

**AIRLINE PASSENGERS' SATISFACTION WITH AIRPORTS**

A Thesis

by

HYUN JOO KIM

Submitted to the Office of Graduate Studies of  
Texas A&M University  
in partial fulfillment of the requirements for the degree of

MASTER OF SCIENCE

December 2011

Major Subject: Recreation, Park, and Tourism Sciences

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Approved by:

Chair of Committee,	James F. Petrick
Committee Members,	Larry Gresham
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## ABSTRACT

Airline Passengers' Satisfaction with Airports.

(December 2011)

Hyun Joo Kim, B.A., Yonsei University

Chair of Advisory Committee: Dr. James F. Petrick

Airports are places where people have the potential to experience either satisfaction or frustration, and marketing and tourism scholars have argued that customer satisfaction is one of the primary goals of airports. However, few studies have systemically analyzed the service quality and efficiency of airports, or examined customer satisfaction with airport facilities. While airline passengers' expectations of airport service quality have been examined, there are few studies focusing on *both* their expectations and desires regarding airport services. Furthermore, to the best of our knowledge, no available studies have analyzed passengers' expectations and desires on the basis of the desires congruency model. This study attempted to define tourists' desires and expectations congruency as well as their satisfaction with their entire airport experiences.

A total of 262 airline passengers in Incheon International Airport and Los Angeles International Airport participated in the study. Six hypotheses were tested with data collected from a survey of the airline passengers with the use of descriptive statistics and structural equation modeling. Most relationships among latent variables

were found to be in accordance with previous studies. Furthermore, the results of the current study implied that the desires congruency model could be applied to the satisfaction formation of airline passengers. Practical recommendations are presented for the airport managers to enhance airport services.

**DEDICATION**

Dedicated to my parents

I love you

## ACKNOWLEDGEMENTS

I would foremost like to thank my committee chair, Dr. Petrick. He is the world's second best tourism scholar, but I am sure that he is the world's best academic advisor. His office door is always open to me and variety of my questions. Dr. Petrick encourages and supports me to achieve my academic goal with cheerful praises and precious advice. I also would like to thank my great and supportive committee members, Dr. Gresham and Dr. McIntosh for directing me to follow the right track.

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Finally, a bunch of thanks go to my beloved family: my parents and mother-in-law, my sister, and my husband. I would like to acknowledge my parents in Korea for encouraging and supporting me a lot. The short times talking to you by phone were my favorite and did make me more energetic. I do thank my mother-in-law for applauding and praying for us. My younger sister, Dr. Kim, was a great friend and tutor in doing my research. The last acknowledgement goes to my husband for being just next to me whenever I need him.

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## CHAPTER I

### INTRODUCTION

#### **Study Background**

Betts (2004) described today's airports as the place for beginning travel, for awaiting connections, and for ending travel. The image of an airport is of an aggregate of various consumption activities including shopping, dining, and lodging (Iyer, 2000). Moreover, airport services are an important element of the travel experience chain. Ritchie and Crouch (2005) defined the *travel experience chain* (Figure 1-1) as "the entire series of events and/or service transactions that occur from the time the individual/group leave home until they return" (p. 213). It implies that a negative experience in an airport can leave a tourist with a feeling of dissatisfaction regarding his or her entire travel experience. For example, tourists can encounter long lines at ticket counters, security checkpoints, and boarding gates (Martín-Cejas, 2006). In addition, tourists can be dissatisfied with the price of restaurant food or because their time spent in airports is boring and lacking challenging activities. Airports are often the first contact point for tourists when they arrive at their holiday destination (Martín-Cejas, 2006) and the travelers' feeling of satisfaction or frustration at their first contact can determine their general feelings about their travel experience. Thus, these feelings have been argued to have the potential to define an entire trip (Ritchie and Crouch, 2005).

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This thesis follows the style of *Tourism Management*.

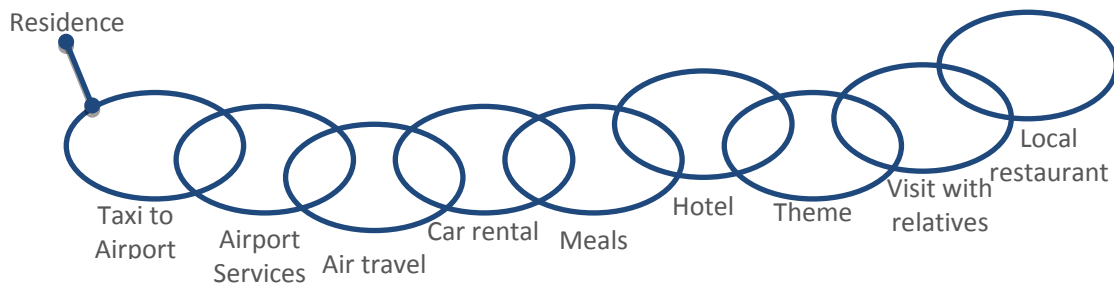


FIGURE 1-1. The links in the travel experience chain (Ritchie and Crouch, 2003)

### Objectives of the Study

Few marketing and tourism scholars have studied the service quality and efficiency of airports from an airline's viewpoint (Tsaur, Chang, and Yen, 2002; Adler and Berechman, 2001). The aims of past studies have been to improve the efficiency of resource usage in airports (Debbage, 2002) by gauging tourists' satisfaction with service quality in airports—for example, Gran Canaria Airport in Spain (Martín-Cejas, 2006) and King Fahd International Airport in Saudi Arabia (Sohali and Al-Gahtani, 2005). Heung, Wong, and Qu (2002) studied tourists' perceptions and overall satisfaction with airport restaurants in Hong Kong. SkyTrax, a company in the U.K., annually evaluates the service quality of airports worldwide. These results appear with the title of *The World's Best Airports* in media and include the company's Internet homepage (SkyTrax, 2011). The SkyTrax survey is meaningful because it measures tourists' opinions of various service areas as given directly by the tourists and tracks the results annually (SkyTrax, 2010a).

The prevalence of air travel has been rapidly growing with the number of airline passengers increasing 11.7% in 2010 compared to the previous year (IATA, 2010). The International Air Transport Association (IATA) (2011) forecasted that the annual number of airline passengers worldwide would rise to 3.3 billion by 2014 from 2.5 billion in 2009. In addition, air travelers typically spend a considerable amount of time in airports. However, despite the importance of transportation, including the influence of airports, in tourism, it is hard to find a tourism journal whose title includes either “transportation” or “airport” (Ioannides and Timothy, 2009). Furthermore, very few studies have examined air passengers’ expectations of airport service quality (Fodness and Murray, 2007; Martín-Cejas, 2006), passengers’ expectations and perceptions of airport restaurants (Heung et al., 2002), or passengers’ expectations of and satisfaction with airport facilities (Atalık, 2009). In short, the desires of airline passengers at airports and the levels of satisfaction with airport services based on the desires congruency model (Spreng, 1993) do not appear to have been addressed in tourism studies.

The objectives of this study are 1) to conceptualize the variables that relate to air tourists’ expectations and desires congruency regarding airport services and their satisfaction with airport services and their overall experiences in airports: 2) to evaluate the differences between their expectations and desires and perceived performance: and 3) to examine the levels of air travelers’ satisfaction with airport services and their overall airport experiences. It is believed that the results of the current study would be of interest to both tourism scholars and airport managers.



## CHAPTER II

### LITERATURE REVIEW

In the movie *Up in the Air*, airports are portrayed as unpleasant places with crowds, long lines, and annoying flows (Reitman, 2009). On the other hand, a classic movie, *If It's Tuesday, This Must Be Belgium*, describes excited tourists who were about to begin overseas travel in a London airport (Margulies and Wolper, 1969). Popular media has portrayed airports as places at which tourists are fascinated at the beginning of their travel and/or a place where tourists are disturbed by long lines, irritating security checks or other unpleasant events.

Airports have various functions. They are places that tourists often hurry through to reach their final destinations. Tourists also wait for flights in airports either to transfer or because of a delay in flights. Tourism scholars and travel marketers have thus begun to characterize airports as destinations in themselves (Geuens, Vantomme, and Brengman, 2004; Freathy and O'Connell, 1999). In addition, airports can function to accommodate tourists during an emergency as realistically seen during the natural disaster of the eruption of the Icelandic volcano Eyjafjallajökull in 2010 (The New York Times, 2010). Thus, it is believed that airport administrators could benefit from a better understanding of their consumers.

The following section presents previous studies on airports, satisfaction, expectation-disconfirmation theory, and the desires congruency model. As stated previously, tourism studies have not focused on airports much, though airports have

begun to be considered as destinations by themselves (Geuens et al., 2004; Freathy and O'Connell, 1999). Furthermore, many scholars have argued customer satisfaction as one of the most important sources of competitive advantages for tourism destinations (Hui et al. 2007; Fuchs and Weiermair, 2004; Fuchs, Peters, and Weiermair, 2002; Ritchie and Crouch, 2000). Customer satisfaction has been studied and been approached by various viewpoints. The expectation-disconfirmation theory is a traditional measurement technique of satisfaction (Oliver, 1980). Several studies (Spreng, MacKenzie, and Olshavsky, 1996; Spreng and MacKoy, 1996; Spreng, 1993) have shown the role of desires in the formation of satisfaction. All of which are relevant to the current study.

### **Airports and Tourism**

Augé (2008) defined a *place* as being “relational, historical, and concerned with identity” (p. 63) and a *non-place* as characterized by “transit, interchange, passenger, and communication with codes, images, and strategies” (pp. 86-87). Airports are an apparent example of non-places because a passenger is anonymous among many people, needs to prove his or her identity with a passport or ticket, and just passes through the airport. Airports also typically lack cultural and historical characteristics (Augé, 2008).

