective. Using the time-honored survey SERVQUAL scale, the present study statistically analyzed the findings from a random sample of airline passengers who travel by commercial air in the U.S. for both business and non-business purposes.

Prior research studies have posited that disconfirmation measures are more effective than performance-based measures, in terms of both yielding information and

providing diagnostic usefulness (Parasuraman, Zeithaml, & Berry (1994). For that reason, the present research strategy used a cross-sectional survey design to evaluate service expectations and perceptions in commercial air travel from the air traveler's perspective. Specifically, this research examined whether perceived risk influences the service expectation and perception gaps that may exist for both business and non-business air travelers relative to their perceived service quality. The field survey recruited potential respondents selected at random. Details are discussed in the Data Collection section which follows. Potential respondents were invited to click on a link connecting them to the online survey.

More important than with providers of tangible goods, service providers like the airlines must have effective strategies in place to monitor their service quality, and to do so, the airlines must thoroughly understand their customers' wants, needs, and expectations (Parasuraman, Zeithaml, & Berry, 1985, 1991a, 1994). That way, airlines will be able to improve their strategies if needed. The present study design used service quality as a measure of customer satisfaction. This approach is consistent with prior research (Widzer, 2001; Cunningham et al., 2004; Alotaibi, 1992; Parasuraman et al., 1985, 1988, 1991).

It is posited that perceived risk influences passengers' perception of service quality for a random sample of airline passengers traveling on commercial air in the U.S. (Cunningham et al., 2004). Prior research has also found that perceived airline service quality greatly influences passenger satisfaction (Alotaibi, 1992). To provide focus and limit the research scope, the present study only explored the correlation of perceived risk to service quality. The perceived risk studied in this present research is

defined as comprising the following six elements: financial, performance, physical, psychological, social, and political (Cunningham et al., 2004; Dolnicar, 2005). Perceived risk was studied by examining both the traveler's perception of the importance of risk and the likelihood of that risk occurring in the ensuing 12 months. The well-established perceived airline service quality variables or dimensions include service quality reliability, assurance, tangibles, responsiveness, and empathy (Parasuraman et al., 1985, 1988, 1991).

In this construct, perceived service quality influences passenger satisfaction, which in turn impacts behavioral intentions or the loyalty of the consumer. For reasons of focus once again, the loyalty component while important would be investigated vigorously in subsequent research. The present model is rooted in the service quality, consumer satisfaction / loyalty, and perceived risk literature. In an effort toward precision, the present research investigated the interrelationship only between perceived risk and the dimensions of perceived service quality identified in the academic literature (Conchar et al., 2004; Sonmez & Graefe, 1998; Roehl & Fesenmaier, 1992; Dolnicar, 2005; Cunningham et al., 2004).

Assumptions

There are several assumptions, including but not limited to the following (a) The instruments used in the research appropriately measured the constructs of interest, (b) The participants were knowledgeable and provide accurate and honest responses, and (c) The instruments would be sufficiently clear to the respondents. It is nevertheless recalled that the present SERVQUAL instruments have been established through 20 years of testing (Parasuraman et al., 1985, 1988, 1991). The instruments used to measure perceived

risk while original nevertheless have been found to be effective in prior research (Cunningham et al., 2004; Dolnicar, 2005).

Limitations

The quantitative research methodology is effective by virtue of an established protocol. The online survey methodology has many advantages such as speed of response and data capture once the survey has been pre-tested prior to its official launch online, notwithstanding certain inherent limitations (Cooper & Schindler, 2003). Several potential limitations existed in the present study. The survey was deployed online. This media resulted in fewer usable responses collected from some business travelers who might have found technology to be a challenge. The integrity of the online survey mechanism could have been compromised by tampering by hackers, even though there was no evidence of hacking (Khadem, 2007). The study did yield fewer numbers of research participants than the 384 or more hoped for (Dillman, 2000). The online survey service selected for the present research did have counter-measures in place to neutralize all potential issues.

Efficacy of the Pre-test

In light of the excellent results achieved by pre-testing the 30 subjects, a pilot study was deemed unnecessary. First, those chosen for the review panel are airline passengers themselves with four members of the panel "multi-million milers". Second, four of the 30 respondents who participated in the pre-test traveled for both business and non-business purposes. Six traveled for business purposes. Non-business travelers numbered 18. Two respondents did not provide an answer regarding travel purpose. Insofar as the pre-test survey results were excellent, a pilot study was deemed to be

redundant. Although additional techniques were determined to be necessary during the course of the research, several key analytical techniques were deployed, including descriptive statistics, regression analysis, confirmatory factor analysis, reliability analysis, T-tests, ANOVA tests, and positive linear relationship analyses. During analysis, if at any time the initially selected parametric tests failed, non-parametric or other tests were conducted as necessary.

Descriptive statistics are standard descriptive statistics like means, standard deviations and variances, and were reported for all variables to analyze the data set. Frequency and range distributions were relied on to assess the accuracy of data entry for the hypotheses. Regression analysis would be effective in determining the importance of weights indirectly via beta coefficients and by the use of un-weighted or "raw" scores as independent variables, among them perceived risk, business traveler, and non-business traveler. The five dimensions of service quality were correlated with the six elements of perceived risk.

Sample

Airline travelers who patronized airlines conducting business in the United States constituted the present research population. Potential participants were selected at random. The participants were acquired from a commercially purchased list of air travelers affiliated with a cross-section of industry in the United States. The pre-selected industries were identified through a professional online research administrative and collection service. Potential respondents were invited via email to click on a link connecting them to the online survey. The field research instrumentation was validated

by pre-testing (Alotaibi, 1992; Robson, 2002; Creswell, 2003; McLaughlin, 1994; Leedy & Ormrod, 2005). The official survey was administered online. The survey instruments were linked to the survey web-site so that interested parties would find it convenient to respond online (Cooper & Schindler, 2003). The randomly selected population of travelers was invited to participate in the survey. The online survey was made available for a fixed period of 30 days during December 2008. Respondents only had access to the survey once.

In two recent studies similar to the present research, the researchers received responses from the desired number of respondents. Using SERVQUAL methodology, Cunningham, Young, and Lee (2004) investigated the effects of 9/11 on airline travel, using a sample of 105 professionals. For her research on passenger "Air Rage", Hunter (2006) surveyed 244 respondents at random across four airports: ORD, ATL, DCA, and LGA. Hunter did not use SERVQUAL, but relied on her airline experience to craft her own 55-question survey. Response rates for surveys involving air travel have been as high as 24.5% (Alotaibi, 1992). The statistical literature supports the following example: given 1,000,000 travelers who will fly in a given year, the researcher desiring a 95% confidence interval and a 5% sampling error should seek usable responses from 384 individuals (Dillman, 2000). Consistent with the prior research and the academic literature, the present research expected responses from between 200 and 400 individuals. Based on expectations of the 24.5% rate, the invitation was sent by email to 1000 individuals. The expected response rate was conservative, and complied with the statistical requirements that ensure research response validity (Robson, 2002).

Potential respondents were heterogeneous with respect to age, gender, race, ethnic background, education, and travel history. The survey instruments were designed to identify from the responses those respondents who traveled on U.S. commercial airlines in the immediate past 12 months. The present research sought to identify those respondents who took a minimum of three round trips by commercial air in the U.S. during the 12 months before taking the present survey. Their air travel would have commenced and terminated in the U.S. Analysis of the respondents' answers would segment them into business travelers and non-business travelers. Segmentation by purpose of travel has been used in research of this kind over the years (Alotaibi, 1992; Widzer, 2001). The present field research evaluated the role of perceived risk in service quality as perceived by travelers who travel for business, compared to those who travel mostly for non-business reasons.

Instrumentation / Measures

The survey instruments were the time-honored, validated instruments used to measure service quality, SERVQUAL & SERVPERF (Parasuraman, Zeithaml, & Berry, 1985; Cronin & Taylor, 1992), customer satisfaction criteria unique to the airline industry (Alotaibi, 1992; Cunningham, Young, & Lee, 2004; Oyewole, Sankaran, & Choudhury, 2007), and perceived risk as found in the literature (Bauer, 1960; Peter & Tarpey, 1975; Peter and Ryan, 1976; Dowling & Staelin, 1994; Dolnicar, 2005). The survey instruments used in the field research were clustered in logical and related categories, and the scales used were 7-point LIKERT-based. Most important, the instrumentation used by is considered to be the reliable instrument of choice to measure expectations and

perceptions of service quality (Ham, 2003). The instrumentation comprised the following sections: service quality survey, satisfaction rating, survey of perceived risk, and basic demographic data.

SERVQUAL was used to measure quality, taking the difference between the Likert scale responses to statements about air travelers' service quality expectations and their perceptions of service quality in general. This measurement was correlated with the air travelers' basic data, such as the number of years the travelers have flown on the airline of their choice, the frequency of their air travel, and their membership in loyalty clubs. SERVQUAL has been used by researchers investigating service quality in a variety of industries including air travel (Alotaibi, 1992; Ham, 2003, Sang, 2008). Although various determinants of service quality have been used to compare customer expectations with performance, or perceived service quality, the SERVQUAL instrument was notable in effectively measuring expectations and perceived service quality (Parasuraman et al., 1985, 1991, & 1994; Zeithaml et al., 1993; McLaughlin, 1994).

The present research used SERVQUAL displayed in a two-column, 22-item format that measures air traveler expectations and perceptions of perceived service quality of air travelers. Additionally, it also measured their satisfaction level. In this manner, the respondent would not have to spend unnecessary time to first respond to the 22 item expectations section, and return to another part of the survey to respond to the same 22 items, but from a performance perspective (Cunningham et al., 2004). The SERVQUAL instrument was buttressed with industry based measures as recommended by Parasuraman et al. to reinforce its effectiveness in the air travel industry. The use of the two column format is consistent with prior research (Ham, 2003). Responding to

detractors, the creators of the instrument, Parasuraman et al., encouraged the use of industry-based customization to enhance the effectiveness of their instrument (1988).

SERVQUAL as defined by Parasuraman et al. (1988) served as the key conceptual foundation for the scale used to measure expectations and perceptions in this research. In the first stage of scale development, the original SERVQUAL instrument was made consistent with the current air travel industry, enabled to assess the overall performance of commercial air in the United States. The unmodified SERVQUAL instrument of 22 items and the other related scales, totaling approximately 40 items, were presented to the respondents in three main sections.

Part 1.A, 1.B, and 1.C comprise the unmodified SERVQUAL instrument of 22 items and statements which are industry-based. They are used to discover the air traveler's expectation and perceived levels of air travel service quality. For reasons of efficiency, Part 1.A of the SERVQUAL measurement was displayed in a two-column format, and listed the 22 statements developed from their five major dimensions of service quality (Parasuraman et al.) The five dimensions include reliability (statements 1-5), responsiveness (statement 6-9), assurance (statements 10-13), empathy (statements 14-18), and tangibles (statements 19-22). Each statement is designed to generate separate ratings responses based on expectation and perceived service quality scales. Part 1.B was also designed to elicit two sets of ratings, expectations and performance, from one set of SERVQUAL inspired, industry-based statements of categories like airline image and ticketing and baggage handling (Alotaibi, 1992; Cunningham et al., 2004). Part I.C measured the airline traveler's satisfaction ratings based on the service quality experienced. The respondents were asked to respond to

each statement on a seven-point scale that ranges from Extremely Unlikely (1) to Extremely Likely (7). No labels were used for points 2 through 6. The first question measured how the airline traveler's experience with XYZ Airlines compared with that of the competition. The second question measured whether XYZ Airlines' service quality was high overall. The third question measured whether the respondent would encourage friends and relatives to do business with XYZ airline. The fourth question asked whether XYZ Airlines was the respondent's first choice among airlines offering flights to the travel destination. The fifth question asked whether the respondent was satisfied with XYZ Airlines.

Part II sought to measure the airline travelers' perceptions of risk in air travel, specifically the risk factors important to the respondents relative to air travel, and their assessment of the likelihood of occurrence of the same risk factors (Bauer, 1960; Peter & Tarpey, 1975; Dowling & Staelin, 1994; Dolnicar, 2005). This section is aimed at uncovering the air traveler's perception of events like 9/11 as a potential, future travel hazard. The impact of a future occurrence of an event of the magnitude of 9/11 is euphemistically dubbed "sudden, environmental impacts" (Cunningham et al., 2004). The objective of this part was to determine the predictability of the air traveler's behavior were an event of that magnitude to recur. In this context, 9/11 symbolizes a potential future risk of air travel, which is the subject of the present research on perceived risk. The first question explored the air traveler's perception of overall risk as well as risk in six categories: financial, performance, physical, psychological, political, and social (Cunningham et al., 2004; Dolnicar, 2005). The second question measured the air traveler's perceived risk by soliciting from the air traveler the kind of risk that would

result in a decision to postpone or cancel air travel, and more importantly, the air traveler's assessment of the probability of the occurrence of such a phenomenon (Dolnicar, 2005).

Part III sought basic data such as demographic information and air travel experience (major U.S. global airline, 2007; Alotaibi, 1992). Air traveler data pertaining to passenger purpose of travel was used for segmentation. For example, business versus non-business travel versus equal business and non-business travel, would be collected by analysis of this section. The collected information was analyzed through descriptive statistics to determine the existence of patterns or traits among the study respondents (Kotler, 2004). By understanding the general demographic characteristics and air travel experience of the respondents, along with an understanding of the influence of perceived risk on passenger segments like business and non-business travelers, airlines can strategize more effectively to satisfy those customer segments during future travel. In the present study, the focus was limited to segmenting travelers as either business or non--business travelers.

SERVQUAL

Part IA of the survey contains 22 two-part SERVQUAL questions. Each SERVQUAL question requests a participant's evaluation of the expected service level and the received service level and provides the service quality independent variable. The SERVQUAL questions require customer ratings based on a 7-point Likert scale with 1 expressing the lowest possible score and 7 the highest.

