

Sorenson Best Paper Award Recipient
**CROSS-CULTURAL PERSPECTIVES OF SERVICE
QUALITY AND RISK IN AIR TRANSPORTATION**

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ABSTRACT

This study compares U.S. and Korean customers in terms of their perceptions of airline service quality based on SERVPERF and industry-based measures, as well as their perceptions of risks involved in the airline choice. SERVPERF is a set of multi-dimensional measures of customer evaluations of service quality. The results indicate that (a) U.S. passengers are generally more satisfied with their airline service than Korean customers on most of the SERVPERF dimensions; (b) Koreans are generally more satisfied with the bumping procedures whereas U.S. participants feel more satisfied with the airline's baggage handling, operations/safety, and connections; and (c) U.S. participants perceive higher levels of performance and financial risks whereas Koreans feel greater social risk in choosing an airline. This study also examines the SERVPERF, industry-based measures, and perceived risk in predicting customer satisfaction with, and intention to repatronize the airline. The results suggest that U.S. customers consider service reliability, in-flight comfort, and connections as the key factors determining satisfaction with airline service whereas Korean passengers generally regard reliability, assurance, and risk factors as predictors of satisfaction. The determining factors of customer intention to repatronize the airline are reliability and empathy for U.S., and reliability and overall risk for Korean customers. The study demonstrates the applicability of SERVPERF as a cross-cultural tool and indicates the importance of perceived risk in cross-cultural studies.

INTRODUCTION

Over the past two decades, the service industries in the U.S. and elsewhere in the world have grown at a phenomenal rate. In 1980, service industries worldwide were valued at \$350 billion, accounting for 20 percent of all world trade; by 1992, that figure had nearly tripled to \$1,000 billion. The service sector now accounts for 58 percent of worldwide gross national product (Bateson & Hoffman, 1999). Consequently, services are attracting increasing attention from academicians and practitioners alike. The proliferation of services not only provides business opportunities, but also poses high levels of competitive threats for service marketers. In fact, many researchers and marketers have focused their attention on customer evaluations of services in an effort to find ways to improve service quality (see Fisk, Brown, & Bitner, 1993 for a review of the literature).

However, despite the considerable amount of research under the rubric of service quality that has accumulated over the years, few studies to date have examined customer perceptions of service quality in an international or a cross-cultural setting. This issue is of paramount concern to international service marketers because the perceived service quality often reflects customers' levels of satisfaction with and intention to repatronize the services. If service quality perceptions are standardized across cultures, firms may choose to control costs by standardizing operations and marketing strategies. Assessment of quality in service industries, unlike traditional physical product industries, is not a function of statistical measures of quality including physical defects or managerial judgement.

Rather, it is a function of customers' expectations and perceptions about the services (Bateson & Hoffman, 1999; Lovelock, 1984; Parasuraman, Zeithaml, & Berry, 1985).

The purpose of this study was twofold: (a) to examine customer perceptions of services and risk of services provided by commercial airline companies in a cross-cultural setting; and (b) to assess the effectiveness of existing measures of service quality and risk in predicting customer satisfaction and intention to repatronize the services. Since airline services are used worldwide, they offer an excellent opportunity for this type of cross-cultural research. This study compares U.S. and Korean customers in terms of their service quality perceptions and repatronage intentions. For this purpose, the study uses the SERVPERF scale, industry-based measures, and various types of perceived risks. SERVPERF is an instrument developed by Cronin and Taylor (1992), which is now widely used in measuring customer evaluations of service quality. In an effort to incorporate the high involvement/high risk nature of airline services, the study also examines the predictive ability of perceived risks. These measures are further explained later.

SERVICE QUALITY MEASUREMENT IN THE AIRLINE INDUSTRY

An overview of the competitive situation of the airline industries in the U.S. and Korea suggests that measurement and management of service quality is the fundamental issue for the survival and growth of airline companies. This section describes those measures developed in past literature, which were used in the present study.

Service Performance Measures

While carriers experimented with service competition, similar experiments were occurring in the academic world. Parasuraman, Berry, & Zeithaml, 1991; Parasuraman, Zeithaml, & Berry, 1985, 1988) have developed a service quality measure designated SERVQUAL which states that the customer's assessment of overall service quality is determined by the degree and direction of the gap between their expectations and perceptions of actual performance levels. They have also identified five dimensions underlying overall service quality: tangibles, reliability, responsiveness, assurance, and empathy. They proposed that perceived service quality could be estimated by calculating the difference between expectations and perceptions of actual service performance. Since the SERVQUAL scale was developed, it has been widely used to measure perceived service quality in various service industries such as health care,

financial institutions, and life insurance (e.g., Crompton & Mackay, 1989; Johnson, Dotson, & Dunlap, 1988; Webster, 1989; Woodside, Frey, & Daly, 1989).