However, airports are no longer considered to merely provide transportation of passengers between one destination and another (Geuens et al., 2004; Freathy and O'Connell, 1999). Freathy and O'Connell (1999) stated that an airport is seen as a leisure attraction in itself, and airports are also where an increasing number of tourists begin their travel experience (Rhoades, Waguespak, and Young, 2000). Furthermore,

Tse (2008) highlighted that the positive reputation of an airport could contribute to a destination's image. Hence, airport marketers have made efforts to differentiate their airport by trying to provide more consumer satisfaction than competing airports (Atalık, 2009; Fodness and Murray, 2007).

### **Airports and Customer Satisfaction**

Satisfaction is often said to reflect the degree to which one believes that an experience evokes positive feelings (Rust and Oliver, 1994). According to Oliver (1980), consumers have feelings of satisfaction when their perceived performance exceeds their expectations. In addition, Parasuraman, Zeithaml, and Berry (1991) emphasized that a firm should understand consumers' expectations in order to deliver superior services that satisfy them.

Many scholars have regarded customer satisfaction as one of the most important sources of competitive advantage for tourism destinations (Hui et al. 2007; Fuchs and Weiermair, 2004; Fuchs, Peters, and Weiermair, 2002; Ritchie and Crouch, 2000). This is because tourist satisfaction has been found to affect the choice of destination (Yoon and Uysal, 2005), the purchase of products and services (Yoon and Uysal, 2005), and the decision to re-visit a destination (Petrick, 2004, 2002; Kozak and Rimmington, 2000). Since the 1990s, airport marketers have made efforts to provide exceptional levels of customer satisfaction as air travelers have become more demanding (Atalık, 2009; Fodness and Murray, 2007). Moreover, tourism scholars have emphasized that customer

satisfaction is one of the primary goals of airports (Atalık, 2009; Tse, 2008; Fodness and Murray, 2007; Martín-Cejas, 2006).

Customers usually consider airports to be a “*take-it-or-leave-it proposition*” (Rhoades et al., 2000), since airport customers often have no choice among airports regardless of their preferences (Yeh and Kuo, 2003). Because of this situation, it has been argued that airports are natural monopolies (Rhoades et al., 2000). Fornell (1992) argued that monopolies have lower levels of customer satisfaction than competitive firms and that customers tend to be less satisfied with service sectors than with product sectors. Airports thus have the potential to be labeled both a monopoly and a part of the service sector. Therefore, it could be meaningful to evaluate the actual level of customer satisfaction with airport services and to find ways to improve the service quality of airports.

Even though a few studies have found that airport marketers enhance the levels of customer satisfaction (Atalık, 2009; Tse, 2008; Fodness and Murray, 2007; Martín-Cejas, 2006), marketing research has focused little on service quality measurement in airports (Fodness and Murray, 2007). Airport stakeholders have also been interviewed in the development of important airport quality factors (Rhoades et al., 2005; Yeh and Kuo, 2002). However, airport customers—the passengers—have not been included in these past surveys (Fodness and Murray, 2007). Surveys conducted by companies or organizations listen to what airport customers say. For example, Airport Council International (ACI) annually estimates 34 airport service factors by nearly 200,000 questionnaires completed by passengers (ACI, 2011b) SkyTrax (2010b) also measures

airline passengers' experiences across 39 different factors of airport services and products. Moreover, in marketing research, Fodness and Murray (2007) studied airline passengers' expectations of airport service quality from approximately 1,000 responses from frequent fliers, and the results suggested a multidimensional and hierarchical model of airport service quality expectations. Due to the lack of study on airport customers, this study could contribute to understanding airport customers' satisfaction by comparing their desires and expectations congruency to the performance of airport services.

### **Desires Congruency Model**

The expectation-disconfirmation theory (see Figure 2-1; Oliver, 1980) is arguably the most widely used approach to explain customer satisfaction or dissatisfaction (Yoon and Uysal, 2005; Yüksel and Yüksel, 2001). The expectation-disconfirmation theory suggests that consumers have expectations about anticipated performance prior to purchasing goods or services (Yüksel and Yüksel, 2001; Oliver, 1980). Customer satisfaction and dissatisfaction result from the disconfirmation arising from the discrepancy between customers' expectations and actual experiences (Oliver, 1980). If experiences meet expectations, confirmation occurs; on the other hand, disconfirmation arises when expectations and experiences differ. Positive disconfirmation occurs when a performance of goods or services exceeds expectations. In contrast, a negative disconfirmation arises when a performance is worse than expectations (Hui et al., 2007; Yoon and Uysal, 2005; Yüksel and Yüksel, 2001). Among tourists, confirmation brings a satisfied feeling; however, positive and negative

disconfirmations have been argued to result in delight and disappointment, respectively (Hui et al., 2007). Thus, many researchers have found the expectation-disconfirmation theory to be a good predictor of satisfaction (Petrick, 2004; Szymanski and Henard, 2001). In addition, the majority of marketing and tourism research on satisfaction has been influenced by the expectation-disconfirmation theory (Petrick, 2004; Baker and Crompton, 2000).

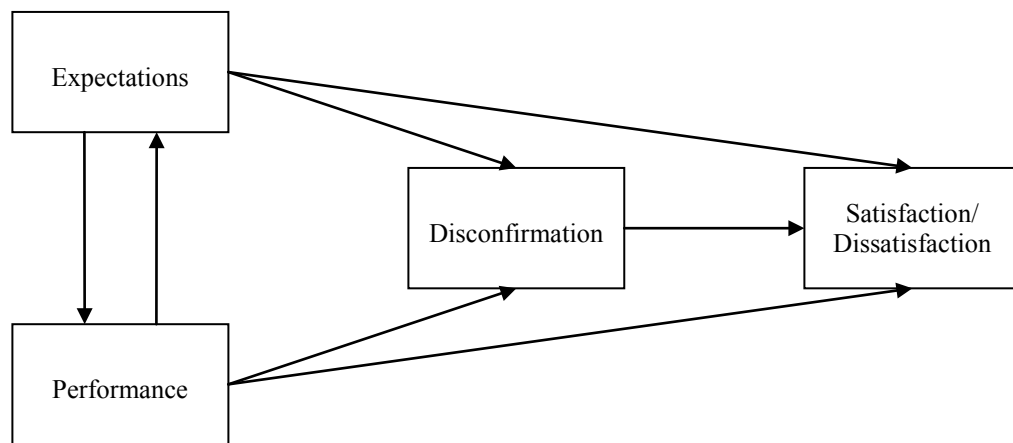


FIGURE 2-1. Expectation-disconfirmation theory (Oliver, 1980)

However, there have also been criticisms of the expectation-disconfirmation theory. Johnson (1998) argued that the effects on satisfaction of expectations regarding services are weaker due to the intangible nature. In addition, market managers could lower the levels of customer expectations instead of providing optimized performance, if consumer satisfaction results from perceived performance that is superior to expectations

(Spreng and MacKoy, 1996; Spreng and Olshavsky, 1993). In other words, this theory suggests that it is possible that a poor performance satisfies a consumer who expects and receives the poor services (Petrick, 2004).

Because of this, it has been argued that a person's desires also shape consumer satisfaction. According to the desires congruency model (Spreng et al., 1996; see Figure 2-2), "the extent to which a product or service fulfills a person's *desires* plays an important role in" having a feeling of satisfaction as well as expectations (Spreng et al., 1996, p. 15). Furthermore, Petrick (2002) recommended measuring *desires* for intangible products. *Desires* are defined as higher-level values that can provide a person with certain benefits (Spreng et al., 1996). Expectations have two components: perceptions of the likelihood of a future event and evaluations of the event (Spreng et al., 1996; Olive, 1980). Expectations can be created by questioning what *will* happen, whereas *desires* are what a firm *should* provide (Spreng and MacKoy, 1996). For example, an airline passenger could likely *expects* to wait for a long time in the check-in counter line because the airport is crowded, while the passenger likely *desires* to spend a short time in the line.

Furthermore, as Oliver (1980) argued, perceived performance is also considered to be a factor that influences satisfaction in the desires congruency model (see Figure 2-2; Spreng et al., 1996). Otto and Ritchie (1995) posited that perceptions of service quality attributes precede and assist in determining the level of satisfaction with an experience. Bitner and Hubbert (1994) defined *service quality* as the consumer's overall impression of the relative inferiority or superiority of a firm and its service. From a

marketing viewpoint, perceived service quality has been used as a tool for distinguishing the superiority of services (Parasuraman, Zeithaml, and Berry, 1988). Based on this viewpoint, SERVQUAL was designed to measure the differences between expectations and performance (Ekinici and Sirakaya, 2004), which Parasuraman et al. (1988) defined as “a multiple-item scale for measuring service quality” (p. 13). Moreover, when tourists perceive higher quality and are satisfied with a tourism supplier’s performance, they are more likely to re-visit and have the supplier’s reputation enhanced (Baker and Crompton, 2000). Quality and tourist satisfaction have also been found to affect destination loyalty (Hui et al., 2007). It is thus believed to be meaningful to study the relationships among airport service quality attributes and the levels of passengers’ satisfaction based on the passengers’ perspective.