An example of a SERVQUAL question is:

Criterion	The service level I expect							The service level I received						
	Low						High	Low						High
Prompt service to passengers	1	2	3	4	5	6	7	1	2	3	4	5	6	7

The SERVQUAL questions provided the basis for calculating service quality. The service quality level for each of the 22 SERVQUAL measurables shall be the ratio between the received service and the expected service. For instance, if on a question the customer received a service level of 7 and expected a 5 service level then their service quality for that question would be 7/5 or 1.4.

In order to evaluate the service quality construct a factor analysis was conducted using calculated service quality for each customer's responses to the 22 associated questions. Each of the 22 responses constituted a variable. The Kaiser-Meyer-Olkin (KMO) value for the construct's elements determines whether a variable will remain included in further calculations. For example, using standard variable reduction techniques the lower component values associated with the variables in the anti-image matrix were removed to achieve the highest KMO value or the highest question validity. Removed variables were excluded from further construct calculation. The construct's value consists of the average of the remaining variables. However, if the factor analysis retained three variables and they summed to 5 then the service quality construct's value for that respondent would be 5/3 or 1.66.

Part I.B of the survey contains 29 SERVQUAL-related industry-based two part airline customer satisfaction questions. Each airline customer satisfaction question

requests from the respondent an evaluation of the expected service level and the received service level and provides the service quality independent variable. Similar to the questions in Part I.A, the questions require customer ratings based on a seven point Likert scale with 1 expressing the lowest possible score and 7 the highest.

An example of an airline customer satisfaction question is:

Criterion	The service level I expect							The service level I received						
	Low						High	Low						High
General reputation	1	2	3	4	5	6	7	1	2	3	4	5	6	7

Treatment and determination of the airline customer satisfaction individual values and construct value for each respondent follows the same procedures outlined for the SERVQUAL construct. Airline customer satisfaction for each question is the ratio between received and expected service level. For instance, if on a question the customer received a service level of 7 and expected a 5 service level then their airline customer satisfaction for that question would be 7/5 or 1.4. The airline customer satisfaction construct's value for a particular participant would be the average of the post factor reduction variable values.

Part I.C of the survey contains 5 SERVQUAL-related satisfaction ratings. Each airline customer satisfaction question requests a participant's evaluation of the service level experienced and provides the service quality independent variable. Similarly to the questions in Part I.A and I.B, these questions also require customer ratings based on a seven point Likert scale with 1 expressing the lowest possible score and 7 the highest.

An example of an airline passenger satisfaction rating question is:

Criterion	Strongly Disagree						Strongly Agree
	1	2	3	4	5	6	7
Overall, I am satisfied with this airline.							

Treatment and determination of the airline customer satisfaction individual values and construct value for each respondent follows the same procedures outlined for the SERVQUAL construct. Airline customer satisfaction for each question is the ratio between received and expected service level. As with Part 1.A and 1.B, if on a question the customer received a service level of 7 and expected a 5 service level then their airline customer satisfaction for that question would be 7/5 or 1.4. The airline customer satisfaction construct's value for a particular participant would be the average of the post factor reduction variable values.

Perceived risk

The risk construct was limited to the perceived risk dimension; the components selected for the present research include: financial risk, performance risk, physical risk, psychological risk, social risk, and political risk, and are consistent with prior research (Jacoby & Kaplan, 1972; Cunningham et al., 2004, Dolnicar, 2005). In Cunningham et al.'s study, the researchers used one-way ANOVA statistical analysis to derive the relevant F-value and significance. The present study likewise used ANOVA analysis, among other methodologies specifically MANOVA, where appropriate. The present assessment favored the Peter and Ryan approach, measurement of perceived risk that

distinguishes probabilities from consequences, i.e. the likelihood of loss and the importance of what is lost (Peter & Ryan, 1976). As a result, the instrument was designed to measure a gap, between the respondent's perception of the importance of certain risks, and the probability of the risk's occurrence in the foreseeable future. The expectation was that the variance measures would better correlate to the service quality measure than previous research (Cunningham et al., 2004).

Researchers have often relied on criteria established by Churchill's (1979) Journal of Marketing Research article for developing constructs. Churchill's eight-step process includes: specifying the domain, generating sample items, collecting data, purifying the instrument, collecting additional data, determining reliability, assessing validity, and developing norms. These criteria were used to define the measure and create the perceived risk component of the survey instrument. The following section describes the steps taken to insure a valid and reliably perceived risk instrument.

As described in previous sections, perceived risk has been studied for some 50 years by academics in a variety of streams, including the marketing literature (Conchar et al., 2004). In the present study, the focus was on the nature of risk perceived by air travelers. From the literature review, 14 key elements were identified as the ones most often used in various combinations in consumer research studies. One study used the elements of financial, performance, physical, psychological, and social (Cunningham et al., 2004). Another study selected the elements of political, planning, health, environmental, and property (Dolnicar, 2005). Roehl and Fesenmaier (1992) conducted their research using the elements of financial, physical, psychological, social, equipment, and satisfaction. Still other researchers selected the elements of financial, physical,

psychological, social, equipment, satisfaction, time, political instability, health, and terrorism (Sonmez & Graefe, 1998). The 14 elements of risk were arranged in questions similar to the following, "What level of political risk is involved in choosing an airline?" (Cunningham et al., 2004, p. 16). The design and wording of the statements were based on the findings of previous researchers (Cunningham et al., 2002, 2004, Dolnicar, 2005).

Once again, as discussed earlier in the literature review, researchers have applied two distinct risk measurement approaches; one approach seeks participants' direct assessment of "the riskiness of a given statement or situation presented in an item without separating probabilities and consequences", while the other approach "measures participants' assessments of risk to include "the distinction between probabilities and consequences", seeking assessments of the "probabilities and importance of losses" (Conchar et al., 2004, p. 419). Insofar as the present research favors the Peter and Ryan (1976) methodology, a corollary set of questions was added. For instance, along with "What level of political risk is involved in choosing an airline?" a corollary question was provided, e.g. "What is the likely occurrence of political risk for air travelers in the next twelve months?"

This list of questions encompassing 14 elements was then Field tested for applicability by a focus group of six seasoned air travelers. The group comprising a senior military official, Ports Authority executive, Airline Air Traffic Controller, Nurse, Health Science professional, and Ethics Center director was convened to evaluate the 14 elements from the perspective of an air traveler. The questions were refined following suggestions by the focus group, which underwent the Delphi technique of group evaluation. The 14 risk elements were subsequently consolidated into six, and further

pre-tested by another group of 30 professionals from various business sectors, resulting in the final pre-test survey as reported in Appendix B, Appendix C, and Appendix D.

The six elements of perceived risk used in this present study are financial risk defined as the risk of spending one's money unwisely by choosing the wrong airline, performance risk described as the risk of receiving bad airline services, physical risk or the risk of injury or loss of life, psychological risk defined as the risk of being disappointed by airline service, social risk described as the risk of embarrassment in front of friends and/or family, and political risk or the risk of being subjected to sudden negative events such as those arising from terrorism.

While some researchers were interested only in the "level of risk in choosing an airline" (Cunningham et al., p. 16), the present research sought a response of both the importance of the perceived risk dimension and the probability of the occurrence of that same risk dimension (Peter & Ryan, 1976; Dolnicar, 2005).

Factor analysis and reliability analysis were part of the instrument development pre-test as displayed in Appendix C, Tables C1 through C18. A Cronbach's alpha (Peter, 1979) was computed on the survey instrument to test for reliability. From the pre-test which involved 30 participants, a Cronbach's alpha or reliability coefficient as displayed in Appendix B, Table B5 of 0.949 was obtained. Churchill (1979) suggested that a reliability coefficient of 0.80 or greater is considered acceptable. Thus, according to the pre-test, reliability was found to be excellent. As displayed in Table B2 and Table B3 of Appendix B, there is only one factor or one dimension for the risk construct, which simplifies the analytical process. This one dimension was used in analyzing the final data. For the Likely Occurrence data, the questions were force fit into one

dimension. Because there is only one factor for the risk dimension, it was possible to use ratio analysis. Thus, the Importance of Risk and Likelihood of Occurrence components of the perceived risk dimension will be compared with the five SERVQUAL dimensions, having passed the validity tests as demonstrated by the results in Appendix C, Tables C2, C5, C8, C11, C14, and C17. While accomplishment of Churchill's first four steps is considered a minimum in the criterion development process (McLaughlin, 1994), seven steps were carried out as a result of the pre-test, with step eight addressed during the formal field survey.

Part II of the survey consists of six two-part perceived risk questions. An example of a perceived risk question is:

Criterion	Importance of Risk Factor							Likely occurrence of Risk Factor						
	Low					High		Low					High	
Financial risk from "sudden negative events"	1	2	3	4	5	6	7	1	2	3	4	5	6	7

In similar fashion to the SERVQUAL and airline customer satisfaction, perceived risk for each question is defined as the ratio between likely occurrence and importance. Also similar to the SERVQUAL and airline customer satisfaction, perceived risk elements and constructs followed the same factor reduction, element calculation, and construct value by the averaging process. The average of each respondent's perceived risk elements equals the value of the perceived risk construct for that participant.

Both the SERVQUAL and Perceived Risk components were pre-tested on 30 subjects. Factor Analysis and validity of Perceived Risk is found in Appendix B, and validity analysis of the pre-test results is found in Appendix C. Pre-tests used the present instrument, and preliminary statistical analysis was performed on the collected data.

Gap analysis was used relative to Hypothesis 1 that examined Perceived Risk and Hypothesis 2 that pertained to Airline Service Quality. The SERVQUAL-based identifiers and variables originated with the creators of SERVQUAL, and are consistent with those used in previous research (Alotaibi, 1992, p.121). For Hypothesis 1, the following example may be helpful: Finance Importance (FI) represents the importance of financial risk. Finance Occurrence (FO) represents the likelihood of occurrence of financial risk. Therefore, the value of Financial Risk (FV) is the importance of financial risk minus the likelihood of occurrence of financial risk: FV = FI - FO. Additionally, the sum of the variables associated with each pair comprises the value associated with that variable.

In Hypothesis 2, the sum of the variables associated with each pair comprises the value associated with that variable. For example, Expected Modern Plane (EMP) = Expectation for a modern airplane, and Perceived Modern Plane (PMP) is defined as the perception of a modern airplane. The perceived value of the Modern Plane (MPV) thus is MPV = EMP – PMP. However, MPV is also part of the Tangible construct. The value of the construct equals the average of its components. And, the value of the SERVQUAL super-construct equates to the average of its sub-constructs. All other super-constructs and sub-constructs are calculated in the same way. The evaluative process then used an ANOVA with linear contrast as explained in Norusis (2005). Incomplete data resulted in

accepting SPSS list-wise deletion of that variable for calculations. This is an acceptable SPSS technique (Norusis, 2005).

The following procedure was used in the pre-test to evaluate Hypothesis 3. A ratio analysis was performed. In other words, the variable associated with each pair comprises the value associated with that variable. For example, Expected Modern Plane (EMP) = Expectation for a modern airplane, and Perceived Modern Plane (PMP) is defined as the perception of a modern airplane. The perceived value (MPV) is thus 7*[(PMP) / (EMP)]. Thus each variable or construct is placed on a scale of 1 to 7 for performance according to its relative percentage of customer satisfaction. That was assumed to consist of the ratio between perceived service and expectations.

However, MPV is also part of the Tangible construct. The value of the construct equaled the average of its components. The value of the SERVQUAL super-construct is the average of its sub-constructs. All other super-constructs and sub-constructs are calculated in the same way. Thus to determine overall SERVQUAL, the average of all SERVQUAL constructs was used. To obtain overall risk, the average of the risk constructs was used. Then Pearson positive linear relationships analysis was performed showing SERVQUAL results to the average risk. To evaluate each business traveler type, similar averaging is filtered by type followed by positive linear relationship that is performed.

Data Collection

Airline travelers who patronize airlines conducting business in the United States constituted the present research population. A list was acquired from a commercial

source of air travelers affiliated with several sectors of U.S. industry - information technology, healthcare, defense, and manufacturing. Potential research survey respondents were contacted at random via email and asked whether they would agree to participate in an anonymous study concerning passenger attitudes toward airlines. As a precautionary measure, in the event insufficient numbers of responses materialized, there were follow-up emails.

Potential participants were advised that while the research was academic, the expectation was that the research findings would be useful to both airline management and air travelers in future travels. Potential respondents wishing to continue with the present research were asked to click the "Agree" button. Those who declined further participation would click on a "Do Not Agree" button and were thanked.

The respondents who continued were first presented with the service quality / satisfaction survey from Parts 1.A., 1.B, and 1.C. In Part II, the respondents were surveyed regarding their perceived risk perspectives. Lastly, the participants were invited to respond to Part III, which seeks air travel experience and demographic information.

The data collection approach was consistent with prior successful research (Widzer, 2001). The present survey instrument included completion guidelines. Respondents were asked to answer all questions, respondents were permitted to return to a previously presented section of the survey and change the previous answers, respondents were allowed an unlimited amount of time to respond to all five sections, and after completing all the survey questionnaires the respondents were given the opportunity to submit the survey, clear all answers and begin again, or clear all answers and quit the

survey without submitting any data. All collected data were downloaded from the survey web site into a secured, password-protected data file (Widzer, 2001).

Data Analysis

The analysis required evaluating relationships between the constructs of service quality, airline customer satisfaction, and perceived risk. Separate sections of the research survey determined each of these constructs. As noted earlier, the SERVQUAL-based identifiers and variables originated with the creators of SERVQUAL, and are consistent with those used in previous research (Alotaibi, 1992, p.121).