Initial publications on airline service quality appeared in 1988 (Gourdin, 1988). The first direct application of the service quality gap model was presented in 1991 (Fick & Ritchie, 1991; Gourdin & Kloppenborg, 1991). Fick and Ritchie used the SERVQUAL scale to measure perceived service quality within several service industries including the airline industry. However, 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. In order to find out the relative importance of individual SERVQUAL items, they could have performed further analysis of their data on the basis of multivariate statistical techniques.

The SERVQUAL scale has also been extensively used in Korea to measure the quality of services provided by retail stores (Lee & Lee, 1997), telecommunication companies (Oh, 1995), and airline companies (Kim, 1997). For instance, Kim used the scale to measure customer evaluations of airline service quality. She found that reliability, empathy, and tangibles had the most significant impact on customer perceptions of service quality. The current study extends her research framework and includes measures that are specific to the airline industry.

However, the SERVQUAL scale has been criticized in terms of its validity and reliability. It has also been pointed out that including all 44 items (22 items of service expectations and a duplicate 22 items of service performance) in one study often makes the survey task too onerous for respondents (Buttle, 1996). Thus, it has been suggested that the 22 items of perceptions of service performance would be sufficient in measuring service quality (Carman, 1990; Vandamme & Leunis, 1993). Cronin and Taylor (1992, 1994) have empirically demonstrated that the measures of service performance, or so-called SERVPERF, perform better than SERVQUAL which includes expectations as well as performance. They have shown that SERVPERF explains more of the variation in the global measure of service quality in all of the four service industries examined: banks, pest control, dry cleaning, and fast food services. Therefore, this study used SERVPERF in measuring the airline service quality (see Appendix A for the SERVPERF dimensions and measures).

Industry-based Measures

While SERVPERF has proven applicable and useful in measuring the airline service quality, it has certain limitations. One of the limitations concerns the generic nature of the scale (Ostrowski, O'Brien, & Gordon,

1993). Although the scale is so generic that it can be applied in measuring perceived quality of various services, it fails to capture industry-specific dimensions underlying the quality perceptions. Therefore, the current study incorporates those industry-based measures in determining airline service quality.

The initial tools of service quality measurement in the airline industry were really economic-based, pre-deregulatory tools that had been developed by the Civil Aeronautics Board (Douglas & Miller, 1974; Jordan, 1970). Service quality assessments from the perspective of the airline consumer first appeared in the doctoral dissertation work by Kearney (1986). It examined service quality from the perspective of industry-based economic and marketing measures (see also Kloppenborg & Gourdin, 1992, for these industry-based measures).

Gourdin and Kloppenborg (1991) used an intriguing approach to sampling consumers in addition to industry and government transportation officials to develop a set of criteria for expected quality. They found significant statistical differences between passengers and management on a number of essential variables, most of which are industry-based service quality measures mentioned above.

Several teams of researchers compiled the industry-based measures of airline service quality and compared them with SERVQUAL in terms of their ability to predict customer satisfaction and intention to repatronize (Cunningham & Brand, 1989; Lee, Cunningham, & Wadsworth, 1993; Young, Cunningham & Lee, 1994a, 1994b; Young, Cunningham, Lee & Wadsworth, 1992). They found that SERVQUAL measures were as strong as the industry derived measures in predicting perceived quality and were the only significant predictors of intention to repatronize. The present study includes and uses the industry-based measures that they put together (see Appendix B for the industry-based dimensions and their measures).

Risk Perceptions

Another factor that pertains to the customer evaluation of the airline service quality is perceived risk in selecting an airline. Perceived risk has been widely dealt with in past literature since it accompanies all purchases to varying degrees and influences buying behavior (Bettman, 1973; Cox, 1967; Chaudhuri, 1997; Cunningham, 1967; Dowling & Staelin, 1994; Mitchell, 1999). Past research suggests that consumers generally feel a higher level of risk when purchasing a service than when buying a manufactured product since services are basically intangible and difficult to test before purchase (Murray, 1991; Zeithaml, 1981). A study by 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.

Since 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; Sonmez & Graefe, 1998). Although researchers have not yet examined or measured perceived risk in the context of airline selections, the existing evidence implies its potentially significant influence on evaluations of airline service quality (Roehl & Fesenmaier, 1992).

Another interesting issue that warrants a close investigation is the potential differences in consumer risk perceptions across cultures. In the product domain, a piece of evidence suggests that American and Mexican consumers differ in terms of the level of perceived risk involved in making purchases; on average, Mexicans perceive a lower level of risk in brand selection, compared to Americans (Hoover, Green, & Saegert, 1978). Another study indicates that Americans and Germans are more risk-averse than Chinese in reacting to financial investment options (Weber & Hsee, 1998). Thus, it is proposed that perceived risk can be used to analyze consumer behavior patterns in different cultures (Verhage, Yavas, & Green, 1991). Such cross-cultural differences should have strong implications for international airlines and are examined in this study.