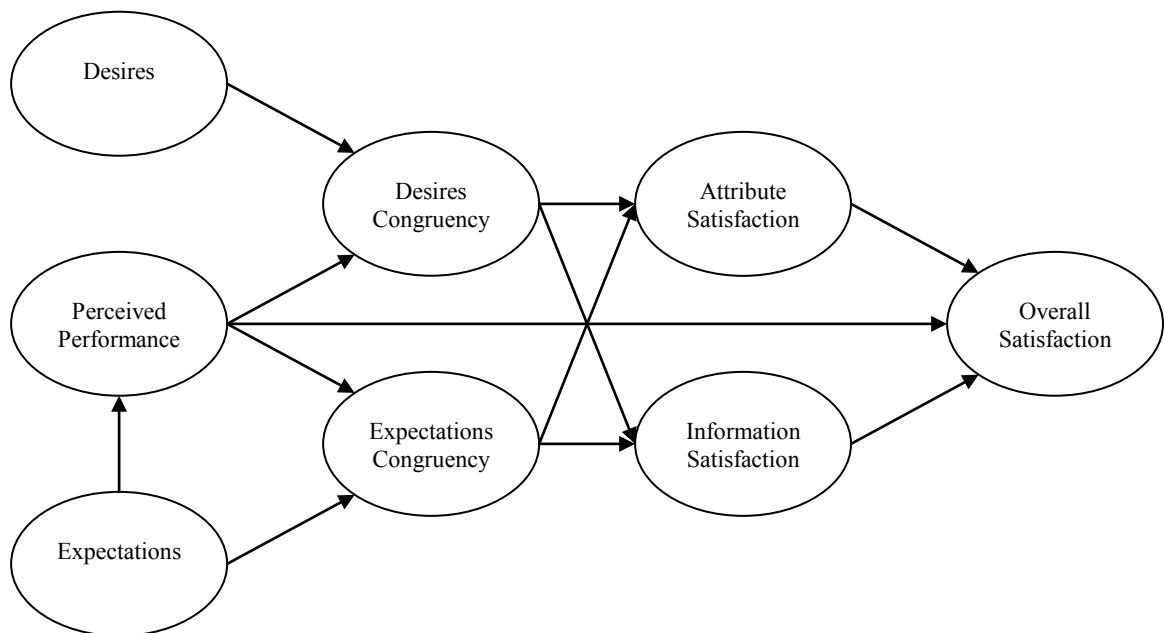


FIGURE 2-2. Desires congruency model (Spreng et al., 1996)



The desires congruency model (see Figure 2-2; Spreng et al., 1996) compares perceptions of performance with expectations and desires: expectations congruency and desires congruency, respectively. *Expectations congruency* is “the consumer’s subjective assessment of the comparison between his/her expectations and the performance received” (Spreng et al., 1996, p. 18). *Desires congruency* is defined as “the consumer’s subjective assessment of the comparison between his/her desires and the performance received” (Spreng et al., 1996, p. 18). Spreng et al. (1996) put forth that expectations congruency and desires congruency influence both attribute satisfaction and information satisfaction but that both did not directly affect overall satisfaction. They additionally postulated that attribute satisfaction and information satisfaction mediated the impact of expectation congruency and desires congruency on overall satisfaction (Spreng et al., 1996).

Spreng et al. (1996) proposed that the final outcome—overall satisfaction—has two antecedents: attribute satisfaction and information satisfaction. *Overall satisfaction* is defined as an affective state that is the emotional reaction to a product or service on the basis of the overall experience. *Attribute satisfaction* is defined as the consumer’s subjective satisfaction judgment resulting from observations of attribute performance, and *information satisfaction* is defined as a subjective satisfaction judgment of the information used in choosing a product (Spreng et al., 1996). The distinction between attribute satisfaction and overall satisfaction is that the former is focused on the assessment of goods or services themselves; overall satisfaction is based on the whole experience.

Pizam, Neuman, and Reichel (1978) argued that tourist satisfaction was determined through the comparison between tourist experiences at a destination visited and their expectations of the destination. Thus, satisfaction with services is influenced by the person's initial expectations, and higher levels of satisfaction can lead customers to re-purchase the products or services (Hui et al., 2007). However, to the best of the current researcher's knowledge, an examination of tourist desires related to airports has not been undertaken. Therefore, it could be meaningful to evaluate both tourists' desires and expectations congruency regarding airport services.

## CHAPTER III

### RESEARCH METHODOLOGY

This chapter conveys the methods utilized to analyze the structure and antecedents of airline passengers' satisfaction with airports. The procedures of the study are displayed in Table 3-1 and present the airport permission, questionnaire development, pilot study, data collection, and hypotheses.

TABLE 3-1

Research procedures for the current study

<b>Literature Review</b>	<ul style="list-style-type: none"> <li>▪ Desires congruency model</li> <li>▪ Expectation-disconfirmation theory</li> <li>▪ Airports and consumer satisfaction</li> </ul>
<b>Permission from the Airports</b>	<ul style="list-style-type: none"> <li>▪ 8 airports contacted</li> <li>▪ Permission from the two airports: ICN and LAX</li> </ul>
<b>Initial Questionnaire Development</b>	<ul style="list-style-type: none"> <li>▪ Review of previous literature</li> </ul>
<b>Pilot Test</b>	<ul style="list-style-type: none"> <li>▪ 23 students</li> <li>▪ Questions modified</li> </ul>
<b>Final Questionnaire Development</b>	<ul style="list-style-type: none"> <li>▪ Results of pilot test</li> </ul>
<b>Data Collection I</b>	<ul style="list-style-type: none"> <li>▪ On-site survey</li> <li>▪ e-mail addresses collected at the two airports</li> <li>▪ 513 Airline passengers</li> </ul>
<b>Data Collection II</b>	<ul style="list-style-type: none"> <li>▪ Online survey</li> <li>▪ 470 e-mails successfully sent</li> <li>▪ 320 responses completed</li> </ul>
<b>Data Analysis</b>	<ul style="list-style-type: none"> <li>▪ 262 answers analyzed</li> <li>▪ Descriptive statistics</li> <li>▪ Hypothesis testing via SEM and multiple regression</li> </ul>

## **Study Sites**

The on-site survey was undertaken at two airports: Incheon International Airport (IATA code: ICN; IATA, 2011) in Seoul, Korea, and Los Angeles International Airport (IATA code: LAX; IATA, 2011) in Los Angeles, United States. These two airports were chosen because LAX is one of the busiest airports in the world with approximately 60 million passengers per year (ACI, 2011a); ICN is also very busy, with 30 million passengers yearly (IIAC, 2011a). Permission to access airline passengers at airports was also an important issue to initiate the current study. The researcher attempted to contact the airport employees in charge of customer services or public relations via e-mail in order to obtain permission to conduct the on-site survey at several airports. Many airport managers refused to allow the on-site survey due to security concerns. ICN has focused on improving visitors' experiences as well as their satisfaction with the airport, while LAX is also working to improve its service quality. Thus, the two airports permitted this study to be conducted, with a mutual goal of satisfying travelers (see Figure 3-1).

ICN is located in Incheon, Korea, which is one-hour from the national capital city, Seoul. The airport officially opened in 2001 (IIAC, 2011b) and as such is much newer than LAX. ICN covers 22.4 km<sup>2</sup>, and its main passenger terminal and concourse have 74 boarding gates. The airport has been listed as Best Airport Worldwide by Airport Council International (AIC) since 2005 (ACI, 2011b; IIAC, 2011b). In addition, the airport received the title of the World's Best Airport by SkyTrax in 2009 (SkyTrax, 2009). SkyTrax (2010c) also ranked ICN as having full five-star status shared with only two other airports: Hong Kong International Airport and Singapore Changi Airport.

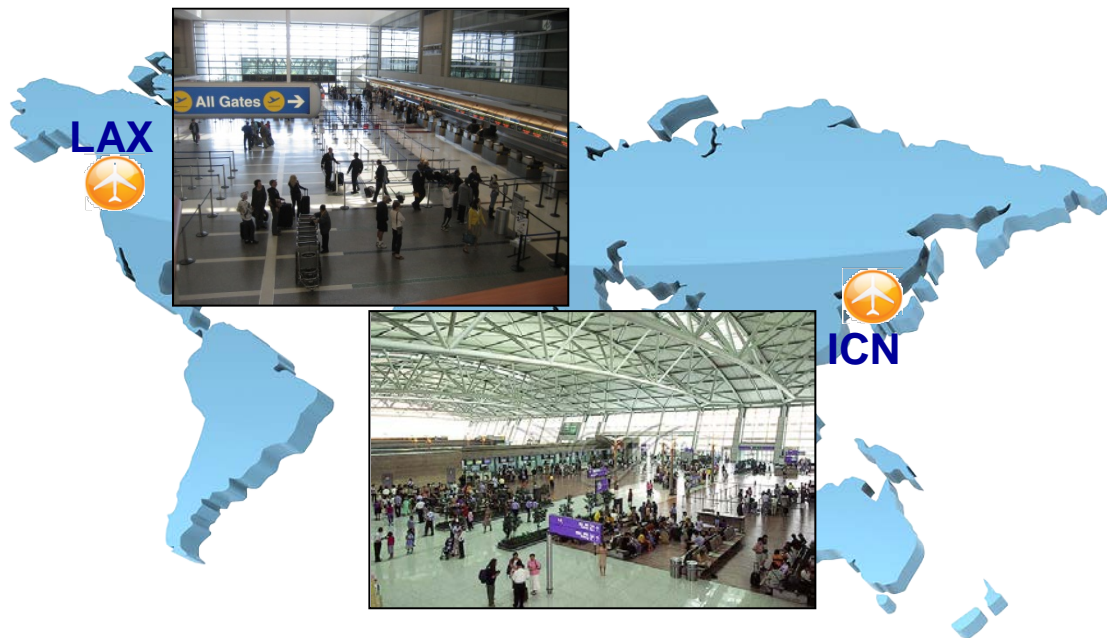


FIGURE 3-1. Study sites: ICN and LAX

The other study site, LAX was established in Los Angeles, California, USA, in 1928. LAX occupies 14.2 km<sup>2</sup> (LAX, 2011). This airport has been ranked as one of the world's busiest airports with 60 million passengers annually (ACI, 2011a). However, the airport has not won any awards related to service quality given by ACI or Skytrax.

### **Research Design**

The current study utilized the quantitative research method and Likert-type scales that followed the same methods of Spreng and colleagues (1996; 1993). This study used unobserved variables including desires congruency, expectations congruency, airport attribute satisfaction, and overall satisfaction with an airport. The researcher made a decision to exclude the rest of the four latent variables in the previous studies: desires,

expectations, perceived performance, and information satisfaction. This was because first, measuring all eight constructs made the questionnaire too long with nearly 100 questions, which would take more than 15 minutes to answer. In addition to the length of a questionnaire, the redundancy of the same set of questions was problematic. Spreng (1993) tested six items in each latent variable; participants had to answer questions about the same items under different variables.