Passenger segmentation variables, business and non-business airline travelers, were measured as independent variables. The dimensions of service quality consisting of reliability, assurance, tangibles, responsiveness, and empathy were measured by means of the unmodified SERVQUAL instrument of 22 items. In order to assume a satisfactory degree of reliability, five items developed from the literature measured airline traveler satisfaction. This assumption has precedence (Alotaibi, 1992). Most important, each measure of the service quality constructs was computed as the variance between the two scores of expectation and perception. Following a long line of researchers who relied on SERVQUAL, for example, the measure of neat appearance of employees in the Tangibles (V Neat) construct would be the variance between the perception score for neat appearance of employees (P3) and the expectation score for neat appearance of employees (E3). V Neat = P3 – E3. Additionally, the reliability of each measure was assessed via Cronbach's alpha, which measures the internal consistency of a measure. As

Peter (1979) noted, a large alpha empirically suggests the measure is reliable and positively correlates with the construct of interest.

Validity and Reliability

SERVQUAL

Parasuraman et al.'s original SERVQUAL instrument is considered seminal (1985, 1988). It has been both widely used and comprehensively critiqued by scholars. Parasuraman et al. (1994) revised and refined the SERVQUAL measures several times, in the wake of much academic commentary over the years (e.g. Cronin & Taylor, 1992, 1994). Many researchers have studied and invoked SERVQUAL's framework and have assessed the scale's reliability and validity (Babakus & Boller, 1992; Carman, 1990; Cronin & Taylor, 1992; Webster, 1989; Teas, 1993; McLaughlin, 1994; Zeithaml, Berry, & Parasuraman, 1996).

According to Parasuraman et al. (1985, 1988, 1991), the SERVQUAL scale comprises five separate but correlated dimensions; consequently, there was an analysis of five factors for each factor analysis solution. According to Parasuraman et al. (1988), the reliability coefficients for the five dimensions of service quality ranged from 0.72 for tangibles and 0.86 for empathy with a total score of 0.92 reliability. Subsequent research by other academics according to Parasuraman, Zeithaml, and Berry (1991) found that SERVQUAL's reliability coefficients ranged from a weak 0.53 to an acceptable 0.93 reading. After review, Parasuraman, Zeithaml, and Berry (1994) acknowledged that the validity results of SERVQUAL's five dimensions were uneven or mixed. Nevertheless, the SERVQUAL's service quality scores, based on reliability, factor

and LISREL analyses, yielded positive internal consistency, which suggested high reliability coefficients.

Discriminant validity is important since several of the five dimensions are significantly correlated. Ham (2003) corroborated previous findings that an effective test of discriminant validity is to determine whether the covariance and two standard errors add to less than 1.00 (Dabholkar, Thorpe, & Rentz, 1996).

Notwithstanding the criticism, researchers continue to use SERVQUAL and its enhancements, and variants (Alotaibi, 1992; McLaughlin, 1994; Dabholkar, Thorpe, & Rentz, 1996; Ham, 2003). In light of the holistic value of SERVQUAL (McLaughlin, 1994) and its enhancements and variants, and its continued application by researchers, the present study relied on the original SERVQUAL instrument.

Perceived Risk

It was discussed supra that perceived risk was found to be uni-dimensional, even though it comprises six components as defined in this study. Only two questions were used: the importance of the risk factor and the likely occurrence of the risk factor. The validity test was run, with the Bartlett KMO involving six sequences financial risk, performance risk, physical risk, psychological risk, social risk, and political risk. The Kaiser – Meyer – Olkin (KMO), as indicated in Appendix C, equaled 0.50. The validity of the perceived risk was ultimately established by the expert panel discussed above.

Ethical Considerations

Since the present research was conducted in compliance with the ethical guidelines of Capella University as outlined in the Institutional Review Board (IRB), the participants were exposed to minimal risk. Moreover, the participants were advised throughout the survey that they could withdraw from the survey at any time, and exit at any time, without having to complete the survey if desired. Their participation was strictly voluntary. No personal information would be disclosed, and the data collected would be made known only to the researcher.

Summary

The overall quantitative approach, rationale, research and sampling designs, methodological procedures, and data collection of the present field study were presented in Chapter Three. While the SERVQUAL / perceived risk instrument is integral to the field research, each component was addressed separately in the interests of clarity. Details were provided regarding the research question and hypotheses, instrumentation, survey implementation, and data collection, and data analysis. Data validity and reliability, pre-testing and field testing were all discussed. Details of the pre-test involving 30 respondents were provided to support the validity and reliability of the present survey instrument. The official field research results are covered in Chapter Four; finally, discussion of the results, implications, and future research are addressed in Chapter Five.

CHAPTER 4. RESULTS

Introduction

This chapter discusses the results of the hypothesis testing. The analytical tools described in the preceding chapter were used to produce the results. Further discussion of the results, implications, and recommendations are presented in Chapter Five. This study's objective was to examine the influence of perceived risk on service quality in commercial air travel in the U.S. The current study only focused on exploring any statistical differences that might exist between business and non-business travel as they relate to perceived risk. While based on consumer behavior research, risk research has become widespread over the years in a variety of disciplines. Regardless of discipline, the essence of risk is the need for the risk taker to make choices amidst uncertainty (Conchar, Zinkhan, Peter, & Olavarrieta, 2004). To the extent that consumers are taking risks when they choose from a set of alternatives; risk concepts govern consumer decision making processes (Grewal, Gotlieb, & Marmorstein, 1994; Mitchell, 1999).

Analysis

As discussed at length in Chapter Two and Chapter Three, service quality is operationalized via the time-honored SERVQUAL instrument developed by Parasuraman, Berry, and Zeithaml (1985, 1988, 1991). The SERVQUAL scale incorporates the five dimensions of tangibility, reliability, responsiveness, assurance,

and empathy. These five dimensions constitute the sub-variables which support the combined variable, or construct, of service quality (Parasuraman et al., 1985, 1988, 1991). Consistent with the conceptual framework (supra), research and investigative questions were developed (Cooper & Schindler, 2003). As described in Chapter Three, the dimensions of service quality and perceived risk were operationalized, resulting in a methodology which provided the basis for examining the hypotheses necessary to evaluate the relationships.

Of the 276 received samples, 43 were significantly incomplete and unusable. The analysis used the remaining 233. In order to assure analytical accuracy, validity and reliability tests were performed on the SERVQUAL and Risk constructs prior to performing the hypotheses analyses. The reliability and validity results precede the hypotheses analysis.

Validity and Reliability for the Instruments Used

Table 1's Kaiser-Meyer-Olkin (KMO) value of .748 for the SERVQUAL validity seems adequate (Kaiser, 1974) and its Cronbach's alpha of .820, displayed in Table 2, indicates a good reliability (Norusis, 2005). Table 3's KMO of .790 indicates a good validity for the Risk construct (Kaiser). The .834 Cronbach's alpha displayed in Table 4 for Risk reliability is acceptable (Norusis). The validity and reliability calculations support a conclusion that the SERVQUAL and Risk constructs adequately and accurately model the data.

Table 1. SERVQUAL KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.748
Bartlett's Test of Sphericity	Approx. Chi-Square	24762.171
	df	946
	Sig.	.000

Table 2. SERVQUAL Reliability Statistics

Cronbach's Alpha	N of Items
.820	44

Table 3. Risk KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.790
Bartlett's Test of Sphericity	Approx. Chi-Square	1538.976
	df	66
	Sig.	.000

Table 4. Risk Reliability Statistics

Cronbach's Alpha	N of Items
.834	12

Examination of Hypotheses

The research question driving the present research, it will be recalled from Chapter One, is whether there is a correlation between the constructs of perceived risk and airline service quality for a random sample of airline passengers traveling on commercial airlines in the United States. Concomitantly, the three investigative questions are: (a) Do business airline travelers and non-business airline travelers differ in their evaluation of perceived risk? (b) Do business airline travelers and non-business airline travelers differ in their evaluation of airline service quality? (c) Is there a correlation between the construct of perceived risk and the dimensions of service quality for airline traveler segments? What follows is an examination of the three hypotheses.

Hypothesis 1

Hypothesis 1 tests for differences between the three types of airline travelers and perceived risk using the construct of perceived risk.

The first question is whether the average perceived risk differs according to the types of airline travelers. This question requires examining the relationship between several independent population means. According to Norusis (2005) this examination uses an ANOVA with the null hypothesis that all population means are equal. The alternative is that they are not.

The mean for business and non-business groups is 2.086, and ranges from 2.258 (business) to 1.983 (non-business) to 2.045 (both). The lower bound averages 1.915, and ranges from 1.951 (business) to 1.692 (non-business) to 1.746 (both). The upper bounds are at 2.257, and range from 2.566 (business) to 2.274 (non-business) to 2.344 (both).

The maximum is at 5.5, and ranges from 5.3 (both business and non-business) to 5.5 (both) (Table 5).

Table 5. Risk Descriptives

					95% Confidence Interval for Mean			
	N	Mean	Std. Deviation	Std. Error	Lower Bound	Upper Bound	Minimum	Maximum
Business	69	2.258	1.2806	.1542	1.951	2.566	.0	5.3
Personal	82	1.983	1.3241	.1462	1.692	2.274	.0	5.3
Both	82	2.045	1.3606	.1503	1.746	2.344	.0	5.5
Total	233	2.086	1.3238	.0867	1.915	2.257	.0	5.5

The ANOVA assumptions of normal data distribution, equal variance, and random independent samples required establishment (Norusis, 2005). The data collection methodology assured random independent samples for all the data. The .952 Sig for homogeneity of variance in Table E1 exceeds 0.05 (Appendix E. Hypothesis 1). The Sig. greater than 0.05, results in an inability to reject the null hypothesis of equal variance. The Kolmogorov-Smirnov Sig. displayed in Table E2 (Appendix E. Hypothesis 1) is much less than the required .05 and results in an ability to reject the null hypothesis that Risk is normal (Norusis). However, ANOVA is relatively immune to violations of normality (Norusis).

Because the .419 Sig. in the ANOVA Table 6 exceeds .0005 it results in an inability to reject the null hypothesis that the means are equal (Norusis, 2005). This supports the null hypothesis or Ho1. This results in an inference that there is a relationship between airline traveler type and perceived risk and the mean appears equal.

Table 6. Risk and Purpose of travel ANOVA

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	3.060	2	1.530	.872	.419
Within Groups	403.491	230	1.754		
Total	406.550	232			

Hypothesis 2

Hypothesis 2 tests for differences between the airline traveler's purpose of travel and the constructs of airline service quality as defined and measured in SERVQUAL.

This hypothesis determines whether the group of constructs that comprise SERVQUAL are affected by the difference in traveler's purpose. In other words is SERVQUAL affected by traveler's purpose. One way to evaluate this hypothesis would be to define SERVQUAL as some function of the five constructs, for example their average, and then relate that average to purpose. Alternatively a MANOVA that tested grouped dependent variables could be employed. It was decided to use a MANOVA.

The mean for the tangibles dimension is .716, and ranges from .5821 to .8201. The lower bound averages .6104, and ranges from .4001 to .6221. The upper bounds are

at .8217, and range from .7642 to 1.0181. The maximum is at 3.75, and ranges from 3.50 to 3.75 (Table F1. Appendix F. Hypothesis 2).

The mean for the reliability dimension is .95, and ranges from .76 to 1.23. The lower bound averages .81, and ranges from .54 to .95. The upper bounds are at 1.09, and range from .98 to 1.51. The maximum is at 6.0, and ranges from 3 to 6 (Table F1, Appendix F. Hypothesis 2).

The mean for the responsiveness dimension is .917, and ranges from .806 to 1.223. The lower bound averages .777, and ranges from .513 to .946. The upper bounds are at 1.056, and range from .896 to 1.499 (Table F1, Appendix F. Hypothesis 2).
The mean for the assurance dimension is 5.04, and ranges from 15.08 to .65. The lower bound averages -3.40, and ranges from -13.80 to .47. The upper bounds are at 13.48, and range from 43.95 to .82. The maximum is at 999, and ranges from 4 to 999 (Table F1, Appendix F. Hypothesis 2).

The mean for the empathy dimension is .90, and ranges from .76 to 1.17. The lower bound averages .76, and ranges from .53 to .91. The upper bounds are at 1.04, and range from .97 to 1.42. The maximum is at 5.0, and ranges from 4 to 5 (Table F1, Appendix F. Hypothesis 2). The MANOVA assumptions of dependent variable normal data distribution, dependent variable equal variance, equal covariance, and random independent samples required establishment (Norusis, 2005). Random independent samples were already established for all the data. This hypothesis required evaluating all five SERVQUAL constructs as a group.

The covariance test described in Table F2 (Appendix F. Hypothesis 2) results in initially rejecting the null hypothesis that the dependent variables have equal covariance

in groups. The normality tests, described in Table F3 (Appendix F. Hypothesis 2), indicate .000 for all five constructs' Kolmogorov-Smirnov and Shapiro-Wilk Sigs. Hence, none of the SERVQUAL constructs display strong normal data (Norusis, 2005). The absence of normality affects the equality of covariances and equality of variances. Although the normality tests, described in Table F3 (Appendix F. Hypothesis 2), indicate an absence of normality, the raw data histograms illustrated somewhat normal distributions. Tabachnick and Fidell (2001) state that "With Univariate F and large samples, the central limit theorem suggests that the sampling distribution of means approaches normality even when raw scores do not" (p.329). The raw distributions, large sample size, and the absence of outliers resulted in a judgment that the data were sufficiently normal to support the MANOVA. Nevertheless, a larger sample would seem desirable to better confirm normality.