Past literature suggests that perceived risk is a multi-dimensional construct (Kaplan, Szybillo, & Jacoby, 1974; Roselius, 1971). Therefore, in this study, overall perceived risk was measured as well as perceptions of five risk dimensions: financial, performance, physical, psychological, and social risks (Murray & Schlacter, 1990; Roehl & Fesenmaier, 1992). The purpose of including such measures of individual dimensions was to examine cross-cultural differences on each risk dimension and to determine each one's relative impact on overall service quality and intention to repatronize.

RESEARCH METHOD

Questionnaire Design

The survey questionnaire consisted of three sections. Questions in the first section asked respondents to evaluate the quality of services provided by the airline company that they had used most recently. Perceived service quality or overall satisfaction was measured through the question, "Overall, I am very satisfied with the airline," on a 7-point Likert scale ranging from "strongly disagree" to "strongly agree." Behavioral intention to repatronize the airline was measured through the question, "I will definitely use the airline again the next time I fly" on the same scale. Perceived quality of individual service aspects was also measured by the SERVPERF items

using the same 7-point scales. The items of SERVPERF (Cronin & Taylor, 1992, 1994) based on the revised version of SERVQUAL (Parasuraman, *et al.*, 1991) were reconstructed to be suitable to measure airline services.

The second section included industry-based measures described earlier. The last section of the questionnaire dealt with behavioral and demographic characteristics of respondents. Specifically, this section involved questions on (a) frequency of air travel; (b) perception of risk involved in air travel; and (c) demographics (e.g., sex, age, income).

In developing the questionnaire and collecting data, this study followed the guidelines for conducting international marketing research, as developed and proposed by Douglas and Craig (1983) and Malhotra, Agarwal, and Peterson (1996). To ensure the equivalence of the research instrument used in two different countries, this study adapted the specific procedure suggested in the literature (Brislin, 1970; Brislin, Lonner, & Thorndike, 1973; Triandis, 1976) and used in Calantone, Schmidt, and Song (1996), which involved double translation with de-centering. Specifically, four bilinguals, who were fluent in English and Korean, participated in the process. They earned their undergraduate degrees from major U.S. universities and were enrolled in a graduate program at a major Korean university at the time this study was conducted. Two of them prepared a Korean translation of the English version of the questionnaire. Problems and ambiguities in the process of translation were discussed with one of the authors. Subsequently, this questionnaire was reverse translated into English by the other two bilinguals who did not see the original English version. Then, based on the comparison between the original and the reverse translated English versions, adjustments were made to the Korean questionnaire. It was believed that the equivalence of the two versions of the questionnaire, English and Korean, was ensured throughout the procedure.

Sampling and Data Collection

Data from both the U.S. and Korea were collected in surveys of business professionals attending evening MBA courses. In the U.S., before the main study was conducted, a pilot test was performed on a small scale in order to make sure that the questions were read and understood as intended. The questionnaire was then administered to a random sample taken from a student population of an evening MBA program at a major metropolitan university. A total of 105 respondents participated in the survey, yielding 105 usable responses. The same procedure was performed in Korea in an effort to ensure the comparability of data collected in the two different countries. A total of 145 respondents participated in the survey, yielding 143 usable responses.

Both the Korean and U.S. MBA students were full-time working professionals who, in many cases, traveled as part of their responsibilities. As such, they are broadly representative of typical airline customers. A pilot test showed that most of the students were regular users and many of them were heavy users of air travel services.

ANALYSIS AND RESULTS

Sample Characteristics

The data was coded and tabulated in preparation for analysis. Because the data was obtained from student samples, descriptive analyses were performed to analyze the make-up of the samples. Table 1 shows the demographic profile of the respondents. The Korean samples tended to be

Table 1. Sample Characteristics of Respondents

Variable	Overall (n = 248)	U.S. (n = 105)	Korea (n = 143)
	<i>percent</i>		
Sex			
Male	69	52	80
Female	31	48	20
Age			
Under 30	32	40	26
30-39	55	45	63
Over 39	13	15	11
Marital Status			
Single	32	37	29
Married	62	51	70
Other	6	12	1
Ethnic Background			
White	34	83	0
Asian	62	8	99
Other	4	9	1
Income			
Under \$30K	18	19	18
\$30K-\$40K	20	17	22
\$40K-\$50K	20	18	21
\$50K-\$60K	17	12	19
\$60K-\$70K	10	15	7
Over \$70K	15	9	13
		<i>number</i>	
Total Airline Trips (Last Year)	6.49	5.50	7.21
Business Trips (Last Year)	4.36	3.32	5.13

more male, younger, more often married, and more homogeneous in terms of race and ethnic background.