The second reason for eliminating desires, expectations, and perceived performance was that airline passengers were able to estimate desires congruency and expectations congruency by comparing perceived performance to their desires and expectations. Moreover, information satisfaction was excluded due to a characteristic of airports, a natural monopoly, which airport consumers do not usually have choices to choose one among many airports. Thus, this study assumed that an emotional response to the experience of using information about services (i.e. information satisfaction; Spreng, 1993) was not as likely to occur to airline passengers, and thus information satisfaction was excluded.

The primary method for collecting the necessary data was an online survey. An online survey was chosen as it was more convenient for respondents to answer at their preferred time (Evans and Mathur, 2005). In particular, the study sites, airports, are places where people tend to hurry and security is a sensitive issue. Therefore, a short questionnaire in the airports and an online questionnaire were chosen for this study. Low administration costs are another advantage of an online survey. According to Evans and

Mathur (2005), advanced survey software and specialized online questionnaire development firms contribute to lowering costs in preparation and administration.

To conduct an online survey, the researcher first met airline passengers at the two study sites: ICN and LAX. The customer service managers at these airports granted permission for the researcher to access their passengers before the security line was crossed; thus, the researcher met participants mainly at the departure areas of the airports. Every tenth passenger in the check-in line of the airports was approached. Once a passenger agreed to talk with the researcher, the information sheet, which described the on-site and online survey (see Appendix 2 and 3), was given to the passenger. When a passenger decided to participate in the study, the researcher asked the person to provide personal information, such as an e-mail address and an available date for answering an online questionnaire. Then, the participant received an engraved ball point pen with the title of the study, *Airport Assessment*, and the e-mail address of the researcher, *hjoo.mj.kim@tamu.edu* as a small gift. Moreover, the details of the online questionnaire used in the study are presented in the next section (see Questionnaire Development, p. 19, for further details).

### **Permission from the Airports**

A total of eight international airports were contacted including: Incheon International Airport in Korea; Los Angeles International Airport, Dallas/Fort Worth International Airport, Houston International Airport, Austin/Bergstrom International Airport, San Francisco International Airport, John F. Kennedy International Airport, and

Chicago O'Hare International Airport in the United States. The researcher sent a formal request letter to the airport employees in charge of customer services or public relations in the eight airports via e-mail. The researcher requested permission to approach airline passengers prior to going through security, a brief explanation of the study was also attached. ICN and LAX responded and granted permission to meet their passengers. The other six airports received the request letter and either refused the request or had no response to the researcher. Airport operators try to enhance the aviation security (Adey, 2004) because terrorist attacks within and against international airport facilities have been frequent (Richter and Waugh, Jr., 1986). Several airport managers who rejected to permit the on-site research referred to security issues as a reason.

### **Questionnaire Development**

The main objectives of this study are to understand 1) the extent to which actual experiences of airline passengers at airports are different from their desires and expectations, 2) the effect of these discrepancies on their satisfaction with airport services, and 3) the relationship between the satisfaction with airport services and overall satisfaction with airports. In order to answer these questions, a quantitative research methodology was selected. Quantitative research allows generalizing a sample to a population; survey research, in particular, explains the relationships among variables (Trochim, 2001; Babbie, 1990).

In order to obtain e-mail addresses of expected participants in the current study, a short questionnaire (see Appendix 2 and 3) was developed; it contained two questions



including the preferred date to answer the questionnaire and an e-mail address to be reached. This questionnaire was distributed to airline passengers whom the researcher approached at the two airports: ICN and LAX.

The online survey was created to collect research data using *Qualtrics*, which provides services to create and manage online surveys (Qualtrics, 2011). The questions in the online survey were developed by the researcher on the basis of the desires congruency model (Spreng, 1993) and a study on airline passengers' expectations (Fodness and Murray, 2007).

The overall format of the questionnaire was similar to that of Spreng (1993). Spreng (1993) utilized eleven-point bipolar scales between  $-5$  and  $+5$  for the evaluation of the differences. The current researcher used the same eleven-point scales in the pilot study, but many participants reported that eleven-point scales were complicated in choosing answers. Due to the negative feedback from the pilot study, five-point bipolar scales ( $-2$  to  $+2$ ) were utilized in a question to evaluate the differences between the respondents' experiences and their desires and expectations. According to Dawes (2008; 2002), five-point scales tended to produce slightly lower mean scores and coefficients of variance than eleven-point scales. However, there were no appreciable differences in terms of standard variation, skewness or kurtosis between five-point and eleven-point scales (Dawes, 2008; 2002).

Furthermore, seven-point Likert-type scales were applied to all questions with the exception of the specific questions above regarding experiences vs. desires or expectations. According to Edwards and Kenny (1946), the Likert-type method yields

higher reliability coefficients with simplicity and utility; it has been widely used in measuring customer satisfaction in particular. Many scholars have applied Likert-type scales in their studies on satisfaction (Tse, 2008; Yoon and Uysal, 2005; Fuchs and Weiermair, 2004; Yüksel, 2001; Cronin, Brady, and Hult, 2000; Tribe and Snaith, 1998; Spreng and McKoy, 1996; Spreng et al., 1996; Spreng, 1993; Spreng and Olshavsky, 1993; Oliver, 1980).

Additionally, in choosing the airport service attributes utilized in the current study, a previous study on airline passengers' expectations of airport services (Fodness and Murray, 2007) was reviewed. Table 3-2 displays the major items of airport services. The first column lists the 23 items with high factor loadings greater than .60 from the study by Fodness and Murray (2007). The researcher aggregated a few items related to in the first column into one item or excluded a few on the basis of the size of factor loadings (Fodness and Murray, 2007) to form the 17 items used in the pilot study. Among items in the servicescape dimension, the first two items about signs at airports were combined, and the last three items were also aggregated because all three applied to quickness in procedures. The third and sixth items were excluded due to low loadings to their respective factors in the Fodness and Murray study (2007). Three attributes of service personnel were utilized as the former study did. No items in the services dimension were deleted, but the first three items were combined referred to areas for personal business; the next three attributes were related to décor at airports so aggregated; items 19 and 22 were about shopping thus combined. In the pilot study (see p. 24, for further details), the length and complexity of the questionnaire were indicated as

TABLE 3-2

## Selection of attributes of airport services

Dimension	Fodness and Murray (2007) (23)	Pilot Study (17)	Current study (9)
Service-scape	<p>1 An airport's external signs should clearly direct me to airport services such as parking, car rentals, terminals, etc.</p> <p>2 I like many signs to be visible throughout an airport directing me to airport facilities (baggage, ticket counters, security, restrooms, rental cars, transportation services, etc)</p> <p>3 An airport's physical layout should make it easy for passengers to find what they need (i.e. restaurants, restrooms, gates, etc.)</p> <p>4 A variety of ground transportation options to the nearest city should be available</p> <p>5 I expect baggage carts to be conveniently located</p> <p>6 I should be able to easily reach my connecting flight</p> <p>7 It upsets me when I have to wait more than 10 minutes to receive my baggage after a flight</p> <p>8 It upsets me when I have to wait in line more than 10 minutes during the check-in process</p> <p>9 I should be able to exit the airplane within 10 minutes of landing</p>	<p>1 Clear/visual signs to direct to airport services and facilities</p> <p>2 Convenient parking</p> <p>3 Baggage carts convenient to use</p> <p>4 Convenient to find information on flights, local attraction, and lodging</p> <p>5 A variety of ground transportation options to the nearest city</p> <p>6 Free Wi-Fi connection</p> <p>7 Fast check-in, security check, and baggage claim</p>	<p><b>1 Clear/visual signs to direct to airport services and facilities</b></p> <p><b>2 Convenient facilities available (i.e. carts, free Wi-Fi, etc.)</b></p> <p><b>3 A variety of ground transportation options to the nearest city</b></p> <p><b>4 Fastness in check-in, security check, immigration, and baggage claim</b></p>
Service personnel	<p>10 Employees at an airport should never be too busy to respond to my requests promptly</p> <p>11 I expect my complaints to be responded to immediately at an airport</p> <p>12 There should be employees at an airport available to offer me individualized attention</p>	<p>8 Courteous airport employees</p> <p>9 Airport employees knowledgeable of airport services</p> <p>10 Prompt response to passengers' complaints</p>	<p><b>5 Courteous and knowledgeable airport employees</b></p>
Services	<p>13 An airport should have business centers, which provide personal computers, phones, and faxes</p> <p>14 Conference facilities should be available to me at an airport so that I can conduct meetings</p> <p>15 An airport should have quiet areas in which to nap, read, or do business</p> <p>16 An airport should have current décor</p> <p>17 An airport's décor should match the local culture of the city at which it is located</p> <p>18 An airport should display art</p> <p>19 National chain restaurants should be available at airports</p> <p>20 Nationally known retail outlets should be available at airports</p> <p>21 Opportunities to enjoy local cuisine should be available at airports</p> <p>22 I expect to find a variety of specialty retail stores that portray the local culture at the airport</p> <p>23 An airport should be clean</p>	<p>11 Comfortable seating at waiting areas</p> <p>12 Décor/art that matches with the local culture</p> <p>13 A variety of products in duty-free shops</p> <p>14 A variety of cafes and restaurants</p> <p>15 A variety of restaurants that include local cuisine</p> <p>16 Clean restrooms available</p> <p>17 Clean airport</p>	<p><b>6 Comfortable areas to nap, read, and do business</b></p> <p><b>7 Décor that matches with the local culture</b></p> <p><b>8 Diversity in shops and restaurants</b></p> <p><b>9 Cleanliness (i.e. overall airport, restrooms, etc.)</b></p>

deleting airport service items was recommended by the participants. Therefore, nine attributes of airport services were chosen for the final study, as seen in the last column of Table 3-2. The attributes related to convenient facilities at an airport were aggregated including baggage carts, parking, free Wi-Fi, and information search into the item “convenient facilities available” in the last column. All attributes for airport employees became a single item, “courteous and knowledgeable airport employees.” Two items regarding cleanliness of overall airport and restrooms were also combined into attribute “cleanliness,” and the current researcher aggregated three items related to the variety of shopping products and restaurants in an airport into the item, “diversity in shops and restaurants” (see Table 3-2).