According to Tabachnick and Fidell (2001), The Box test is highly susceptible to difference in sample sizes. As a result, Tabachnick and Fidell recommend randomly removing data to ensure identical sample sizes and re-performing the Box test. Randomly removing travelers from the "pleasure" and "both" categories resulted in identical sample sizes of 69 for all three traveler groups. The re-executed Box test in Table 7 confirms that the null hypothesis of equal covariance should be rejected. Hence the MANOVA equal covariance assumption still appears to fail. However, Rimarcik (2007) states that a violation of the covariance assumption results in relying on the Pillai's trace criterion multivariate statistic. The Pillai's trace Sig of .016 in Table 8 is less than .05. That results in accepting significance or the null hypothesis that there is a significant relationship between traveler's purpose and the grouped SERVQUAL constructs. This supports Ho2.

Table 7. Box's Test of Equality of Covariance Matrices[a]

Box's M	1621.129
F	52.344
df1	30
df2	159091.020
Sig.	.000

Note: Tests the null hypothesis that the observed covariance matrices of the dependent variables are equal across groups.

a. Design: Intercept + PURPOSE

Table 8. Multivariate Tests[d]

Effect		Value	F	Hypothesis df	Error df	Sig.	Noncent. Parameter	Observed Power[b]
Intercept	Pillai's Trace	.483	42.241[a]	5.000	226.000	.000	211.206	1.000
	Wilks' Lambda	.517	42.241[a]	5.000	226.000	.000	211.206	1.000
	Hotelling's Trace	.935	42.241[a]	5.000	226.000	.000	211.206	1.000
	Roy's Largest Root	.935	42.241[a]	5.000	226.000	.000	211.206	1.000
PUR-POSE	Pillai's Trace	.093	2.223	10.000	454.000	.016	22.229	.920
	Wilks' Lambda	.909	2.220[a]	10.000	452.000	.016	22.197	.919
	Hotelling's Trace	.099	2.216	10.000	450.000	.016	22.164	.919
	Roy's Largest Root	.067	3.026[c]	5.000	227.000	.012	15.132	.860

Note:

a. Exact statistic

b. Computed using alpha = .05

c. The statistic is an upper bound on F that yields a lower bound on the significance level.

d. Design: Intercept + PURPOSE

Hypothesis 3

Hypothesis 3 could be analyzed by either correlation or regression analysis. Correlation analysis was selected. Establishing linear relationships required examining

the scatter plots for linearity and the correlation coefficients for significance (Norusis, 2005). Just as with H2, each of the five SERVQUAL constructs was examined. This hypothesis required examination between Risk and the specific SERVQUAL constructs of Tangibles, Reliability, Responsiveness, Assurance, and Empathy. Data independence for all variables was achieved by the collection method.

Tangibles.

Hypothesis 3.1 tested for a linear relationship between the construct of perceived risk and the Tangibles dimension of airline service quality. Figure 3's depiction of Risk and Tangibles indicates another weak relationship with a 0.029 R^2 linear. The -.171 two tailed Pearson correlation supports that a significant negative relationship exists between Risk and Tangibles. The observed Sig. less than 0.05 in Table 9 supports the conclusion that one may reject the null hypothesis of no relationship between Risk and Tangibles (Norusis, 2005). The relationship appears linear and negative. Thus, as the Tangibles construct improves, Risk decreases. Alternatively, as Risk increases, Tangibles decrease. This finding supports Ha3.1.

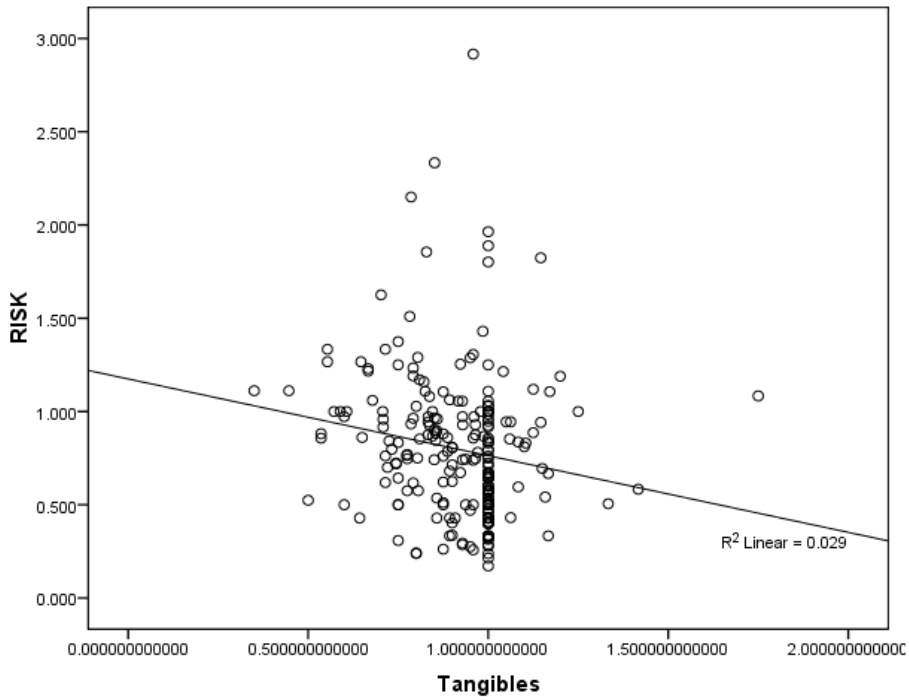

Figure 3. Risk versus Tangibles

Table 9. Correlations Risk / Tangibles

		Risk	Tangibles
Risk	Pearson Correlation	1	-.171**
	Sig. (2-tailed)		.009
	N	233	233
Tangibles	Pearson Correlation	-.171**	1
	Sig. (2-tailed)	.009	
	N	233	233

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

Reliability.

Hypothesis 3.2 tested for a linear relationship between the construct of perceived risk and the Reliability dimension of airline service quality. Figure 4 also appears to portray a well dispersed relationship between Risk and Reliability. The R^2 of .075 supports at best a weak relationship. However, the -.2733 Pearson correlation in Table 10 is significant to the .01 level. The .000 Sig. results in rejecting the null hypothesis that there is no relationship. The relationship displayed in Figure 4 does not appear to be curved. These findings support a conclusion that Risk and Reliability possess a negative linear relationship. Thus as Risk increases Reliability decreases. This negative relationship supports Ha3.2.

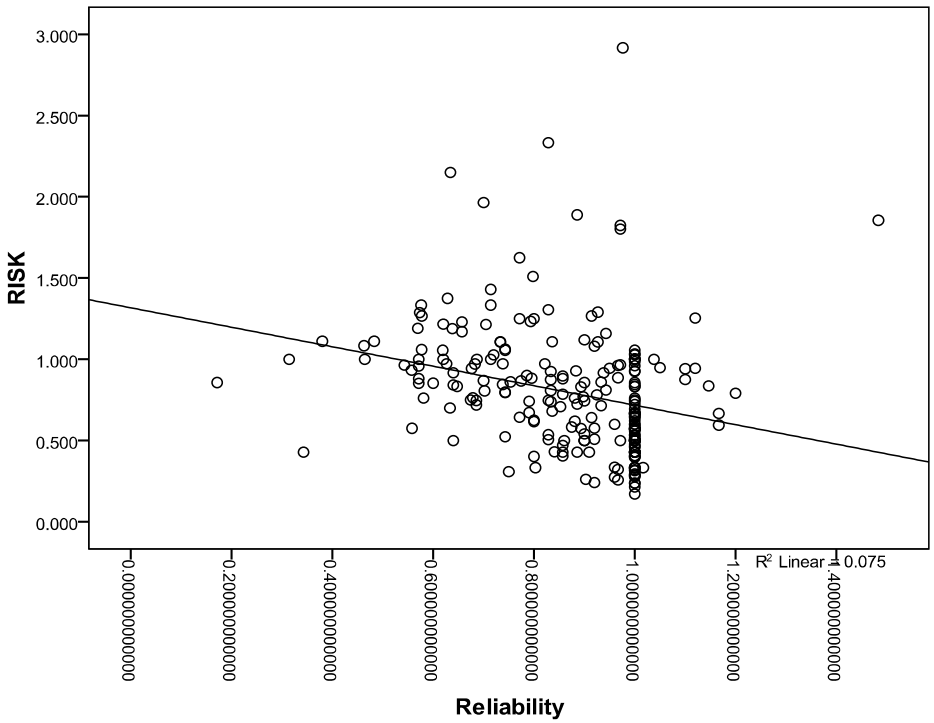

Figure 4. Risk versus Reliability

Table 10. Correlations Risk / Reliability

		Risk	Reliability
Risk	Pearson Correlation	1	-.273**
	Sig. (2-tailed)		.000
	N	233	233
Reliability	Pearson Correlation	-.273**	1
	Sig. (2-tailed)	.000	
	N	233	233

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

Hypothesis 3.3 tested for a linear relationship between the construct of perceived risk and the Responsiveness dimension of airline service quality. Figure 5 illustrates another weak relationship with an R^2 of .036. This Risk versus Responsiveness correlation of -.189, in Table 11, possesses a Sig. of .004. Therefore, one may reject the null hypothesis that there is no relationship between the variables. Therefore, it is also significant, linear, and negative. The negative linear relationship supports Ha3.3.

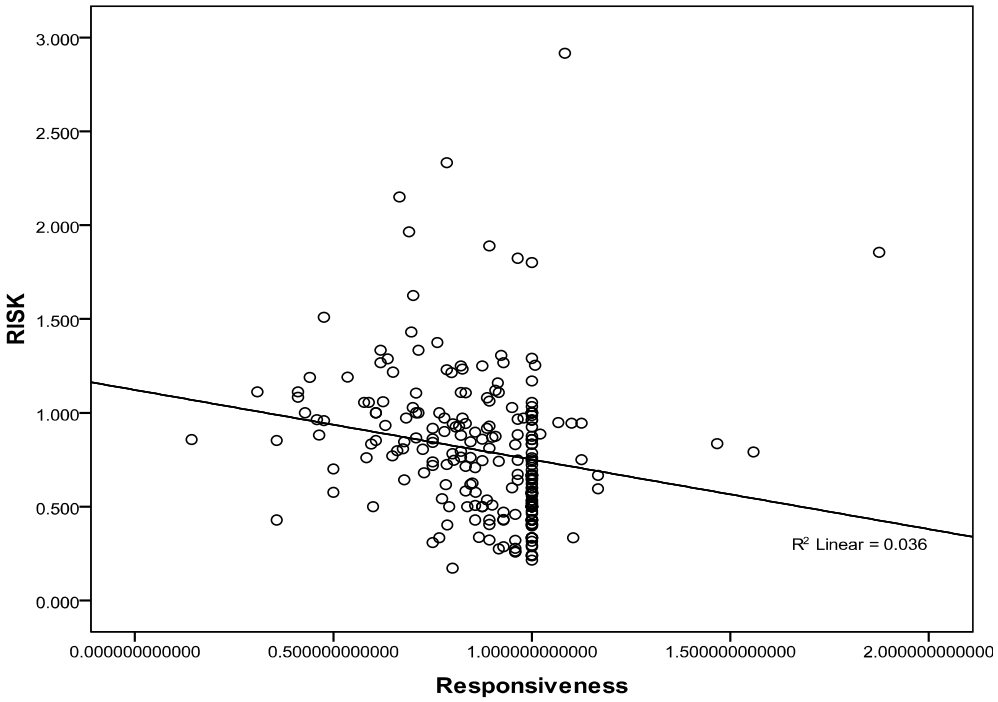

Figure 5. Risk versus Responsiveness

Table 11. Correlations. Risk / Responsiveness

		Risk	Responsiveness
Risk	Pearson Correlation	1	-.189**
	Sig. (2-tailed)		.004
	N	233	233
Responsiveness	Pearson Correlation	-.189**	1
	Sig. (2-tailed)	.004	
	N	233	233

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

Assurance.

Hypothesis 3.4 tested for a linear relationship between the construct of perceived risk and the Assurance dimension of airline service quality. Figure 6 also appears to display a widely distributed pattern with an R^2 of .039. The Risk versus Assurance relationship however, is significant and contains the -.196 correlation displayed in Table 12. The .003 Sig results in the ability to reject the null hypothesis, that there is no relationship between risk and assurance. Thus, Risk versus the Assurance construct produces a slightly negative linear relationship. This conclusion supports Ha3.4.

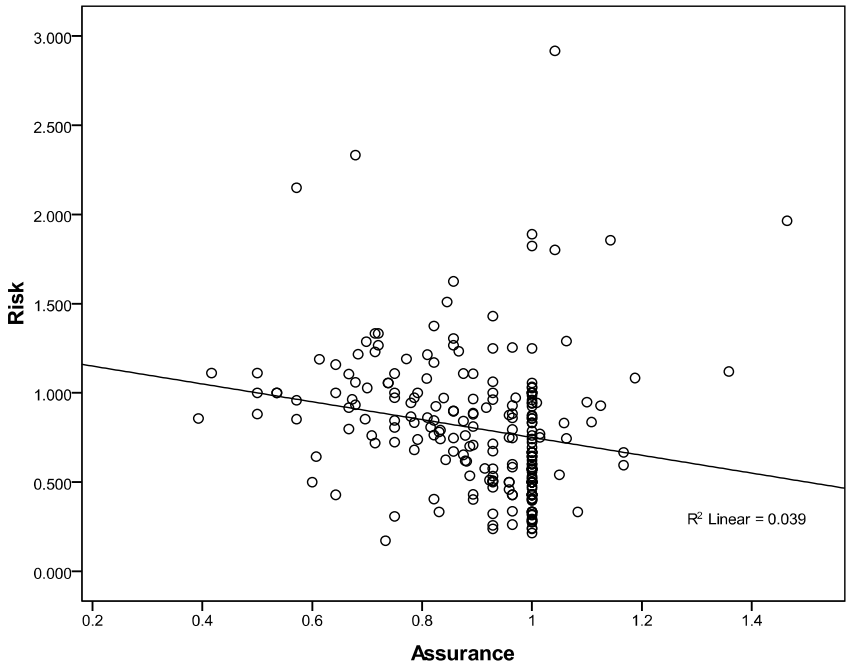

Figure 6. Risk versus Assurance

Table 12. Correlations Risk / Assurance

		Risk	Assurance
Risk	Pearson Correlation	1	-.196**
	Sig. (2-tailed)		.003
	N	233	232
Assurance	Pearson Correlation	-.196**	1
	Sig. (2-tailed)	.003	
	N	232	232

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

Empathy.