Although there were differences between the two samples in terms of some demographic characteristics, there were similarities in other characteristics. Specifically, the incomes were similar for the two groups. The samples were relatively affluent by U.S. and Korean standards; 54% of the U.S. and 60% of the Korean sample had annual incomes greater than \$40,000. More importantly, investigation of the respondents' travel behavior revealed that individuals in both samples were extensive users of airline services. On average, the U.S. sample individual made 5.50 airline trips (of which, 3.32 were business trips) and the Korean counterpart made 7.21 trips (5.13 business trips) in the last 12 months. Based on the results, we believe that the respondents represent a group of people who travel by air sufficiently often to be familiar with airline services. Thus, these individuals must have formed opinions and perceptions about airline services and quality based on their actual air travel experiences.

Measure Validation

The next step of the analysis dealt with how well the SERVPERF measures exhibited reliability when used in an airline services setting in the U.S. and Korea. Individual measures were subjected to reliability analysis in accordance with their predicted dimensions. Based on the analysis using coefficient alpha (Cronbach, 1951), all dimensions showed acceptable reliability; the alpha values of all the constructs were either close to or greater than .7, the threshold Nunnally (1978) recommended for basic research (see Appendix A for Cronbach's alphas of the dimensions). Therefore, index measures of the five dimensions of SERVPERF were constructed by taking the mean of the set of measures for that dimension. These indices were used in the regression analysis, which will be explained later.

In their previous studies, the authors had no a priori dimensions for the industry-derived measures. Therefore, the measures were subjected to a factor analysis to investigate underlying dimensions. From the factor analysis results, five dimensions were identified and described as (a) baggage handling; (b) bumping procedures; (c) operations and safety; (d) in-flight comfort; and (e) connections. The measures were also subjected to reliability analysis using Cronbach's coefficient alpha. As expected, all dimensions also showed acceptable reliability (see Appendix B). Thus, the simple mean ratings on the measures were used again in the subsequent regression analysis.

SERVPERF Measures

The U.S. and Korean respondents were asked to evaluate the quality of services provided by the airline that they had flown on most recently utilizing the overall measures and various SERVPERF scale items. The results are summarized in Table 2.

Table 2. SERVPERF Measures: Results of the t-Tests

Variable ^a	U.S.	Korea	t-value	p-value
	<i>mean</i>			
<i>Overall</i>				
I am very satisfied with the airline.	4.94	3.96	6.12	.001
I will definitely use the airline again.	5.09	4.48	3.11	.01
<i>Tangibles</i>				
The airline has up-to-date equipment.	4.45	4.25	1.22	.23
The airline's physical facilities are visually appealing.	4.50	4.17	2.03	.04
Employees are well dressed and neat.	5.50	5.13	2.60	.01
Physical facilities are kept up.	4.69	4.27	2.83	.01
<i>Reliability</i>				
The airline keeps promises.	4.32	4.20	.69	.49
The airline is sympathetic and reassuring.	4.05	4.23	-1.01	.31
The airline is dependable.	4.90	4.51	2.43	.02
The airline keeps time.	4.71	4.68	.15	.88
The airline keeps its records accurately.	4.85	4.35	3.12	.01
<i>Responsiveness</i>				
The airline tells the customers exactly when the services will be performed.	4.43	4.20	1.16	.25
You receive prompt service from the airline.	4.25	4.01	1.32	.19
Employees are always willing to help customers.	4.36	3.81	2.92	.01
Employees respond to customer requests promptly.	4.27	3.76	2.63	.01
<i>Assurance</i>				
You can trust employees.	4.84	4.38	3.08	.01
You feel safe in your transaction with employees.	4.89	4.25	3.87	.001
Employees are polite.	5.13	4.56	3.31	.001
Employees get adequate support.	4.24	4.21	.20	.84
<i>Empathy</i>				
The airline gives you individual attention.	4.22	3.62	3.17	.01
Employees give you personal attention.	4.42	3.40	5.46	.001
Employees know what your needs are.	4.49	3.91	3.16	.01
The airline has your best interest at heart.	4.38	3.68	3.79	.001
The airline has convenient operating hours.	4.39	3.19	6.60	.001

^a Measured on a 7-point Likert scale where 1 = "strongly disagree" and 7 = "strongly agree"

Individuals in the U.S. sample highly agreed with many of the statements of the measures. Some of the most highly rated factors were “Employees are well dressed and neat” (mean = 5.50), “The airline is dependable” (mean = 4.90), “I feel safe in my transaction with employees” (mean = 4.89), and “Employees are polite” (mean = 5.13). The Korean sample also rated the airline highly on such statements as “Employees are well dressed and neat” (mean = 5.13), “The airline is dependable” (mean = 4.51), “The airline provides services at the time it promises to do so” (mean = 4.68), and “Employees are polite” (mean = 4.56). However, on many of the measures, including the overall satisfaction/behavioral intention measures, the average ratings of the U.S. sample were significantly higher than those of the Korean sample (see Table 2 for the results of the *t*-tests). In particular, there was an interesting contrast between the samples on the empathy dimension. For the five statements measuring this service dimension, the U.S. sample evaluated their airlines more favorably than the Koreans. For instance, the U.S. sample’s level of agreement with the statement, “Employees give you personal attention” (mean = 4.42) was significantly higher than that of the Korean sample’s (mean = 3.40, $t = 5.46$, $p < .001$).