The first section of the online questionnaire asked respondents to supply their frequency of travel by air and trip purposes. The next two sections measured the extent to which their actual experiences in ICN or LAX were different from their desires and expectations regarding airport services; the seven-point scales were anchored from 1 to 7, based on Spreng (1993). In addition, also based on Spreng (1993), the respondents’ feelings toward this discrepancy were measured with five-point bipolar scales between -2 and +2, immediately followed by the difference question. The next section was an assessment of satisfaction with each aspect of the airport services with the use of seven-point scales. In the fifth section, overall satisfaction with airport experiences was evaluated with four items using seven-point scales adapted from Crosby and Stephens (1987). The last part of the survey requested that the respondents provide personal demographic information including age, ethnicity, gender, nationality, education, and

income. Participants were also asked to freely describe their personal opinions about the airport visited. All questions in the online survey had no forced answers. In other words, respondents were able to move to the next page, even if they missed some questions in the previous section. Furthermore, because self-completion web surveys should have appropriate guidance and be precisely worded (Chisnall, 2001) the online questionnaire displayed a brief explanation of the study and directions were given at the beginning of the survey (see Appendix 6 and 7).

### **Data Collection**

Prior to data collection, the Institutional Review Board (IRB) of Texas A&M University reviewed and approved the description of the study and the data collection instrument in April 2011. Between April and June 2011, data were collected through two approaches: on-site survey and online survey.

#### *Pilot study*

A total of 23 graduate students in the Department of Recreation, Park and Tourism Sciences at Texas A&M University, participated in the pilot test. Numeric results were not analyzed, but opinions on and ideas regarding the questionnaire were accepted to enhance the questionnaire. The majority of students commented on the length of the questionnaire due to having 17 airport service attributes. To evaluate the 17 items, the respondents needed to answer 68 questions on desires and expectations congruency and 17 more on attribute satisfaction. It thus took approximately 15 minutes to complete the survey. Thus, based on Fodness and Murray (2007), the 17 attributes

were reduced into the nine current items (see Questionnaire Development, p. 19, for further details). In addition, the researcher welcomed the idea that it was necessary to clarify the distinction between desires and expectations. Hence, adjectives or adverbs were added in the questions regarding desires congruency and expectations congruency: *ideal(ly)* for desires and *realistic(ally)* for expectations.

#### *On-site survey*

The purpose of the on-site survey was to collect e-mail addresses of expected participants. Between April 28 and May 12, 2011, the researcher approached every tenth airline passenger who completed check-in and received a boarding pass at the departure lounge of ICN. When an airline passenger agreed to be interviewed, the information sheet on the current study was given; the passenger was asked to provide a personal e-mail address and preferred date to complete the online survey. The researcher aimed to have the optimal time (as soon as their travels were completed) for participants to compare their airport experiences to their desires and expectations. Therefore, the “preferred date” was the date that each respondent would complete their travel and able to answer the research questionnaire. There were 367 airline passengers who participated in the on-site survey in ICN.

The on-site survey in LAX was held from May 15 through 21, 2011. The approach was the same as at ICN, but the departure area of LAX was much more crowded and lacked space for conversation between the researcher and airline passengers. Thus, the second floor of the departure level, the food court, was also used to

approach passengers. In total, there 146 passengers agreed to participate and provide their personal information for the current study in LAX.

#### *Online survey*

According to the preferred dates that the on-site participants provided, the researcher distributed the online questionnaire to their e-mail accounts. The online survey website, *Qualtrics*, allowed scheduling of future distribution of the survey; so, this function was used in order to match the preferred dates. The e-mail (see Appendix 4 and 5) gave an introduction of the researcher, the online survey link, and the information sheet, with a statement of gratitude. For the few e-mail accounts to which the online questionnaire was not delivered via *Qualtrics*, the researcher directly sent the link to the survey with the same contents as sent via *Qualtrics*.

### **Variables Measured in the Study**

#### *Desires congruency*

Desires congruency was operationalized by multiplying the difference between the actual experiences and desires (1 to 7) by the evaluation of this difference (-2 to +2). The first question concerned the discrepancy between desire and actual experience; the measure asked, “In comparison to the level of each attribute that you ideally desired, how big was the difference between what you ideally wanted and what ICN (or LAX) actually provided?” The seven-point scales were anchored by “Exactly as what I desired,” and “Extremely different from what I desired” with a mid-point of “Somewhat different from what I desired” as Spreng (1993) utilized. The second question concerned

the evaluation of the difference between desire and actual experience. Respondents were asked “How good or bad is this difference?” with the five-point bipolar scale anchored by “Very bad,” and “Very Good,” with “Neither bad nor good” as the midpoint. As previously explained (see Questionnaire Development, p. 19, for further details), the question and bipolar scale followed Spreng (1993), but this study utilized five-point scales instead of eleven-point scales. For example, when an airline passenger had an experience very different from their desires and felt bad about this difference, this passenger rated the difference between performance and desires 7 (extremely different from what I desired) and the evaluation of this difference -2 (very bad). Desires congruency was calculated by multiplying 7 by -2, thus desires congruency of the passenger was scored -14 ( $7 \times -2$ ).

#### *Expectations congruency*

Expectations congruency was operationalized by multiplying the difference between the actual experience and expectations (1 to 7) and the evaluation of this discrepancy (-2 to +2). The measure of difference asked, “In comparison to the level of each attribute that you realistically anticipated or expected for ICN (or LAX), how big was the difference between what you realistically expected and what ICN (or LAX) actually provided? Please mark the level of difference and your feeling.” Based on Spreng (1993), the seven-point scales were anchored: “Exactly same as I expected” and “Extremely different from what I expected” with a midpoint of “Somewhat different from what I expected.” The next question on the evaluation of the discrepancy asked, “How good or bad was this difference?” with the five-point bipolar scales anchored by



“Very bad” and “Very good.” Similar to desires congruency, the evaluation of expectations discrepancy followed Spreng(1993). However, the current researcher chose five-point bipolar scales instead of the eleven-point that Spreng (1993) utilized in order to clarify the question based on Dawes (2008; 2002).

#### *Attribute satisfaction*

Attribute satisfaction was operationalized by the degree to which respondents were satisfied with each of the nine elements of airport services examined. This construct was assessed by asking, “Thinking just about the airport services themselves, how satisfied are you with ICN (or LAX) services?” with the seven-point scales anchored at: “Very dissatisfied” and “Very satisfied” in the same technique with what Spreng (1993) utilized.

#### *Overall satisfaction*

Overall satisfaction was operationalized by an airline passenger’s overall satisfaction with his/her total experiences at the airport. Four different measures were utilized on the basis of Spreng (1993). Overall satisfaction was anchored as “Very dissatisfied/Very satisfied,” “Very displeased/Very pleased,” “Very frustrated/Very contented,” and “Very terrible/Very delighted” with seven-point scales.

### **Data Analysis**

The data analysis was conducted with the use of the Statistical Package for the Social Sciences 18.0 (SPSS) and the Analysis of Moment Structure 18.0 (Amos). There are several programs for structural equation modeling (SEM), and three of the most

popular are Amos (Arbuckle, 2009), EQS (Bentler, 1995), and LISREL (Jöreskog and Sörbom, 1996) (Schumacker and Lomax, 2004). For convenience, the Amos notation is used in this study to explain the desires congruency model (Spreng et al., 1996; Spreng, 1993) within the context of SEM. The use of Amos to analyze the data has two advantages: it is convenient to merge SPSS data with Amos (Kline, 2005), and Amos has an intuitive graphical user interface (Gallagher, Ting, and Palmer, 2008).

The most widely employed indices of model fit (Browne and Cudeck, 1993; Byrne, 2001; Kline, 2005) are displayed in Table 3-3 including: root mean square error of approximation (RMSEA), comparative fit index (CFI), normal fit index (NFI), and adjusted goodness-of-fit index (AGFI).

TABLE 3-3

Major fit indices

Statistic	Acceptable Level
Root Mean Square of Approximation (RMSEA)	< .08
Comparative Fit Index (CFI)	> .90
Normal Fit Index (NFI)	> .90
Adjusted Goodness-of-Fit Index (AGFI)	> .80

### Presentation of Hypotheses

Relationships which were examined in this study include: 1) the relationship between overall satisfaction with an airport and airport attribute satisfaction, 2) the direct effect of desires congruency and expectations congruency on overall satisfaction with an airport, 3) the effects of desires congruency and expectations congruency on airport

attribute satisfaction, 4) the dissimilarity in desires and expectations congruency, and 5) the different impact on airport attribute satisfaction between desires and expectations congruency. These relationships were evaluated through six hypotheses proposed in this study. The conceptual model of an airline passenger's satisfaction with an airport is displayed in Figure 3-2.

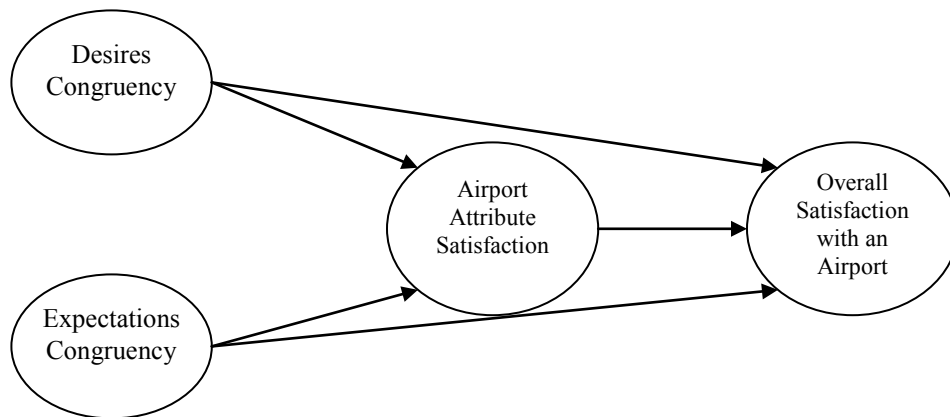


FIGURE 3-2. Conceptual model of airline passengers' satisfaction with an airport

*The effect of attribute satisfaction on overall satisfaction with an airport*

**H1a: Airline passengers' overall satisfaction with an airport is positively related to their attribute satisfaction**

Spreng et al. (1996) put forth that satisfaction with a product or service is influenced by attribute satisfaction, a consumer's satisfaction with the product or service itself. Furthermore, Oliver (1993) defined attribute satisfaction as "the consumer's

subjective satisfaction judgment resulting from observations of attribute performance.” In this study, attribute satisfaction was focused on analyzing its effect on air tourists’ satisfaction with an airport. Attribute satisfaction is argued to be an antecedent of overall satisfaction with overall satisfaction being based on respondents’ overall experience (Spreng et al., 1996).