Hypothesis 3.5 tested for a linear relationship between the construct of perceived risk and the Empathy dimension of airline service quality. Figure 7 illustrates another widely dispersed pattern with a weak R^2 value of 0.036. The .004 Sig. for the Risk versus Empathy relationship, displayed in Table 13, is also significant and accompanies a Pearson correlation of -.190. The .004 Sig. results in being able to reject the null hypothesis of no relationship between Risk and Empathy. The negative linear correlation supports Ha3.5.

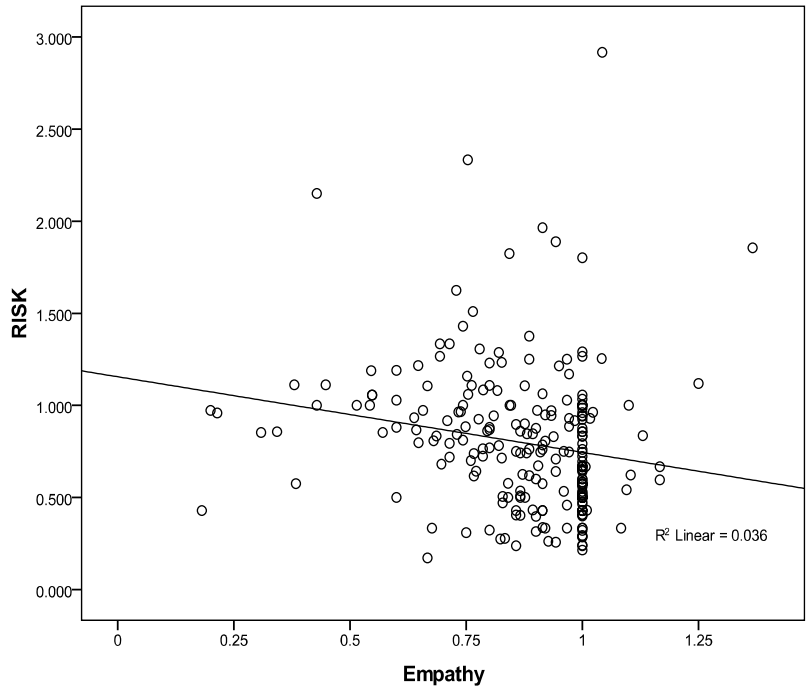

Figure 7. Risk versus Empathy

Table 13. Correlations Risk / Empathy

		Risk	Empathy
Risk	Pearson Correlation	1	-.190**
	Sig. (2-tailed)		.004
	N	233	233
Empathy	Pearson Correlation	-.190**	1
	Sig. (2-tailed)	.004	
	N	233	233

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

These findings support a conclusion that in each case – Risk and Tangibles; Risk and Reliability; Risk and Responsiveness; Risk and Assurance; Risk and Empathy – there

is a negative linear relationship. This negative relationship supports Ha3.1, Ha3.2; Ha3.3; Ha3.4; Ha3.5. This finding seems to suggest an intuitive result.

The widely distributed points on each scatter graph support that the relationship between Risk and each of the SERVQUAL construct dimensions appears at best moderate. Each of the Pearson correlations is significant, the coefficients with absolute values between .10 and .30 indicate greater than weak and approaching moderate level relationships (Cohen, 1988).

Cohen (1988) designates weak relationships as those with absolute value Pearson coefficients less than .10 and moderate relationships as those with absolute values close to.30. Hence the correlational analysis supports the conclusion that each SERVQUAL construct possesses a weakly moderate negative linear relationship to Risk.

Summary

Chapter Four described the statistical analysis of the data with the objective of scrutinizing the hypotheses developed in the course of the research. Chapter Five contains the discussion and implications pursuant to the results chronicled in this chapter. Most important, it presents recommendations for future research.

CHAPTER 5. DISCUSSION, IMPLICATIONS, RECOMMENDATIONS

Introduction

The purpose of this study was to investigate the influence of perceived risk on service quality in commercial air travel in the U.S. This chapter discusses the results, implications, and recommendations as follows: (a) findings relative to statistical analysis of the hypotheses presented; (b) implications for practitioners and researchers, (c) limitations of the study, and (d) recommendations for future research.

Discussion

The research question was the determination of a relationship between the constructs of perceived risk and perceived airline service quality for a random sample of airline passengers traveling on commercial air in the U.S. Three investigative questions are subsumed thereunder: (a) whether business airline travelers and non-business airline travelers differ in their perception of risk; (b) whether business airline travelers and non-business airline travelers differ in their evaluation of airline service quality; and (c) whether there exists a correlation between the construct of perceived risk and the dimensions of service quality for airline traveler segments. The constructs of risk and service quality were measured using the SERVQUAL / Risk survey instrument and evaluated using inferential statistics. The instrument used was tested for validity and reliability. Both SERVQUAL and risk components of the survey instrument support a conclusion that they accurately and adequately model the data.

A total of 276 participants provided informed consent before being authorized to participate in the web survey. Excluding 43 significantly incomplete and unusable responses, 233 responses were usable for analysis. Among the respondents, 81 were business travelers, 90 were non-business travelers, and 105 were both. Most respondents had flown three to five times within the last 12 months of the research (48.3 %), most had flown on their airline within the past six months (76.1%), more respondents flew for non-business (36.6%) than for business (35.7%) purposes; most respondents flew domestically rather than internationally (66.0% vs. 2.5%); most had one to four loyalty memberships (82.8%); there were more male (61.3%) than female (38.7 %) respondents; more respondents were married (61.0%) than single (39.0%); the top three ethnic groups were Caucasian (54.0%), Black (25.7 %), and Asian (10.5%); most of the respondents earned an annual income of $100 000 to $150 000 (34.1%), followed by those who earned $50 000 to $100 000 (29.7%), then those who earned $150 000 or more (22.0%). The respondents were highly educated : master's degree or higher (35.4%), college graduate (26.6%), and some college (23.6%). The top three professions of the respondents were "other" (28.7%), business executive (22.8%), and professional (12.2%).

Overall, the respondents perceived that their airline offered good service quality. The respondents were satisfied with their airline (43%), believed the service quality of their airline was high (45.4%), would recommend their airline to friends and associates (48.3%), and would consider patronizing the airline the next time they flew (40.2%).

Among the risk elements arising out of a "sudden negative event", the respondents deemed the three most important of the six were physical risk - 7 on a 7 - point scale (38.7%), financial risk – 6 on a 7-point scale (33.8%), and performance risk –

6 on a 7-point scale (31.8%). On the other hand, the respondents rated 3 on a 7- point scale the likelihood of occurrence of risk from a "sudden negative event" for each of the top three: performance risk (26.0%), physical risk (24.5%), and psychological risk (24.3%).

Implications

Hypothesis 1 tested for differences between categories of airline travelers and perceived risk using the construct of perceived risk. The first question was whether the average perceived risk differs according to the types of airline travelers. The ANOVA analysis resulted in an inability to reject the null hypothesis that the populations have the same distributions and the null that the means are equal, results in a conclusion that there is a relationship between airline traveler type and perceived risk, thus supporting the conclusion that business and non-business travelers perceived risk identically. This intuitive inference is natural. If an air traveler were traveling for business reasons, there would be a premium on safe and speedy arrival as planned. On the contrary, if an air traveler were traveling for pleasure, as an example, then most often, there would be more tolerance for risk in the sense that delays could be better accommodated (Dolnicar, 2005).

Additionally, for tourism purposes, certain travelers would be drawn to risk as an attraction (Conchar et al., 2004, Dolnicar, 2005). In general though, regardless of the purpose of travel, passengers would think twice about boarding an aircraft if there was a probability of danger from damage to the aircraft or injury to self. The result is consistent with the research conducted Cunningham, Young, and Lee (2004), where it was found that travel declined after 9/11. Notwithstanding the absence of statistical

difference among the airline traveler types, however, the risk perceived by individual travelers may differ according to a variety of other factors, e.g. personality type, or degree of risk aversion (Conchar, Zinkhan, Peter, & Olavarrieta, 2004).

Hypothesis 2 tested for differences between the airline traveler's purpose of travel and the constructs of airline service quality as defined and measured in SERVQUAL. This hypothesis determined whether the construct group comprising SERVQUAL was affected by the difference in traveler's purpose. A MANOVA that tested grouped dependent variables was employed. Analysis resulted in favoring the null hypothesis that there is a significant relationship between traveler's purpose and the grouped SERVQUAL construct, thus supporting the conclusion that each traveler type perceived service quality identically. The intuitive nature of this result bears out an aspect of human nature, that if one traveled for business, one would be more sensitive to the perceived service quality; the seats presumably would have cost more; on the contrary, if the travel was for non-business reasons, the fare presumably would have been lower, because one would have prioritized inexpensive fare as key; for that reason, the service quality would not have been as important although no less desirable.

Hypothesis 3 required examination of the correlation between Risk and the specific SERVQUAL dimensions constructs of Tangibles, Reliability, Responsiveness, Assurance, and Empathy. Data independence for all variables was achieved by the collection method.

The findings support a conclusion that in each case – Risk and Tangibles; Risk and Reliability; Risk and Responsiveness; Risk and Assurance; and Risk and Empathy, there exists a negative linear relationship. As an example, as the Tangibles construct

improves, Risk decreases. Alternatively, as Risk increases, Tangibles decrease. The negative linear relationship similarly pertains for the other dimensions: Reliability, Responsiveness, Assurance, and Empathy. This negative relationship supports the conclusion that risk and each dimension of service quality have a negative linear relationship. This finding seems to suggest an intuitive result. If the air traveler perceives an increase in risk, the perception of service quality goes down whether it is true or otherwise. On the other hand, if the air traveler perceives an increase in service quality, then the perception of risk diminishes. This is consistent with research on the zone of tolerance.

Although the analysis established a less than robust negative linear relationship between each SERVQUAL dimension and Risk, the investigation did establish that there was no positive linear relationship between the two.

Numerous research studies have been conducted on service quality (McLaughlin, 1994) and service quality in the airlines (Alotaibi, 1992; Rhoades, Waguespack, & Truedt, 1998; Rhoades & Waguespack, 1999, 2000a, 2000b; Hunter, 2006). There have not been that many, however, that have been focused on the influence of risk on service quality in commercial air travel in the U.S., in particular on "sudden negative events" (Cunningham, Young, & Lee, 2002, 2004). Cunningham et al. conducted notable research due to the longitudinal nature of the study, just prior to 9/11, and after 9/11. Their respondent groups during both studies comprised primarily Asian professionals who were attending university in the U.S. In contrast, the present study focused on professionals in the U.S. from several industry sectors that traveled for both business and non-business purposes.

The present study contributes to the extant literature on the influence of a basic element of life, perceived risk, on perceived service quality. Service quality has been recognized as a reliable measure of customer satisfaction. Insofar as airline passenger dissatisfaction persists (Hunter, 2006), the threat from "sudden negative events" (Cunningham, Young, & Lee, 2002, 2004) in the U.S. does not appear to abate (Clarke, 2005), and security at U.S. airports remains a chronic problem (Goldberg, 2008), the findings from this study remain timely and useful for airline management to consider.

Limitations of this Study

The present study's limitations must be noted before researchers make inferences to the results obtained. First, notwithstanding the confidentiality and anonymity of the field survey, and the potential respondents invited at random to participate in the survey, limitations were incurred from the nature of the online survey. The field research was conducted in December, 2008, during a period when the country was already undergoing economic volatility. The respondents were either on vacation, on business travel, or had left their respective companies. Invitations were sent multiple times for the potential respondents to participate in the research. Fewer responses than the expected number of 384 or more responses were received. Only 276 responses were collected, of which 43 were discarded because they were incomplete. For that reason, the survey results were analyzed on an inferential basis (Robson, 2002). The lower than desired number of usable responses to the field research might constitute a deficiency in the study; nevertheless, the 233 usable responses used in the research compared favorably with those acquired in the course of similar research (Alotaibi, 1992; Cunningham, Young, &

Lee, 2004; Hunter, 2006; Sang, 2008). Moreover, the number of responses fell within the 200 – 400 range of responses expected by the researcher.

Second, some survey responses may have been subject to error due to respondents' self-reporting, demographic differences were unexamined, and the lack of interviewer involvement in the data collection process might have been an impediment (Cooper & Schindler, 2003, Leedy & Ormrod, 2005). Third, the potential sensitivity of the research topic, the role of perceived risk in perceived service quality, might have resulted in the respondents' incomplete responses. Fourth, certain respondents might have been hesitant about responding to online surveys; they might not have participated due to a technology challenge.

Recommendations for Future Research

As a result of the findings, it seems apparent that additional research might replicate the present study in a number of ways. Suggestions include further validation of the SERVQUAL and Risk constructs. Future research might examine different aspects of the U.S. commercial air travel industry, by focusing on specific air traveler demographics, a combination of domestic and international travel, or longitudinal studies.

1. Different risk facet. The SERVQUAL construct could be paired with specific elements of risk; one approach would be to replicate the present research to focus on the individual (Conchar, Zinkhan, Peter, & Olavarrieta, 2004). Related elements of risk to research include but are not limited to the consumer's traits such as: an individual's level of anxiety, self-confidence, and intolerance of ambiguity, risk aversion. Another intriguing facet of risk would be to replicate the study based on the individual's risk

taking propensity; it is only after the risk-taking propensity has been established that the individual engages in behavior.