Industry-based Measures

The respondents were also asked to evaluate the airline service quality on the industry-based measures. The results are summarized in Table 3.

U.S. participants also tended to rate the airline service relatively high on those measures. For example, they rated highly the “airline safety” (mean = 5.48), “service differentiation between each class” (mean = 5.15), and the “right equipment for trips” (mean = 5.10). In addition, U.S. participants scored very high on the “amenities important to the comfort of passengers” (mean = 5.02). On the other hand, they rated other factors relatively low. For example, U.S. travelers stated that seating on U.S. airlines was not quite comfortable in terms of agreement with the “right layout of seats” (mean = 3.19), “wide seats” (mean = 3.30), and “enough room in the aisles” (mean = 3.30). From a negative perspective, they also stated that U.S. carriers placed too many seats inside an aircraft. The Korean sample offered some different perspectives especially regarding in-flight comfort. For example, they stated that their airline seats had good pitch (mean = 4.24), the layout of seats was just right (mean = 3.28), and food/beverage service was good (mean = 4.02).

Perhaps the most interesting results were produced from the *t*-tests (see Table 3). Some of the factors that were highly significant offer insight into the different perspectives of the U.S. and Korean samples. For example, Koreans, compared to U.S. participants, were relatively satisfied with

Table 3. Airline Industry-based Measures: Results of the *t*-Tests

<i>Variable^a</i>	<i>U.S.</i>	<i>Korea</i>	<i>t-value</i>	<i>p-value</i>
	<i>Mean</i>			
<i>Baggage Handling</i>				
Baggage handling is prompt and efficient.	4.88	4.01	4.45	.001
Airline inline agreements work well for the customer.	4.69	3.78	5.06	.001
Airline check-in is efficient.	4.78	4.13	3.56	.001
<i>Bumping Procedures</i>				
Airline bumping procedures are fair/convenient.	3.88	4.88	-5.14	.001
Bumping procedures provide adequate compensation.	4.28	3.14	6.07	.001
Information provided by airline at airport is adequate.	3.38	4.30	-4.97	.001
<i>Operations and Safety</i>				
Ticket and reservation procedures are adequate.	4.89	4.62	1.57	.12
Airline is safe.	5.48	4.36	6.76	.001
Airline selects the right equipment for trips.	5.10	4.47	4.20	.001
Amenities are important to the passengers.	5.02	3.90	6.08	.001
Airline distinguishes between classes through service.	5.15	5.41	-1.49	.14
<i>In-flight Comfort</i>				
Airline seats have good pitch.	3.75	4.24	-2.42	.02
Airline seats are wide enough.	3.30	2.08	2.33	.02
There is enough room in the isles.	3.30	3.08	1.04	.30
The layout of seats in aircraft is just right.	3.19	3.28	-.42	.68
Airline food and beverage service is good.	3.69	4.02	-1.74	.08
<i>Connections</i>				
Airline offers sufficient flight frequency.	4.82	4.06	4.31	.001
Airline offers flights at right times of the day and night.	4.72	3.77	5.75	.001
Airline correctly coordinates connections.	4.47	3.84	3.75	.001
Airline offers sufficient non-stop flights.	4.57	4.17	2.15	.03
Airline offers sufficient connecting flights.	4.61	4.01	3.60	.001

^a Measured on a 7-point Likert scale where 1 = "strongly disagree" and 7 = "strongly agree"

bumping procedures (means = 4.88 and 3.88, respectively, $t = -5.14$, $p < .001$) as well as the information provided by the airline at the airport (means = 4.30 and 3.38, respectively, $t = -4.97$, $p < .001$). On the other hand, U.S. participants were generally satisfied with their airline's baggage handling, safety/operations, and connections.

Risk Perceptions

As indicated in Table 4, respondents from both the U.S. and Korean samples evaluated the overall, financial, performance, physical, psychological, and social risks associated with choosing an airline.

Table 4. Risk Perceptions: Results of the *t*-Tests

<i>Variable</i> ^a	<i>U.S.</i>	<i>Korea</i>	<i>t-value</i>	<i>p-value</i>
	<i>Mean</i>			
Overall Risk	4.20	3.75	2.55	.01
Financial Risk	4.28	3.57	3.59	.001
Performance Risk	5.13	4.23	5.07	.001
Physical Risk	3.98	4.09	-.51	.61
Psychological Risk	4.11	4.32	-1.00	.32
Social Risk	2.34	2.79	-2.34	.02

^a Measured on a 7-point Likert scale where 1 = "no risk" and 7 = "high risk"

The U.S. respondents indicated that the primary sources of risks in choosing an airline were performance, financial, and psychological risks. The means for these types of risks were 5.13, 4.28, and 4.11, respectively. Respondents from the U.S. sample did not state that there was much social risk involved in choosing an airline. On the other hand, Korean respondents indicated that the highest sources of risk associated with choosing an airline were psychological, performance, and physical with means of 4.32, 4.23, and 4.09, respectively. Both of the samples indicated that there was minimal social risk in picking an airline (means = 2.34 for the U.S. sample and 2.79 for the Korean sample).