**H1b: The effect of desires congruency and expectations congruency is mediated by airport attribute satisfaction**

Spreng et al. (1996) examined the direct effect of perceived performance on overall satisfaction (see Figure 2-2). Expectations congruency was revealed to influence overall satisfaction consistent with the traditional model (Oliver, 1980). Meanwhile, desires congruency had no effect on overall satisfaction and was mediated by attribute satisfaction. The present study investigated desires congruency and expectations congruency as antecedents of attribute satisfaction; thus, the direct effect and the mediation of the two congruencies regarding airport services were examined.

*The effects of desires congruency and expectations congruency on airport attribute satisfaction*

**H2a: Desires congruency positively affects airport attribute satisfaction**

Desires congruency was defined as an airline passenger’s evaluation of the comparison between his or her desires regarding an ideal airport and the actual performance received at the airport. For example, assuming that an airline passenger ideally wants to have a comfortable area in an airport in which to read a book; if the airport has chairs in a comfortable space to allow the passenger to enjoy private leisure

time, then he or she is likely to feel good and be satisfied with the airport service element. In contrast, if the passenger wants to be at a comfortable area but the airport is too crowded and noisy to read a book, then he or she is more likely to have bad feelings about the situation and is dissatisfied with this item of airport services.

### **H2b: Expectations congruency positively affects airport attribute satisfaction**

Expectations congruency was defined as an airline passenger's evaluation of the comparison between his or her realistic expectation regarding the airport and the performance actually received at the airport. Previous research has established the effect of expectation disconfirmation on satisfaction (Yi, 1990). Hypothesis 2b examined the effect of expectations congruency on airport attribute satisfaction.

#### *Desires congruency and expectations congruency*

### **H3a: Desires congruency and expectations congruency are significantly different**

To the best knowledge of the researcher, the gaps between desires congruency and expectations congruency have not been measured in former studies such as Spreng et al. (1996), Spreng and Olshavsky (1996), and Spreng (1993). If the two constructs are significantly different from each other, then one of the congruencies has a greater discrepancy between actual experiences in an airport and either expectations or desires. For example, if desires congruency is greater than expectations congruency; it would convey, according to the operationalization of these two variables, that the airline passengers' differences between their experiences in an airport and what they desired were greater than the degree to which the experiences differed from expectations. In addition, they likely felt better about this gap than they did about the difference between

the actual experiences and expectations. Hence, hypothesis 3a examined the extent to which these two constructs were significantly different and which congruency had greater discrepancy.

**H3b: The effect of desires congruency as direct antecedents of airport attribute satisfaction is greater than the effect of expectations congruency**

Spreng (1993) examined the effect of desires congruency and expectations congruency on attribute satisfaction. Even though both concepts influenced attribute satisfaction, the direct comparison between the two congruencies revealed that desires congruency was more important in the formation of attribute satisfaction than was expectations congruency. Hypothesis 3b compares the two congruencies regarding airport service elements directly to determine which had a more powerful effect on airport attribute satisfaction.

## **CHAPTER IV**

### **FINDINGS**

#### **Descriptive Findings**

##### *Demographic characteristics*

The sampling procedure conducted online that was described in Chapter III yielded a total of 320 responses – 235 at ICN and 85 at LAX. The response rate was 68.1 % for the 470 email invitations successfully sent: 66.6 % from ICN and 72.6% from LAX. Of the 320 responses, 262 (55.7%) were analyzed in the current study because 58 respondents started the survey but did not complete their questionnaire, thus these were excluded in data analysis. In the study of Tierney (2000), participants who completed the first prophase survey and agreed to participate in the next survey via email had a response rate for the postphase survey of 37.3% after 47 days. The current study had a 30.8% higher response rate than this previous study. Possible reasons for the higher response rate include that the researcher 1) personally met potential participants at the airports, 2) asked the participants to choose a preferred date to respond to the questionnaire, and/or 3) received a ball point pen labeled with the study name and the researcher's email address.

TABLE 4-1  
Demographic characteristics of the sample

Variables	<u>Total</u>		<u>ICN</u>		<u>LAX</u>	
	<i>(n=262)</i>		<i>(n=197)</i>		<i>(n=65)</i>	
Categories	Freq.	(%)	Freq.	(%)	Freq.	(%)
<b>Gender</b>						
Male	<b>146</b>	<b>55.7</b>	114	57.9	32	49.2
Female	<b>93</b>	<b>35.5</b>	66	33.5	27	41.6
	<b>23</b>	<b>8.8</b>	17	8.6	6	9.2
<b>Age</b>						
< 20 years	<b>3</b>	<b>1.2</b>	2	1.0	1	1.5
20 – 29 years	<b>85</b>	<b>32.4</b>	54	27.4	31	47.7
30 – 39 years	<b>89</b>	<b>34.0</b>	72	36.6	17	26.2
40 – 49 years	<b>20</b>	<b>7.6</b>	16	8.1	4	6.2
50 – 59 years	<b>22</b>	<b>8.4</b>	21	10.7	1	1.5
60 and above	<b>15</b>	<b>5.7</b>	13	6.6	2	3.1
	<b>28</b>	<b>10.7</b>	19	9.6	9	13.9
<b>Ethnicity</b>						
American Indian or Alaska Native	<b>2</b>	<b>.8</b>	2	1.0	-	-
Asian	<b>120</b>	<b>45.8</b>	105	53.3	15	23.1
Black or African American	<b>10</b>	<b>3.8</b>	8	4.1	2	3.1
Hispanic or Latino	<b>6</b>	<b>2.3</b>	1	0.5	5	7.7
Native Hawaiian or Pacific Islanders	<b>3</b>	<b>1.2</b>	2	1.0	1	1.5
White	<b>99</b>	<b>37.8</b>	63	32.0	36	55.4
	<b>22</b>	<b>8.4</b>	16	8.1	6	9.2
<b>Education</b>						
Less than high school	<b>1</b>	<b>0.4</b>	1	0.5	-	-
High school / GED	<b>15</b>	<b>5.7</b>	13	6.6	2	3.1
Some college	<b>19</b>	<b>7.3</b>	11	5.6	8	12.3
2-year college degree	<b>36</b>	<b>13.7</b>	35	17.8	1	1.5
4-year college degree	<b>81</b>	<b>30.9</b>	58	29.4	23	35.4
Masters degree	<b>54</b>	<b>20.6</b>	35	17.8	19	29.2
Doctoral degree	<b>8</b>	<b>3.1</b>	7	3.6	1	1.5
Professional degree (JD, MD)	<b>4</b>	<b>1.5</b>	3	1.5	1	1.5
	<b>44</b>	<b>16.8</b>	34	17.3	10	15.4
<b>Income</b>						
< \$20,000	<b>42</b>	<b>16.0</b>	25	12.7	17	26.2
\$ 20,000 – 29,999	<b>28</b>	<b>10.7</b>	19	9.6	9	13.9
\$ 30,000 – 39,999	<b>26</b>	<b>9.9</b>	21	10.7	5	7.7
\$ 40,000 – 49,999	<b>24</b>	<b>9.2</b>	19	9.6	5	7.7
\$ 50,000 – 59,999	<b>17</b>	<b>6.5</b>	14	7.1	3	4.6
\$ 60,000 – 69,999	<b>7</b>	<b>2.7</b>	6	3.1	1	1.5
\$ 70,000 – 79,999	<b>7</b>	<b>2.7</b>	6	3.1	1	1.5
\$ 80,000 – 89,999	<b>9</b>	<b>3.4</b>	6	3.1	3	4.6
\$ 90,000 and above	<b>42</b>	<b>16.0</b>	33	16.8	9	13.9
	<b>60</b>	<b>22.9</b>	48	24.4	12	18.5



Table 4-1 shows the demographic characteristics of the effective sample. Male participants were 55.7% of the total participants. The average age of the participants was 35.5 years, and the median age was 32. The ethnicities of the sample consisted of 45.8% Asian, 37.8% White, 3.8% Black or African American, 2.3% Hispanic or Latino, 1.2% Native Hawaiian or Pacific Islander, and 0.8% American Indian or Alaska Native. Of the sample, 77.1% had completed at least some college. The median annual household income range was between \$40,000 and \$49,999. Although the group had a relatively high education level, 36.6% of the sampled group earned less than \$40,000 annually.

In addition to demographic questions, participants answered questions about their air travel including: frequency of air travel per year and purposes of the current trip. The average frequency of air travel was 5.97 flights per year, and the median value was 2.5. The question for purpose of the current trip allowed respondents to select all that applied. The main purpose of their travel were: sightseeing or pleasure (48.1%), work/business (35.5%), visiting friends or relatives (24.0%), school-related (11.5%), sport event (1.9%), and shopping (1.5%).