2. Business versus non-business air traveler sub-segments. More in-depth research could compare business versus non-business air travel by reliance on more granular air traveler segments. Business air traveler could be segmented by various or specific professions, or by class of service. Non-business air travel could be further classified into categories such as vacation; bereavement; wedding; tourism; education.

3. Domestic versus international travel. Future researchers could study the influence of perceived risk on perceived service quality by air travelers of U.S. commercial airlines engaged predominantly in global travel.

4. Airline categories. Research could be conducted comparing and contrasting air travelers who are distinguished by the airline categories they patronize: Global (single airline international; code sharing partners; non-US airlines operating in the US); 100 % domestic (national, regional, feeder); low-cost carriers (LCC) (Airline Business, May, 2009).

5. Airport categories. Research could also focus on airport categories, i.e. Single origin and destination (O and D), comparisons of certain city pairs, or hub and spoke flights. Of the top 50 airports in the world, 40% are in the U.S. (Airline Business, June, 2009).

6. "Sudden negative events" Longitudinal Study conducted by Cunningham, Young and Lee (2004). Most intriguing would be a longitudinal replication of the present study; the first study would precede, the second follow a future "sudden negative event".

Conclusion

The present empirical research has contributed to the literature reviewed in Chapter Two. Both SERVQUAL and risk components of the instrument proved to be useful and reliable for the results described in Chapter Four. This investigation quantitatively examined the influence of perceived risk on the service quality of air travel in the United States. It was concluded that regardless of air traveler type, there exists the influence of perceived risk. The air traveler's travel purpose and service quality were found to be correlated. Moreover, perceived risk and perceived service quality were found to be negatively correlated: as perceived risk increases, the perceived service quality decreases for each of the five dimensions of service quality. This study is consistent with earlier research on "sudden negative events" (Cunningham, Young, & Lee, 2004). It validates the correlation between certain elements of risk (financial, performance, physical, psychological, social and political) (Dolnicar, 2005) and service quality dimensions of Tangibles, Reliability, Responsiveness, Assurance, and Empathy (Parasuraman, Zeithaml, & Berry, 1985). It empirically reveals the gap between the perceived importance of a risk element and the perceived recurrence of that risk in the foreseeable future and further validates the use of service quality as a measure of customer satisfaction. (Alotaibi, 1992).

This research will provide guidance for management to enhance processes that can maximize service quality in U.S. air travel. Not only should management do its utmost to increase air traveler satisfaction by increasing service quality, it should not ignore the influence of perceived risk on perceived service quality. Finally, the present research has presented additional, potentially intriguing scenarios for future research.

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APPENDIX A. SURVEY INSTRUMENT

Part I.A, I.B, I.C. SERVQUAL

Parasuraman, Zeithaml, and Berry (1985, 1988); Parasuraman, Berry, and Zeithaml (1991)

Part II. Perceived Risk

We consumers know that we are taking a risk of some sort whenever we decide to purchase a good or service. We have to make choices among alternatives. The air travel purchase decision is the same. For instance, if we decide to travel on a certain airline, and the travel experience is less than positive, it can be said that we have taken a risk of having made a poor selection, evidenced in the outcome. There are several kinds of risk that we can incur: **financial; performance; political**; **physical; psychological; social**. We incur financial risk when we spend money unwisely by selecting the "wrong" airline. We incur performance risk when we receive poor airline service. We incur political risk when we select an airline for travel at times when terrorism ("sudden negative event") poses a possible threat to flight safety. We incur physical risk when there is a possibility of injury or loss of life. We incur psychological risk when there is a risk of disappointment by the airline service we selected. We incur social risk when we risk embarrassment before friends or family. In light of the above context, please observe the two columns below. The statements –a- through –g- apply to both columns. Please circle the applicable number (from 1 "low" to 7" high) for each of the two columns.

	1. Importance of risk factor **It is possible that air travel may occur during times of "sudden negative events" of catastrophic proportions as exemplified by but not limited to the events of September 11, 2001. In the context of air travel in the U.S. during the foreseeable future (i.e. the next 12 months), the importance of the following risk factors that would cause you to change or cancel an air travel purchase decision would be:**							**2. Likely occurrence of risk factor** **In the context of air travel in the U.S. during the foreseeable future (i.e. the next 12 months), the risk factor that you think most likely will occur is:**						
	Low						High	Low						High
1. Financial risk from "sudden negative events"[1]	1	2	3	4	5	6	7	1	2	3	4	5	6	7
2. Performance risk from "sudden negative events" [1]	1	2	3	4	5	6	7	1	2	3	4	5	6	7
3. Physical risk from "sudden negative events". [1]	1	2	3	4	5	6	7	1	2	3	4	5	6	7
4. Psychological risk from "sudden negative events" [1]	1	2	3	4	5	6	7	1	2	3	4	5	6	7
5. Social risk from "sudden negative events" [1]	1	2	3	4	5	6	7	1	2	3	4	5	6	7
6. Political risk from "sudden negative events" [2]	1	2	3	4	5	6	7	1	2	3	4	5	6	7

Part III. Respondent Basic Data (for Statistical Purposes Only)

The following questions are for statistical purposes only. Your responses will be combined with those of other respondents and will be kept strictly confidential. You patronize or prefer to fly on XYZ Airlines more than other airlines in general. For each question, please circle one number.

XYZ Airlines predominantly means for you: (Circle the applicable letter)

(a) _____ (Name Airline, e.g. DL)

(b) _____ (Name Two or More Airlines, e.g. UA & AA)

(c) Various

(d) N/A

1. Air Travel Experience

   a. How many flights did you take on commercial airlines in the past 12 months?
      One to Two times _____1
      Three to Five times _____2
      Six to Nine times _____3
      Ten or more times _____4

   b. When did you most recently fly on XYZ Airlines?

      Within the last six months _____1
      Within the last 12 months _____2

When you fly on XYZ Airlines, the purpose of your travel is:

Predominantly business _____1
Predominantly non-business _____2
Both business and non-business _____3

When you fly on XYZ Airlines, your travel is:

Predominantly domestic _____1
Predominantly international _____ 2
Both domestic and international _____3

How many airline loyalty ("Frequent Flyer") clubs do you belong to?

None _____ 1
One to Four _____2
Five or more _____3

2. Demographics

Your gender O Male O Female

Your age group
Under 25 _____1
25 to under 40 _____2
40 to under 60 _____3
60 and over _____4

Your marital status

Single _____1
Married _____2

Part III. Respondent Basic Data (for Statistical Purposes Only) *continued*

Your race / ethnicity (Circle all that apply)

Caucasian _____1
Black _____2
Hispanic / Latino _____ 3
Asian _____4
Middle Eastern _____ 5
Other _____6

Your citizenship
At Birth _____ Current _____
Years You Lived in U.S. _____

The highest educational level you completed

Some College _____1
College graduate _____2
Some postgraduate _____3
Master's degree or more _____4

Your current occupation

[Although you may belong to several categories, please only check one.]

O Business Executive [Director or above]
O Professional [doctor, lawyer, engineer]
O Consultant
O Information Technology (IT)
O Aviation industry
O Government [U.S. federal, state, local]
O Military
O Educator
O Other

APPENDIX B. PRE-TEST PERCEIVED RISK VALIDITY AND RELIABILITY

Table B1. Perceived Risk Communalities

	Initial	Extraction
FIN-IMP	1.000	.920
PER-IMP	1.000	.754
PHY-IMP	1.000	.828
PSY-IMP	1.000	.795
SOC-IMP	1.000	.802
POL-IMP	1.000	.723

Note: Extraction Method: Principal Component Analysis.

Table B2. Perceived Risk Total Variance Explained

Component	Initial Eigenvalues		
	Total	% of Variance	Cumulative %
1	4.823	80.377	80.377
2	.752	12.537	92.914
3	.279	4.651	97.565
4	.071	1.184	98.749
5	.049	.818	99.567
6	.026	.433	100.000

Note: Extraction Method: Principal Component Analysis.

Table B3. Perceived Risk Component Matrix (a)

	Component
	1
FIN-IMP	.959
PER-IMP	.868
PHY-IMP	.910
PSY-IMP	.892
SOC-IMP	.896

POL-IMP	.850

Note: Extraction Method: Principal Component Analysis.
a 1 components extracted.

Rotated Component Matrix(a)

a Only one component was extracted. The solution cannot be rotated.

The determination of a single component non-rotatable matrix justified risk construct validity.

Table B4. Case Processing Summary Risk Reliability

		N	%
Cases	Valid	28	90.3
	Excluded (a)	3	9.7
	Total	31	100.0

Note: a Listwise deletion based on all variables in the procedure.

Table B5. Reliability for Perceived Risk

Cronbach's Alpha	N of Items
.949	6

The .949 Cronbach's alpha was deemed adequate to justify risk construct reliability.

APPENDIX C. PRE-TEST VALIDITY ANALYSIS

Table C1. Financial Component Matrix[a]

	Component
	1
FIN-PRB	.892
FIN-IMP	.892

Note: Extraction Method: Principal Component Analysis.

a. 1 components extracted.

Table C2. Financial KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.500
Bartlett's Test of Sphericity	Approx. Chi-Square	11.040
	df	1
	Sig.	.001

Table C3. Financial Total Variance Explained

	Initial Eigenvalues		
Component	Total	% of Variance	Cumulative %
1	1.593	79.640	79.640
2	.407	20.360	100.000

Note: Extraction Method: Principal Component Analysis.

Table C4. Performance Component Matrix[a]

	Component
	1
PER-IMP	.896
PER-PRB	.896

Note: Extraction Method: Principal Component Analysis.

a. 1 components extracted.

Table C5. Performance KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.500
Bartlett's Test of Sphericity	Approx. Chi-Square	11.584
	df	1
	Sig.	.001

Table C6. Performance Total Variance Explained

	Initial Eigenvalues		
Component	Total	% of Variance	Cumulative %
1	1.604	80.212	80.212
2	.396	19.788	100.000

Note: Extraction Method: Principal Component Analysis.

Table C7. Physical Component Matrix[a]

	Component
	1
PHY-IMP	.840
PHY-PRB	.840

Note: Extraction Method: Principal Component Analysis.

a. 1 components extracted.

Table C8. Physical KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.500
Bartlett's Test of Sphericity	Approx. Chi-Square	4.382
	df	1
	Sig.	.036

Table C9. Physical Total Variance Explained

Compo-nent	Initial Eigenvalues		
	Total	% of Variance	Cumulative %
1	1.412	70.622	70.622
2	.588	29.378	100.000

Note: Extraction Method: Principal Component Analysis.

Table C10. Psychological Component Matrix[a]

	Component
	1
PSY-IMP	.899
PSY-PRB	.899

Note: Extraction Method: Principal Component Analysis.

a. 1 components extracted.

Table C11. Psychological KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.500
Bartlett's Test of Sphericity	Approx. Chi-Square	11.697
	df	1
	Sig.	.001

Table C12. Psychological Total Variance Explained

Component	Initial Eigenvalues		
	Total	% of Variance	Cumulative %
1	1.616	80.807	80.807
2	.384	19.193	100.000

Note: Extraction Method: Principal Component Analysis.

Table C13. Social Component Matrix[a]

	Component
	1
SOC-IMP	.918
SOC-PRB	.918

Note: Extraction Method: Principal Component Analysis.

a. 1 components extracted.

Table C14. Social KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.500
Bartlett's Test of Sphericity	Approx. Chi-Square	15.498
	df	1
	Sig.	.000

Table C15. Social Total Variance Explained

	Initial Eigenvalues		
Component	Total	% of Variance	Cumulative %
1	1.685	84.233	84.233
2	.315	15.767	100.000

Note: Extraction Method: Principal Component Analysis.

Table C16. Political Component Matrix[a]

	Component
	1
POL-PRB	.903
POL-IMP	.903

Note: Extraction Method: Principal Component Analysis.

a. 1 component extracted.

Table C17. Political KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.500
Bartlett's Test of Sphericity	Approx. Chi-Square	12.404
	df	1
	Sig.	.000

Table C18. Political Total Variance Explained

	Initial Eigenvalues		
Component	Total	% of Variance	Cumulative %
1	1.630	81.515	81.515
2	.370	18.485	100.000

Note: Extraction Method: Principal Component Analysis.

APPENDIX D. PRE-TEST HYPOTHESIS TESTS

Table D1. ANOVA Between Perceived Risk Variables

				Sum of Squares	df	Mean Square	F	Sig.
POL	Between Groups	(Combined)		2.070	2	1.035	.165	.848
		Linear Term	Unweighted	2.042	1	2.042	.326	.573
			Weighted	1.782	1	1.782	.285	.598
			Deviation	.288	1	.288	.046	.832
	Within Groups			162.757	26	6.260		
	Total			164.828	28			
SOC	Between Groups	(Combined)		6.016	2	3.008	.556	.580
		Linear Term	Unweighted	.042	1	.042	.008	.931
			Weighted	.698	1	.698	.129	.722
			Deviation	5.318	1	5.318	.982	.331
	Within Groups			140.743	26	5.413		
	Total			146.759	28			
PSY	Between Groups	(Combined)		4.886	2	2.443	.489	.619
		Linear Term	Unweighted	.667	1	.667	.133	.718
			Weighted	1.755	1	1.755	.351	.559
			Deviation	3.131	1	3.131	.627	.436
	Within Groups			129.941	26	4.998		
	Total			134.828	28			
PHY	Between Groups	(Combined)		2.732	2	1.366	.176	.840
		Linear Term	Unweighted	1.042	1	1.042	.134	.717
			Weighted	1.755	1	1.755	.226	.639
			Deviation	.977	1	.977	.126	.726
	Within Groups			202.096	26	7.773		
	Total			204.828	28			
PER	Between Groups	(Combined)		9.036	2	4.518	.989	.385
		Linear Term	Unweighted	3.375	1	3.375	.739	.398
			Weighted	5.736	1	5.736	1.256	.273
			Deviation	3.300	1	3.300	.722	.403
	Within Groups			118.757	26	4.568		
	Total			127.793	28			

Table D1. ANOVA Between Perceived Risk Variables *continued*

				Sum of Squares	df	Mean Square	F	Sig.
FIN	Between Groups	(Combined)		7.939	2	3.969	.852	.438
		Linear Term	Unweighted	1.042	1	1.042	.224	.640
			Weighted	2.794	1	2.794	.600	.446
			Deviation	5.145	1	5.145	1.105	.303
	Within Groups			121.096	26	4.658		
	Total			129.034	28			

Analysis Results for Hypothesis 2_0

There is a linear relationship between the airline traveler's purpose of travel and the constructs of airline service quality. Unlike the full data analysis, this pre-test hypothesis was examined using a linear contrast ANOVA as described in Norusis, (2005).