When the responses of the U.S. sample were compared to those of the Korean sample, there were highly significant differences in performance and financial risk with *t*-values of 5.07 and 3.59 and significant levels of $p < .001$. There was also a difference in the evaluation of overall risk with a *t*-value of 2.55 and significance of $p < .01$. Surprisingly, Koreans, compared to U.S. participants, stated that there was a greater level of social risk in choosing an airline ($t = -2.34$, $p < .02$). Physical and psychological risks were not significantly different, although Koreans indicated that there were higher physical and psychological risks.

Regression Analysis

A set of stepwise regression analyses was performed for each sample to determine differential effects of SERVPERF, industry-based measures and risk variables on customer satisfaction with airline services. The results are summarized in Table 5.

Table 5. Impact of SERVPERF, Industry Indices, and Risk Factors On Customer Satisfaction: Results of the Stepwise Regression Analysis

Variable	U.S.		Korean	
	Standardized Coefficient	t-value	Standardized Coefficient	t-value
<i>SERVPERF Measure</i>				
Tangibles	—	—	—	—
Reliability	.36	4.34***	.56	7.48***
Responsiveness	—	—	—	—
Assurance	—	—	.18	2.41*
Empathy	—	—	—	—
<i>Industry-based Measure</i>				
Baggage Handling	—	—	—	—
Bumping Procedure	—	—	—	—
Operations and Safety	—	—	—	—
In-flight Comfort	.22	2.65**	—	—
Connections	.37	4.54***	—	—
<i>Perceived Risk</i>				
Overall Risk	—	—	—	—
Financial Risk	—	—	—	—
Performance Risk	—	—	-.14	-1.83
Physical Risk	—	—	.21	3.45***
Psychological Risk	—	—	-.15	-2.08*
Social Risk	—	—	—	—
		$R^2 = .54, F = 33.71***$		$R^2 = .63, F = 44.52***$

* $p < .05$, ** $p < .01$, *** $p < .001$

The overall regression models were highly significant ($R^2 = .54$, $F = 33.71$, $p < .001$ for the U.S. sample; $R^2 = .63$, $F = 44.52$, $p < .001$ for the Korean sample). In the U.S. sample, service reliability, one of the SERVPERF dimensions, produced a standardized coefficient of .36 and a t -value of 4.34, which was significant at $p < .001$. In the case of the Korean sample, two independent variables, reliability and assurance, were significant predictors of customer satisfaction. Reliability produced a standardized coefficient of .56 and a t -value of 7.48 which was significant at $p < .001$. In addition, assurance also proved to be a significant predictor of customer satisfaction, with a standardized coefficient of .18 and a t -value of 2.41 which was significant at $p < .05$. The results were consistent with most of the cross-cultural studies that have sought to employ SERVPERF variables as predictors of customer satisfaction. In fact, the interesting studies are those that failed to demonstrate that reliability was a significant predictor. The only key change in this particular result was that assurance also proved a significant independent variable.

The regression analysis for the U.S. sample also indicated that airline connection was a significant independent variable. The standardized coefficient produced by connections was .37 and the t -value was 4.54 which was significant at $p < .001$. In addition, in-flight comfort was significant with a coefficient of .22 and the t -value was 2.65 which was significant at $p < .01$. However, the Korean model for customer satisfaction demonstrated some characteristics which were substantially different than those in the model produced by the U.S. sample. Specifically, in the Korean model, customer satisfaction was successfully predicted by three risk variables. These variables were performance risk ($\beta = -.14$, $t = -1.83$, $p < .07$), physical risk ($\beta = .21$, $t = 3.45$, $p < .001$), and psychological risk ($\beta = -.15$, $t = -2.08$, $p < .05$). Perhaps the most intriguing finding was that physical risk had a positive coefficient on customer satisfaction, holding reliability and performance risk constant. Indeed, although physical risk was negatively associated with satisfaction on the bivariate correlation matrix, when reliability was entered into the model, the coefficient for physical risk became positive. When performance risk was added to the model, the coefficient for physical became positive and significant.

The current study seems to suggest some interesting cultural connections between satisfaction and physical risk. In particular, the results seem to suggest that Korean travelers, when measured from a post hoc perspective, connect their levels of satisfaction with those of physical risk. Thus, the researchers might have measured on a post hoc basis the adrenaline rush that people experience when they successfully survive stressful situations with moderate physical risk. In the U.S., this feeling is likened to the exhilaration one feels at the end of a roller coaster ride.

Another set of regression analyses also sought to predict intention to repatronize using SERVPERF, industry-based measures and risk variables. Table 6 shows the results of the analyses.