#### *Descriptive statistics*

The descriptive statistics of the data were estimated with SPSS 18.0. First, values for mean, standard error, and median of every item in the constructs were estimated (see Table 4-2). Mean values of the observed variables in desires congruency and expectations congruency displayed a similar pattern. For example, the first six items in these latent variables – corresponded to signage, convenience, ground transportation, fastness among many processes, cleanliness, and airport employees – indicated that

airline passengers' actual experiences of each service attribute differed in a positive way from what they desired and expected. In contrast, the rest of the three items, concerning diversity, comfortable areas, and décor had negative values of desires congruency and expectations congruency. Airport performances for these service attributes were slightly different from their desires and expectations; they felt bad about these discrepancies. The observed variables of airport attribute satisfaction had a similar sequence; airline passengers were less satisfied with two service elements—diversity and comfortable areas—than with the other seven elements.

Fodness and Murray (2007) argued that airport service attributes are categorized by three dimensions: servicescape, service personnel, and services (see Table 3-2). All items of servicescape and service personnel exceeded passengers' desires and expectations. Among items under the dimension of services, passengers experienced cleaner airports than their desires and expectations.

The means of the four measures of overall satisfaction with an airport were larger than 5. Fornell (1995) asserted that the distribution of satisfaction and quality ratings is always negatively skewed. Negative skewness assumes a reasonably high mean and conveys that people purchase what they like and do not buy again what failed to satisfy them (Fornell, 1995); Figure 4-1 presented below describes the negative skewness. The results of a normality test are reported in the next section, and the skewness value of each item is displayed.

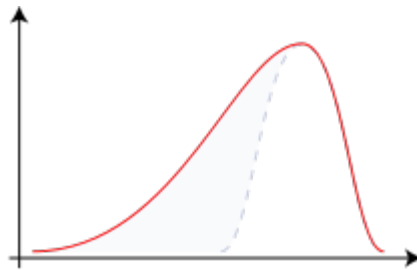


FIGURE 4-1. Negative skewness

As seen in Table 4-2, the answers of respondents from the two airports are different from each other. In order to check the differences between ICN and LAX, paired sample t-test was employed in SPSS 18.0. The paired sample t-test compared means of every observed variable from ICN to the corresponding variable from LAX (ICN-LAX). All pairs of airport service attributes had statistically significant  $t$ -values;  $p$ -values less than the alpha level, .05 confirmed the differences between ICN and LAX (see Table 4-3). In other words, passengers in ICN received better performances that exceeded their desires and expectations and were more satisfied with airport services and their overall airport experiences than were those in LAX. In particular, the largest mean differences were discovered in DC2CON (desires congruency regarding convenient facilities such as baggage carts or free Wi-Fi), EC2CON (expectations congruency regarding convenient facilities such as baggage carts or free Wi-Fi), and ATT2CON (attribute satisfaction with convenient facilities such as baggage carts or free Wi-Fi) (respectively, 3.37, 3.28, and 2.14;  $t$ -value=7.94, 8.93, and 14.95), corresponding to convenient facilities such as baggage carts and free Wi-Fi. However, the current research

TABLE 4-2  
Descriptive statistics

Variables	<b>Total</b> ( <i>n</i> =262)			<b>ICN</b> ( <i>n</i> =197)			<b>LAX</b> ( <i>n</i> =65)		
	Mean	Std. Error	Median	Mean	Std. Error	Median	Mean	Std. Error	Median
<b>Desires Congruency</b>									
DC1SIG	<b>.794</b>	<b>.198</b>	<b>1</b>	1.279	.203	2	-.677	.471	0
DC2CON	<b>.500</b>	<b>.227</b>	<b>1</b>	1.345	.175	2	-2.050	.655	0
DC3GTR	<b>.790</b>	<b>.190</b>	<b>2</b>	1.157	.188	2	-.320	.491	0
DC4FST	<b>.570</b>	<b>.242</b>	<b>1</b>	1.350	.209	2	-1.780	.662	0
DC5CLN	<b>1.180</b>	<b>.169</b>	<b>2</b>	1.731	.133	2	-.480	.498	0
DC6EMP	<b>1.020</b>	<b>.162</b>	<b>1</b>	1.421	.154	2	-.220	.425	0
DC7DIV	<b>-.344</b>	<b>.230</b>	<b>0</b>	.250	.223	0	-2.138	.587	0
DC8COA	<b>-.859</b>	<b>.238</b>	<b>0</b>	-.168	.230	0	-2.954	.591	0
DC9DEC	<b>-.763</b>	<b>.237</b>	<b>0</b>	-.470	.261	0	-1.661	.519	0
<b>Expectations Congruency</b>									
EC1SIG	<b>1.370</b>	<b>.181</b>	<b>2</b>	1.746	.196	2	.220	.396	0
EC2CON	<b>1.140</b>	<b>.219</b>	<b>2</b>	1.959	.196	2	-1.340	.547	0
EC3GTR	<b>1.460</b>	<b>.192</b>	<b>2</b>	1.812	.197	2	.400	.471	1
EC4FST	<b>1.420</b>	<b>.208</b>	<b>2</b>	1.853	.216	2	.090	.494	1
EC5CLN	<b>1.440</b>	<b>.150</b>	<b>2</b>	1.934	.132	2	-.050	.405	0
EC6EMP	<b>1.160</b>	<b>.174</b>	<b>2</b>	1.624	.170	2	-.260	.435	0
EC7DIV	<b>-.137</b>	<b>.203</b>	<b>0</b>	.320	.209	0	-1.538	.483	0
EC8COA	<b>-.332</b>	<b>.199</b>	<b>0</b>	.147	.199	0	-1.785	.492	0
EC9DEC	<b>-.389</b>	<b>.187</b>	<b>0</b>	-.200	.215	0	-.969	.370	0
<b>Airport Attribute Satisfaction</b>									
ATT1SIG	<b>5.26</b>	<b>.081</b>	<b>5</b>	5.560	.081	6	4.320	.167	5
ATT2CON	<b>5.00</b>	<b>.099</b>	<b>5</b>	5.520	.088	6	3.420	.196	3
ATT3GTR	<b>5.29</b>	<b>.087</b>	<b>5</b>	5.600	.090	6	4.350	.177	5
ATT4FST	<b>5.12</b>	<b>.099</b>	<b>5</b>	5.530	.087	6	3.890	.243	5
ATT5CLN	<b>5.81</b>	<b>.087</b>	<b>6</b>	6.220	.069	6	4.540	.214	5
ATT6EMP	<b>5.27</b>	<b>.078</b>	<b>5</b>	5.530	.079	6	4.490	.171	5
ATT7DIV	<b>4.61</b>	<b>.100</b>	<b>5</b>	4.950	.107	5	3.600	.191	4
ATT8COA	<b>4.60</b>	<b>.097</b>	<b>5</b>	5.010	.099	5	3.420	.185	3
ATT9DEC	<b>5.41</b>	<b>.093</b>	<b>5</b>	4.780	.105	5	4.050	.188	5
<b>Overall Satisfaction</b>									
OV1SATI	<b>5.41</b>	<b>.087</b>	<b>6</b>	5.870	.072	6	4.020	.193	4
OV2PLEA	<b>5.24</b>	<b>.079</b>	<b>5</b>	5.640	.072	6	4.050	.162	4
OV3CONT	<b>5.24</b>	<b>.081</b>	<b>5</b>	5.590	.078	6	4.180	.168	4
OV4DELI	<b>5.07</b>	<b>.074</b>	<b>5</b>	5.390	.078	5	4.030	.122	4

directly measured desires congruency and expectations congruency instead of estimating desires, expectation, and perceived performance separately and comparing differences.

Thus, the study was not able to directly investigate to the extent to which the levels of

desires or expectations themselves were different between passengers at both ICN and LAX.

TABLE 4-3  
Paired sample t-test between ICN and LAX (ICN-LAX)

Pair of airport attributes between ICN & LAX	Mean Difference	Standard Error	Critical ratio ( <i>t</i> -value)	<i>p</i> -value
Desires congruency				
DC1SIG	1.949	.338	5.775	< .001
DC2CON	3.371	.425	7.939	< .001
DC3GTR	1.477	.358	4.127	< .001
DC4FST	3.112	.425	7.279	< .001
DC5CLN	2.203	.293	7.527	< .001
DC6EMP	1.635	.285	5.737	< .001
DC7DIV	2.365	.398	5.947	< .001
DC8COA	3.173	.408	7.773	< .001
DC9DEC	1.178	.369	3.188	= .002
Expectations congruency				
EC1SIG	1.533	.294	5.219	< .001
EC2CON	3.284	.368	8.925	< .001
EC3GTR	1.416	.345	4.101	< .001
EC4FST	1.761	.365	4.824	< .001
EC5CLN	1.980	.262	7.548	< .001
EC6EMP	1.883	.302	6.233	< .001
EC7DIV	1.848	.338	5.468	< .001
EC8COA	1.914	.327	5.860	< .001
EC9DEC	.761	.299	2.548	= .012
Airport attribute satisfaction				
ATT1SIG	1.284	.133	9.649	< .001
ATT2CON	2.137	.143	14.947	< .001
ATT3GTR	1.289	.140	9.211	< .001
ATT4FST	1.675	.167	10.057	< .001
ATT5CLN	1.731	.143	12.111	< .001
ATT6EMP	1.081	.130	8.291	< .001
ATT7DIV	1.386	.156	8.897	< .001
ATT8COA	1.624	.138	11.732	< .001
ATT9DEC	.772	.157	4.928	< .001
Overall satisfaction with an airport				
OV1SATI	1.893	.132	14.387	< .001
OV2PLEA	1.635	.116	14.062	< .001
OV3CONT	1.447	.120	12.048	< .001
OV4DELI	1.340	.105	12.815	< .001

\* alpha level is .05

## **Data Analysis**

### *Missing data*

Three categories of missing data include: missing completely at random, missing at random, and not missing at random (Little and Rubin, 2002; Rubin, 1976). According to Weston and Gore (2006), the first two categories have fewer problems than the last one, not missing at random. Unfortunately, there is no procedure to determine whether data are missing at random or not (Weston and Gore, 2006). The most common solution to missing data is to delete cases and make the data set complete, but deletion of cases or variables is not always satisfactory due to the possibilities of invalid estimation (Weisberg, 2005). Hence, Rubin (1987) proposed multiple imputation that replaces each missing value with acceptable values based on a distribution of possibilities. SPSS was utilized to perform the multiple imputation to manage missing data. The missing values (7.1%) were replaced with multiple imputations. Respondents were not forced to answer every question; so, there were several questions that some of respondents omitted.