Table D2. SERVQUAL Descriptives

						95% Confidence Interval for Mean			
		N	Mean	Std. Deviation	Std. Error	Lower Bound	Upper Bound	Minimum	Maximum
Tangible	1	4	1.0625	.77392	.38696	-.1690	2.2940	.00	1.75
	2	17	1.2206	2.14673	.52066	.1168	2.3243	-4.50	6.00
	3	8	1.4375	1.80154	.63694	-.0686	2.9436	-.25	5.50
	Total	29	1.2586	1.87736	.34862	.5445	1.9727	-4.50	6.00
Reliability	1	4	1.7500	.71880	.35940	.6062	2.8938	1.20	2.80
	2	17	1.5059	2.52004	.61120	.2102	2.8016	-6.00	6.00
	3	8	1.8000	.95618	.33806	1.0006	2.5994	.20	3.40
	Total	29	1.6207	1.98303	.36824	.8664	2.3750	-6.00	6.00

Response	1	4	1.6250	.77728	.38864	.3882	2.8618	1.00	2.75
	2	17	1.1029	2.55878	.62059	-.2127	2.4185	-6.00	6.00
	3	8	2.1875	1.70477	.60273	.7623	3.6127	.00	5.25
	Total	29	1.4741	2.18287	.40535	.6438	2.3045	-6.00	6.00
Assurance	1	4	1.8750	.72169	.36084	.7266	3.0234	1.00	2.75
	2	17	.9853	2.44865	.59388	-.2737	2.2443	-6.00	6.00
	3	8	2.1250	1.74233	.61601	.6684	3.5816	-.75	5.25
	Total	29	1.4224	2.12773	.39511	.6131	2.2318	-6.00	6.00
Empathy	1	4	1.9500	.99833	.49917	.3614	3.5386	1.00	3.00
	2	17	1.3294	2.24047	.54339	.1775	2.4814	-4.80	6.00
	3	8	2.1250	1.59978	.56561	.7876	3.4624	-.60	4.40
	Total	29	1.6345	1.93765	.35981	.8974	2.3715	-4.80	6.00

Table D2. SERVQUAL Descriptives *continued*

						95% Confidence Interval for Mean			
		N	Mean	Std. Deviation	Std. Error	Lower Bound	Upper Bound	Minimum	Maximum
Image	1	4	1.6667	.95258	.47629	.1509	3.1824	.67	2.83
	2	17	1.5588	1.86706	.45283	.5989	2.5188	-.17	6.00
	3	8	1.1250	1.47129	.52018	-.1050	2.3550	-.67	4.33
	Total	29	1.4540	1.63536	.30368	.8320	2.0761	-.67	6.00
Tic_ Bags	1	4	1.1667	.57735	.28868	.2480	2.0854	.67	2.00
	2	17	1.6863	1.98771	.48209	.6643	2.7083	.00	6.00
	3	8	1.8333	2.03150	.71824	.1350	3.5317	-.33	5.00
	Total	29	1.6552	1.83546	.34084	.9570	2.3533	-.33	6.00
Svc Disrpt	1	4	1.1667	.57735	.28868	.2480	2.0854	.67	2.00
	2	17	2.0980	2.14335	.51984	.9960	3.2000	.00	7.00
	3	8	1.7083	1.36204	.48155	.5696	2.8470	.00	3.67
	Total	29	1.8621	1.79841	.33396	1.1780	2.5461	.00	7.00
Opera-tions	1	4	1.5000	.41633	.20817	.8375	2.1625	1.00	2.00
	2	17	1.7412	1.69376	.41080	.8703	2.6120	.00	6.00

	3	8	1.7000	2.04520	.72309	-.0098	3.4098	-.40	5.60
	Total	29	1.6966	1.64631	.30571	1.0703	2.3228	-.40	6.00
InFltAm	1	4	2.0357	.37571	.18785	1.4379	2.6335	1.71	2.57
en	2	17	2.3193	1.75221	.42497	1.4184	3.2202	-.29	6.00
	3	8	1.7679	2.40255	.84943	-.2407	3.7764	-2.00	5.43
	Total	29	2.1281	1.80917	.33595	1.4399	2.8163	-2.00	6.00
FltConns	1	4	1.0000	.81650	.40825	-.2992	2.2992	.00	2.00
	2	17	1.0471	2.45003	.59422	-.2126	2.3067	-5.60	6.00
	3	8	1.6500	1.59553	.56410	.3161	2.9839	.00	5.00
	Total	29	1.2069	2.05321	.38127	.4259	1.9879	-5.60	6.00

An ANOVA assumes: independent random samples from each population, normally distributed populations, and equality of variance. The collection process assures random samples. Each risk construct's Q-Q plot displays the normality tests. The Q-Q plots tend to cluster about the normal line, albeit somewhat weakly, and thus support that the data are normal. As noted by Norusis (2005) the normality conditions need only weakly apply.

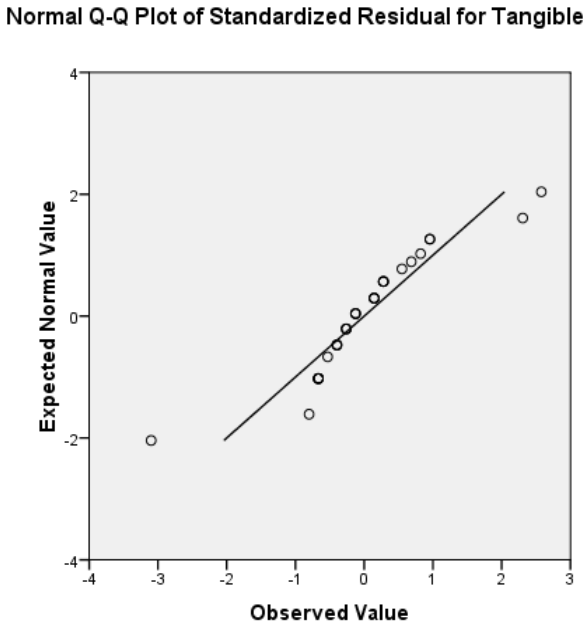

Figure D1. Normal Q-Q plot of standardized residual for tangible. Overall the values tend to cluster about the normal line.

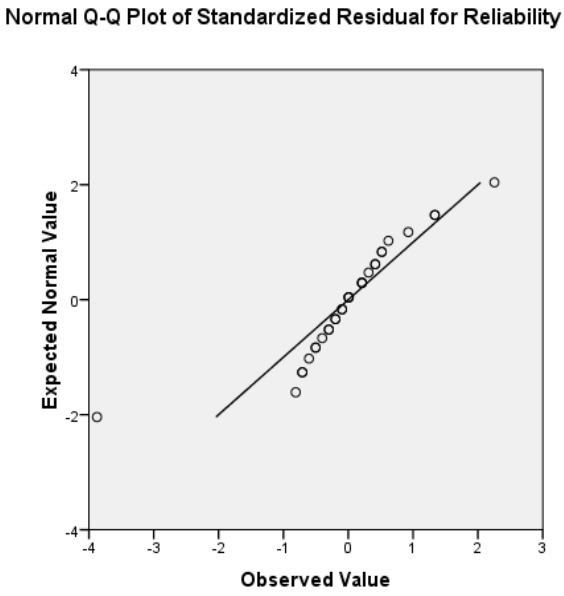

Figure D2. Normal Q-Q plot of standardized residual for reliability. Overall the values tend to cluster about the normal line.

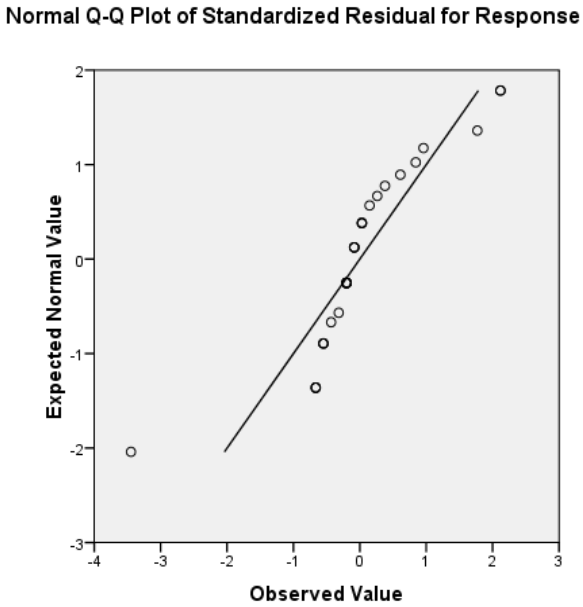

Figure D3. Normal Q-Q plot of standardized residual for response. Overall the values tend to cluster about the normal line.

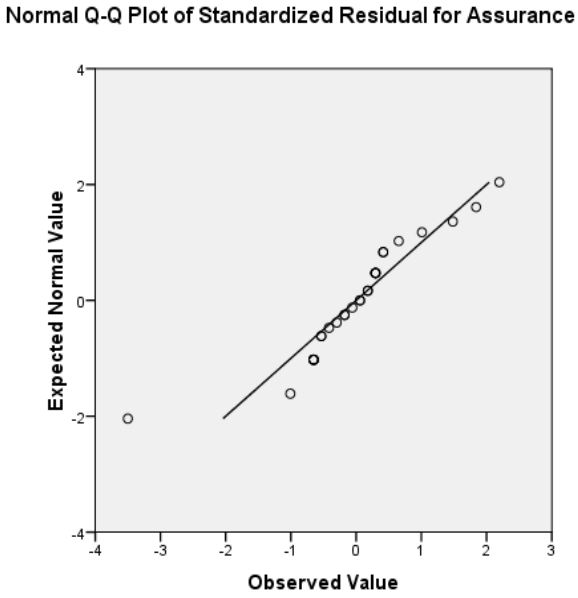

Figure D4. Normal Q-Q plot of standardized residual for assurance. Overall the values tend to cluster about the normal line.

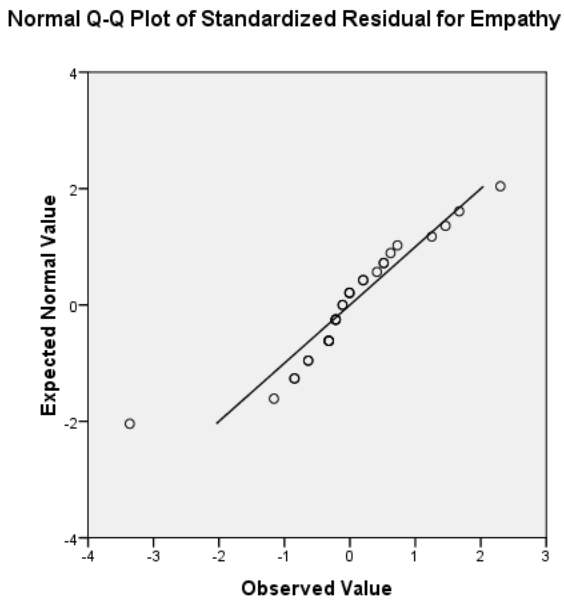

Figure D5. Normal Q-Q plot of standardized residual for empathy. Overall the values tend to cluster about the normal line.

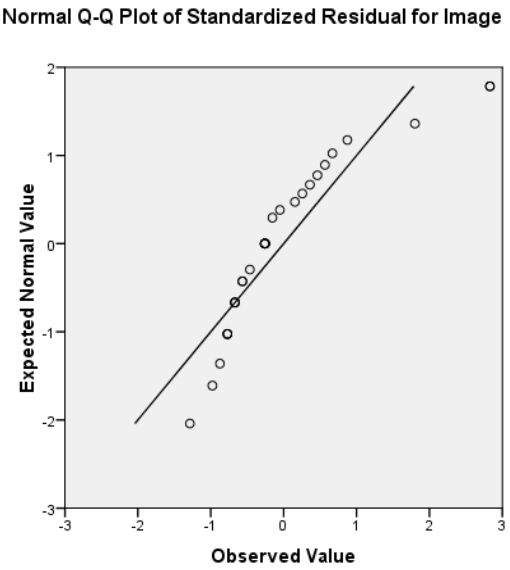

Figure D6. Normal Q-Q plot of standardized residual for image. Overall the values tend to cluster about the normal line.

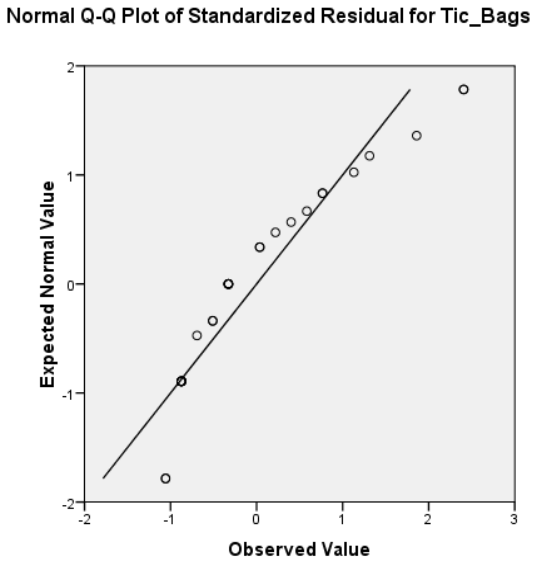

Figure D7. Normal Q-Q plot of standardized residual for tickets and baggage. Overall the values tend to cluster about the normal line.