Again, both models were highly significant ($R^2 = .36$, $F = 25.20$, $p < .001$ for the U.S. sample; $R^2 = .37$, $F = 39.22$, $p < .001$ for the Korean sample). The U.S. sample produced a model with two significant independent variables, service reliability and empathy. Reliability produced a standardized coefficient of .42 and a t -value of 4.12, which was significant at $p < .001$ while empathy produced a standardized coefficient of .26 and a t -value of 2.55, significant at $p < .05$. The Korean sample also featured two significant independent variables. One variable was reliability with a standardized coefficient of .56 and a t -value of 8.00 with $p < .001$. Overall risk was also significant as an independent variable producing a $-.15$ standardized coefficient and a t -value of -2.15 , significant at $p < .05$.

Table 6. Impact of SERVPERF, Industry Indices, and Risk Factors On Intention to Repatronize: Results of the Stepwise Regression Analysis

Variable	U.S.		Korean	
	Standardized Coefficient	t-value	Standardized Coefficient	t-value
<i>SERVPERF Measure</i>				
Tangibles	—	—	—	—
Reliability	.42	4.12***	.56	8.00***
Responsiveness	—	—	—	—
Assurance	—	—	—	—
Empathy	.26	2.55*	—	—
<i>Industry-based Measure</i>				
Baggage Handling	—	—	—	—
Bumping Procedure	—	—	—	—
Operations and Safety	—	—	—	—
In-flight Comfort	—	—	—	—
Connections	—	—	—	—
<i>Perceived Risk</i>				
Overall Risk	—	—	-.15	-2.15*
Financial Risk	—	—	—	—
Performance Risk	—	—	—	—
Physical Risk	—	—	—	—
Psychological Risk	—	—	—	—
Social Risk	—	—	—	—
		$R^2 = .36, F = 25.20***$	$R^2 = .37, F = 39.22***$	

* $p < .05$, ** $p < .01$, *** $p < .001$

CONCLUSIONS

The results of the study indicate that U.S. passengers are generally more satisfied with their airline service than Korean customers on most of the SERVPERF dimensions. However, the industry-based measures produce many interesting contrasts between the two groups of customers. Specifically, Koreans are generally more satisfied with the bumping procedures, whereas U.S. participants feel happier with the airline's baggage handling, safety/operations, and connections.

An interesting and important finding is the different levels of perceived risk. The results of the study suggest that U.S. participants perceive higher levels of performance and financial risks, whereas Koreans feel greater social risk in choosing an airline. From a risk perspective, these findings imply that U.S. participants generally evaluate airline alternatives based on service performance and costs whereas Koreans select an airline that they think would be acceptable to other people they know. In other words, Koreans may be more susceptible to social influences in their choice of an

airline. Therefore, international airlines serving Korean passengers should formulate promotional strategies that encourage word-of-mouth communications among potential customers. Finally, U.S. participants generally seem to feel a higher level of overall risk when choosing an airline. Airlines targeting U.S. passengers should use risk-reducing strategies in the airline choice. For instance, companies can emphasize value for the money to reduce financial risk and service quality to alleviate performance risk.

The results from the regression analyses offer significant insight for international airlines. First, the results indicate that U.S. customers think of service reliability and connections as the key factors determining the airline service quality. Fortunately, the airlines serving U.S. travelers are evaluated favorably on these two dimensions. On the other hand, Korean passengers generally consider reliability and assurance as the most important factors and other industry-based service items as less important. However, they perceive the airlines they fly with less favorably on these SERVPERF dimensions than U.S. customers. Thus, the international airlines targeting Korean passengers should focus efforts on improving such core services.

Secondly, as described above, Koreans generally seem to perceive a lower level of risks in selecting an airline. However, when they evaluate their satisfaction with an airline, their perception of risks becomes important. The results indicate that the higher the perception of performance and psychological risk, the less favorable their satisfaction levels. This reaction might be caused by cognitive dissonance or feeling of regret, that is, a thought that they made a poor choice of an airline. The airline could probably reduce the negative impact of perceived risk by providing the core services consumers want (i.e., reliability and assurance) and confirming that travelers made the right choice.

Finally, the study results point out several key variables that determine customer intention to repatronize the airline. Those variables are reliability and empathy for participants, and reliability and overall risk for Korean customers. International airlines serving U.S. or Korean passengers should focus on these variables in order to develop and maintain long-term relationships with customers.

Implications

The results of this study have methodological and managerial implications. The study demonstrates that the SERVPERF scale is applicable and usable in cross-cultural studies. The scale worked well when applied to Korean customers and seems to offer some predictive ability for satisfaction and repatronization of services. This conclusion can be supported by prior research in other cultures as well as by other studies

conducted in the Korean environment. Further, this study also demonstrates the validity of service reliability as a key predictor in both satisfaction and repatronization. This finding is consistent with prior research dealing with airline service quality (e.g., Young, *et al.*, 1994a, 1994b).

The results of this study, considered in totality, suggest that implementing a simple-minded service standardization across different countries for cost reduction can be risky in the international airline industry. Consumers view the same service differently and evaluate its merits and faults differently. Although airlines cannot ignore cost constraints, they should make an effort to recognize cultural perceptions of their service and to customize services to the differing needs of international passengers.

Future Research Directions

In earlier studies conducted in the U.S., Lee, *et al.*, (1993), and Young, *et al.*, (1992) and Young, *et al.*, (1994a, 1994b) found that the best prediction of airline satisfaction and repatronization occurred when SERVPERF dimensions were combined with industry measures of service quality. While industry measures did not prove to be particularly significant or predict satisfaction and repatronization in the Korean environment, there is reason to believe that industry measures are useful in predicting these dependent variables in cultures other than in the U.S. While the findings in this study are limited to the airline industry, there is the possibility that industry measures would prove extremely helpful in other service industries as well as in other cultures. Future research needs to investigate these possibilities.

Perhaps the most important finding of the study is the role of perceived risk in predicting satisfaction and repatronization. In specific, types of perceived risk seemed to play important roles in the selection of services. Further, based on the results of this study, one might hypothesize that perceived risk varies a great deal from culture to culture as a factor in predicting satisfaction and repatronization. The current study also seems to suggest some interesting cultural connections between satisfaction and physical risk as noted in the results section. The positive relationship between physical risk and satisfaction after holding reliability and personal risk constant is one that deserves further study. Is there a true roller coaster effect as stated earlier? If this hypothesis is indeed valid, the findings suggest that there is an opportunity in certain cultures to develop standardized services which successfully reduce psychological and performance risk, while at the same time, providing users with some perceived exposure to moderate physical risk.

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APPENDIX A

SERVPERF Dimensions and Measures

Tangibles. Physical facilities, equipment, appearance of personnel (alphas = .62, .76)^a

1. XYZ has up-to-date equipment.
2. XYZ's physical facilities are visually appealing.
3. XYZ's employees are well dressed and appear neat.
4. The appearance of the physical facilities of XYZ is in keeping with the type of services provided.

Reliability. Ability to perform service dependably and accurately (alpha = .82, .73)

5. When XYZ promises to do something by a certain time, it does so.
6. When you have problems, XYZ is sympathetic and reassuring.
7. XYZ is dependable.
8. XYZ provides its services at the time it promises to do so.
9. XYZ keeps its records accurately.

Responsiveness. Willingness to help customers and provide prompt service (alphas = .73, .68)

10. XYZ does not tell customers exactly when services will be performed. (-)^b
11. You do not receive prompt service from XYZ. (-)
12. Employees of XYZ are not always willing to help customers. (-)
13. Employees of XYZ are too busy to respond to customer requests promptly. (-)

Assurance. Knowledge and courtesy, ability to inspire trust and confidence (alphas = .69, .81)

14. You can trust employees of XYZ
15. You feel safe in your transactions with XYZ's employees.
16. Employees of XYZ are polite.
17. Employees get adequate support from XYZ to do their jobs well.

Empathy. Caring, individualized attention (alphas = .82, .80)

18. XYZ does not give you individual attention. (-)
19. Employees of XYZ do not give you personal attention. (-)
20. Employees of XYZ do not know what your needs are. (-)
21. XYZ does not have your best interest at heart. (-)
22. XYZ does not have operating hours convenient to all their customers. (-)

^a Cronbach's alphas for the U.S. and Korean samples, respectively.

^b (-) indicates that the measure is reverse scored.

APPENDIX B**Airline Industry-based Dimensions and Their Measures**

Baggage Handling (alphas = .68, .71)^a

1. Airline baggage handling is prompt and efficient.
2. Airline interline agreements work well for the consumer.
3. Airline check-in is efficient.

Bumping Procedures (alphas = .70, .67)

4. Airline bumping procedures are unfair/inconvenient. (-)
5. Airline bumping procedures provide inadequate compensation for the trouble caused to the consumer. (-)
6. Information provided by airline at airport is inadequate. (-)

Operations and Safety (alphas = .70, .67)

7. Ticket and reservations procedures prior to arrival at the airport are adequate.
8. Airline is safe.
9. Airline selects the right equipment for trips.
10. Amenities provided by airline are important to the comfort of passengers.
11. Airline distinguishes between each class through service

In-flight Comfort (alphas = .82, .80)

12. Airline seats have good pitch.
13. Airline seats are wide enough.
14. There is enough room in the aisles.
15. The layout of seats in aircraft is just right.
16. Airline food and beverage service is good.

Connections (alphas = .86, .81)

17. Airline offers sufficient flight frequency.
18. Airline offers flights at right times of the day and night.
19. Airline correctly coordinates connections.
20. Airline offers sufficient non-stop flights.
21. Airline offers sufficient connecting flights.

^a Cronbach's alphas for the U.S. and Korean samples, respectively.

^b (-) indicates that the measure is reverse scored.