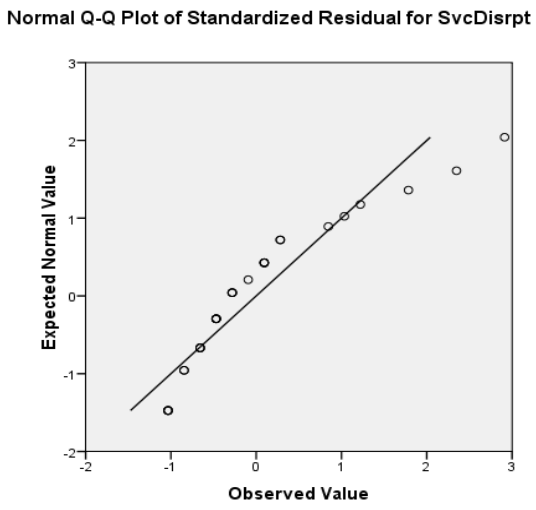

Figure D8. Normal Q-Q plot of standardized residual for service disruption. Overall the values tend to cluster about the normal line.

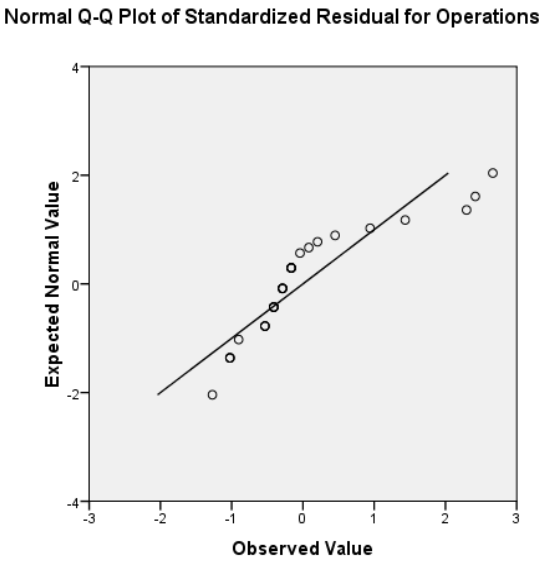

Figure D9. Normal Q-Q plot of standardized residual for operations. Overall the values tend to cluster about the normal line.

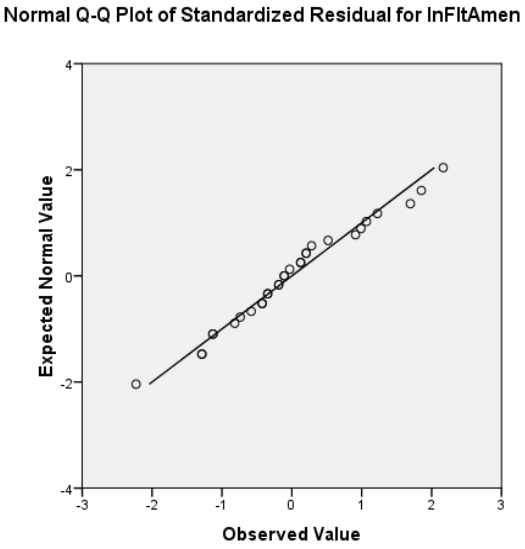

Figure D10. Normal Q-Q plot of standardized residual for flight amenities. Overall the values tend to cluster about the normal line.

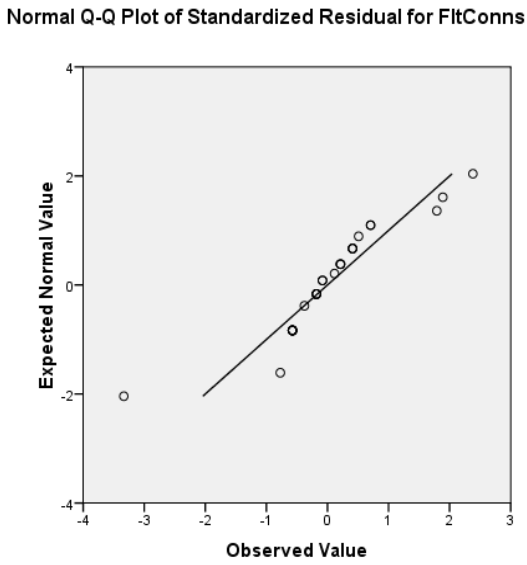

Figure D11. Normal Q-Q plot of standardized residual for flight connections. Overall the values tend to cluster sufficiently about the normal line.

As observed in the Homogeneity of Variance Table 39, each Sig is > .05. That indicates that for this data, the null hypothesis of group equal variance is not rejected. In other words, the tests established equal variance.

Table D3. SERVQUAL Test of Homogeneity of Variances

	Levene Statistic	df1	df2	Sig.
Tangible	.725	2	26	.494
Reliability	1.518	2	26	.238
Response	.441	2	26	.648
Assurance	.737	2	26	.489
Empathy	.185	2	26	.833
Image	.657	2	26	.527
Tic_Bags	2.288	2	26	.122
SvcDisrpt	2.398	2	26	.111
Operations	1.693	2	26	.204
InFltAmen	2.951	2	26	.070
FltConns	.972	2	26	.392

The data meets the necessary assumptions of random, normal, and equality of variance. Thus allowing an ANOVA. The question addressed is: determine whether a linear relationship exists between business, non-business, or equally business/non-business travelers and the constructs associated with service quality. The SERVQUAL constructs consist of tangible, reliability, response, assurance, empathy, image, ticketing/baggage, service disruption, operations, amenities, and connections.

The null hypothesis is that there is a linear relationship between the airline traveler's purpose of travel and the constructs of service quality. Variables are dependent constructs – tangible, reliability, response, assurance, empathy, image, ticketing/baggage, service disruption, operations, amenities, and connections.

Results: because all of the ANOVA Sig's in Table 40, particularly the linear terms between the SERVQUAL variables below are > .05 the null hypothesis is accepted and asserts that Hypothesis 2_0 is supported. In other words, there is a linear relationship between the purpose of travel and service quality in the pre-test data.

Table D4. ANOVA between SERVQUAL Variables

				Sum of Squares	df	Mean Square	F	Sig.
Tangible	Between Groups	(Combined)		.434	2	.217	.057	.944
		Linear Term	Unweighted	.375	1	.375	.099	.755
			Weighted	.429	1	.429	.113	.739
			Deviation	.006	1	.006	.002	.969
	Within Groups			98.251	26	3.779		
	Total			98.685	28			
Reliability	Between Groups	(Combined)		.548	2	.274	.065	.937
		Linear Term	Unweighted	.007	1	.007	.002	.969
			Weighted	.073	1	.073	.017	.896
			Deviation	.475	1	.475	.113	.740
	Within Groups			109.559	26	4.214		
	Total			110.108	28			
Response	Between Groups	(Combined)		6.505	2	3.252	.666	.522
		Linear Term	Unweighted	.844	1	.844	.173	.681
			Weighted	2.275	1	2.275	.466	.501
			Deviation	4.229	1	4.229	.866	.360
	Within Groups			126.914	26	4.881		
	Total			133.418	28			
Assurance	Between Groups	(Combined)		8.017	2	4.008	.878	.428
		Linear Term	Unweighted	.167	1	.167	.036	.850
			Weighted	1.268	1	1.268	.278	.603
			Deviation	6.748	1	6.748	1.478	.235
	Within Groups			118.746	26	4.567		
	Total			126.763	28			

Table D4. ANOVA between SERVQUAL Variables *continued*

				Sum of Squares	df	Mean Square	F	Sig.
Empathy	Between Groups	(Combined)		3.905	2	1.953	.502	.611
		Linear Term	Unweighted	.082	1	.082	.021	.886
			Weighted	.619	1	.619	.159	.693
			Deviation	3.286	1	3.286	.844	.367
	Within Groups			101.220	26	3.893		
	Total			105.126	28			
Image	Between Groups	(Combined)		1.234	2	.617	.218	.806
		Linear Term	Unweighted	.782	1	.782	.276	.604
			Weighted	1.060	1	1.060	.374	.546
			Deviation	.174	1	.174	.061	.806
	Within Groups			73.650	26	2.833		
	Total			74.883	28			
Tic_Bags	Between Groups	(Combined)		1.225	2	.612	.171	.844
		Linear Term	Unweighted	1.185	1	1.185	.331	.570
			Weighted	.998	1	.998	.279	.602
			Deviation	.227	1	.227	.064	.803
	Within Groups			93.105	26	3.581		
	Total			94.330	28			
SvcDisrpt	Between Groups	(Combined)		3.070	2	1.535	.456	.639
		Linear Term	Unweighted	.782	1	.782	.233	.634
			Weighted	.210	1	.210	.063	.805
			Deviation	2.860	1	2.860	.850	.365
	Within Groups			87.489	26	3.365		
	Total			90.559	28			

Table D4. ANOVA between SERVQUAL Variables *continued*

				Sum of Squares	df	Mean Square	F	Sig.
Operations	Between Groups	(Combined)		.188	2	.094	.032	.968
		Linear Term	Unweighted	.107	1	.107	.037	.850
			Weighted	.058	1	.058	.020	.889
			Deviation	.131	1	.131	.045	.834
	Within Groups			75.701	26	2.912		
	Total			75.890	28			
InFltAmen	Between Groups	(Combined)		1.694	2	.847	.245	.785
		Linear Term	Unweighted	.191	1	.191	.055	.816
			Weighted	.551	1	.551	.159	.693
			Deviation	1.143	1	1.143	.330	.570
	Within Groups			89.953	26	3.460		
	Total			91.647	28			
FltConns	Between Groups	(Combined)		2.176	2	1.088	.244	.785
		Linear Term	Unweighted	1.127	1	1.127	.253	.619
			Weighted	1.670	1	1.670	.375	.546
			Deviation	.506	1	.506	.114	.739
	Within Groups			115.862	26	4.456		
	Total			118.039	28			

Hypothesis 3 for 30 Sample Data pre-test

In the pre-test of 30 respondents, the traveler types – business, non-business, and equally business and non-business - for the 30 data points yielded too low a count to justify processing all types. As a result, analysis was conducted of the overall traveler category.

H3o states that there is no linear relationship between perceived risk constructs and airline service quality dimensions for a random sample of airline travelers patronizing commercial airlines in the U.S.

Multiple times significant correlations at both the .05 and .01 level were found between the Risk and SERVQUAL constructs for all travelers but they were negative. This supports that H3o is false. In other words, linear relationships existed between SERVQUAL and Risk for all travelers and as SERVQUAL increased Risk decreased.

Based on the ability to perform analysis of the 30 sample size pre-test, the research instruments were deemed valid.

APPENDIX E. HYPOTHESIS 1

Table E1. Test of Homogeneity of Variances

Risk			
Levene Statistic	df1	df2	Sig.
.049	2	230	.952

Table E2. Tests of Normality

	Kolmogorov-Smirnov[a]		Shapiro-Wilk		
	Statistic	Sig.	Statistic	df	Sig.
	.096	.000	.960	233	.000

Note: a. Lilliefors Significance Correction

APPENDIX F. HYPOTHESIS 2

Table F1. Descriptives of the Five Dimensions of SERVQUAL

						95% Confidence Interval for Mean			
		N	Mean	Std. Deviation	Std. Error	Lower Bound	Upper Bound	Minimum	Maximum
Tangibles	1	69	.5821	.75792	.09124	.4001	.7642	.00	3.75
	2	82	.7246	.77343	.08541	.5547	.8945	.00	3.50
	3	82	.8201	.90119	.09952	.6221	1.0181	.00	3.75
	Total	233	.7160	.81852	.05362	.6104	.8217	.00	3.75
Reliability	1	69	.76	.928	.112	.54	.98	0	3
	2	82	.83	.897	.099	.63	1.02	0	3
	3	82	1.23	1.270	.140	.95	1.51	0	6
	Total	233	.95	1.068	.070	.81	1.09	0	6
Responsive - ness	1	69	.806	1.0063	.1211	.564	1.047	.0	4.0
	2	82	.704	.8706	.0961	.513	.896	.0	4.5
	3	82	1.223	1.2567	.1388	.946	1.499	.0	6.0
	Total	233	.917	1.0796	.0707	.777	1.056	.0	6.0
Assurance	1	69	15.08	120.195	14.470	-13.80	43.95	0	999
	2	82	.65	.784	.087	.47	.82	0	4
	3	82	.99	1.008	.111	.77	1.21	0	4
	Total	233	5.04	65.403	4.285	-3.40	13.48	0	999
Empathy	1	69	.76	.965	.116	.53	.99	0	4
	2	82	.75	.975	.108	.54	.97	0	5
	3	82	1.17	1.171	.129	.91	1.42	0	5
	Total	233	.90	1.060	.069	.76	1.04	0	5

Table F2. Box's Test of Equality of Covariance Matrices[a]

Box's M	1621.129
F	52.344
df1	30
df2	159091.020
Sig.	.000

Note: Tests the null hypothesis that the observed covariance matrices of the dependent variables are equal across groups.

a. Design: Intercept + PURPOSE

Table F3. Tests of Normality

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Tangibles	.191	233	.000	.826	233	.000
Reliability	.187	233	.000	.840	233	.000
Responsiveness	.198	233	.000	.817	233	.000
Assurance	.501	233	.000	.044	233	.000
Empathy	.198	233	.000	.803	233	.000

Note. a. Lilliefors Significance Correction