### *Normality test*

In order to check the distribution of the data, a normality test was conducted with the use of SPSS 18.0. The test outcomes show all skewness values between  $-2$  and  $+2$ , which meant the current data were accepted as having normal distribution (see Table 4-4) (Weston and Gore, 2006; Chou and Bentler, 1990). Kurtosis absolute values of items on airport cleanliness were greater than 2.0. However, an absolute value of kurtosis greater than 10.0 indicates a problem (Weston and Gore, 2006). Thus the kurtosis index of these items also fell into the acceptable range.

TABLE 4-4

## Normality test

Variable/Item	Skewness	Kurtosis
<b>Desires Congruency</b>		
DC1SIG Clear/Visual SIGNS to direct to airport services /facilities	-.715	1.898
DC2CON CONVENIENT facilities available (carts, free-Wi-Fi, etc.)	-1.077	1.931
DC3GTR A variety of GROUND TRANSPORTATION_options to the nearest city	-1.212	2.892
DC4FST FASTNESS in check-in, security check, immigration, and baggage claim	-1.217	1.971
DC5CLN CLEANLINESS (i.e., overall airport, restrooms, etc)	-1.639	6.192
DC6EMP Courteous and Knowledgeable airport EMPLOYEES	-.840	3.901
DC7DIV DIVERSITY in shops and restaurants	-.961	1.337
DC8COA COMFORTABLE areas to nap, read, and do business	-1.141	.878
DC9DEC DÉCOR that matches with the local culture	-.987	.832
<b>Expectations Congruency</b>		
EC1SIG Clear/Visual SIGNS to direct to airport services /facilities	-.367	3.019
EC2CON CONVENIENT facilities available (carts, free-Wi-Fi, etc.)	-.818	2.231
EC3GTR A variety of GROUND TRANSPORTATION_options to the nearest city	-.783	3.951
EC4FST FASTNESS in check-in, security check, immigration, and baggage claim	-.804	2.923
EC5CLN CLEANLINESS (i.e., overall airport, restrooms, etc)	-1.044	5.324
EC6EMP Courteous and Knowledgeable airport EMPLOYEES	-1.066	3.561
EC7DIV DIVERSITY in shops and restaurants	-.954	2.454
EC8COA COMFORTABLE areas to nap, read, and do business	-1.248	2.807
EC9DEC DÉCOR that matches with the local culture	-1.309	3.000
<b>Attribute Satisfaction</b>		
ATT1SIG Clear/Visual SIGNS to direct to airport services /facilities	-.833	.406
ATT2CON CONVENIENT facilities available (carts, free-Wi-Fi, etc.)	-.682	-.260
ATT3GTR A variety of GROUND TRANSPORTATION_options to the nearest city	-.783	.369
ATT4FST FASTNESS in check-in, security check, immigration, and baggage claim	-1.081	.707
ATT5CLN CLEANLINESS (i.e., overall airport, restrooms, etc)	-1.521	1.835
ATT6EMP Courteous and Knowledgeable airport EMPLOYEES	-.751	.501
ATT7DIV DIVERSITY in shops and restaurants	-.414	-.459
ATT8COA COMFORTABLE areas to nap, read, and do business	-.463	-.417
ATTDEC DÉCOR that matches with the local culture	-.442	-.316
<b>Overall Satisfaction</b>		
OV1SATI Dissatisfied/Satisfied	-1.053	.492
OV2PLEA Displeased/Pleased	-.619	-.199
OV3CONT Frustrated/Contented	-.803	.306
OV4DELI Terrible/Delighted	-.252	-.167

According to Peterson and Wilson (1992), the distribution of customer satisfaction is often negatively skewed, too. In other words, the satisfaction rating of services and products is positively biased (Peterson and Wilson, 1992). In the item

ATT5CLN (attribute satisfaction with cleanliness) in particular, the mean value was 5.81, with 10.0% of respondents marked below the midpoint, and 85.5% above the midpoint.

## **Measurement Properties**

### *Construct validity*

One of the advantages of CFA/SEM is its ability to assess the construct validity of a proposed measurement theory. Construct validity is the extent to which a set of measured items actually reflects the theoretical latent construct those items are designed to measure (Hair, Black, Babin, Anderson, and Tatham, 2006). Thus, it examines the accuracy of measurement.

### *Factor analysis*

An exploratory factor analysis was performed on the items in the constructs with SPSS 18.0 including desires congruency, expectations congruency, and attribute satisfaction. Exploratory factor analysis assists to discover and identify the latent common factor variables, which show correlations of the manifest variables with the latent common factor variables (Mulaik, 1987). Only one factor was found in three constructs, which was different from the previous study (Fodness and Murray, 2007). The current study utilized two ways of extraction method in an exploratory factor analysis with SPSS: principal components and principal axis factoring. Both methods produced one factor of each construct. The current researcher selected the nine airport service attributes on the basis of the airport service quality themes (Fodness and Murray, 2007) along three dimensions: servicescape, service personnel, and services (see Table



3-2). In the process of reducing the number of the attributes when developing the questionnaire, a few items were combined, and a new item was created (see Table 3-2). The current researcher predicted that three factors would be found on the basis of the previous study (Fodness and Murray, 2007), but all three constructs have a single factor in this study.

#### *Cronbach's coefficient*

Cronbach's coefficient alpha is the most widely accepted measure to examine scale reliability (Cortina, 1993), which is thought to provide a reasonable estimate of the true reliability of the items, when the items are not weighted (Clark-Carter, 2004). Hence, reliability of the scales of the current study was tested with Cronbach's coefficient using SPSS 18.0. Coefficient alpha varies between 0 and 1 with values greater than 0.70 being considered acceptable (Netemeyer, Bearden, and Sharma, 2003). The reliability coefficients for the scales used in this study are reported in Table 4-5 and all were deemed acceptable.

TABLE 4-5

## Scale reliabilities

Scale Items	Coefficient $\alpha$	Mean	S.D.
Desires		.794	3.212
Congruency		.503	3.677
		.790	3.076
		.569	3.909
	.827	1.183	2.738
	(.777)*	1.015	2.626
		-.345	3.730
		-.859	3.854
		-.763	3.828
Expectations		1.367	2.937
Congruency		1.141	3.538
		1.462	3.107
		1.416	3.373
	.812	1.443	2.436
	(.794)	1.156	2.822
		-.137	3.292
		-.332	3.228
		-.389	3.020
Airport		5.260	1.310
Attribute		5.000	1.606
Satisfaction		5.290	1.409
		5.120	1.605
	.895	5.810	1.405
	(.866)	5.270	1.265
		4.610	1.621
		4.610	1.566
		4.600	1.513

\* Coefficient  $\alpha$  values in the parentheses were measured with only items in each construct analyzed in the final overall model.

\*\* Items with bold in each construct indicated the items included in the final overall model.

*Discriminant validity*

Discriminant validity refers to the difference or similarity of the constructs between one another (Clark-Carter, 2004). A rule-of-thumb cutoff for the estimate is  $r = .85$  (Kline, 2005). Therefore, intercorrelations higher than .85 indicate an overlap of concept definitions or correlations among construct indicators (Huang, 2009).

Intercorrelations between constructs were obtained with the use of AMOS 18.0 (Anderson and Gerbing, 1988).

TABLE 4-6  
Implied correlations between constructs

	1	2	3	4
1 Desires Congruency	1.000			
2 Expectations Congruency	.837	1.000		
3 Airport Attribute Satisfaction	.672	.648	1.000	
4 Overall Satisfaction with an Airport	.591	.571	.880	1.000

As expected, desires congruency and expectations congruency were highly correlated with  $r = .837$  (see Table 4-6) because both constructs had the exact same items under the different questions and were placed close together. Spreng et al. (1996) also reported .73 for the implied correlations between desires congruency and expectations congruency. In addition, both congruencies were measured by the comparison of an airport service performance to desires or expectations; thus, each congruency inevitably shared a concept—performance. These two constructs were also indicators of airport attribute satisfaction. Moreover, the correlations did not exceed the suggested threshold,  $r = .85$ . Therefore, the relations between these two constructs were not regarded as problematic.

The other notable high correlations appeared in the relationship between airport attribute satisfaction and overall satisfaction with an airport, with  $r = .880$ . In this study, the relationship between airport attribute satisfaction and overall satisfaction with an airport was hypothesized. As other studies have shown (Spreng et al., 1996; Spreng

1993), attribute satisfaction is typically highly correlated with overall satisfaction:  $r = .67$  (Spreng et al., 1996) and  $r = .80$  (Spreng, 1993).

### **Measurement Model**

Measurement models in structural equation modeling (SEM) display the relationships between the observed variables and the corresponding latent variables: exogenous and endogenous variables, respectively (Weston and Gore, 2006).

Confirmatory factor analysis (CFA) was used to test the measurement models in the current study.

#### *Desires congruency*

Kline (2005) described two types of measurement models: first-order and second-order. First-order models explain the relationships among latent variables and observed variables. The result of exploratory factor analysis showed the construct, desires congruency was one factor. Thus, all nine items were directly attached with error terms to the endogenous variable (see Figure 4-2).

Byrne (2001) delivered two types of information-related to misfit of a model: standardized residual covariance and modification index. First, the absolute values of the standardized residual covariance greater than 2.58 indicate a higher covariance between the two observed variables. In addition, modification indices (MIs) also reflect “the extent to which the hypothesized model is appropriately described” (Byrne, 2001, p. 90). MI values are closer to zero as parameters are freely estimated (Byrne, 2001). Furthermore, values of path coefficients greater than .60 indicate good relationships

between the items and the latent variable they belong to (Hair et al., 2006). Thus, items with lower path values were excluded.

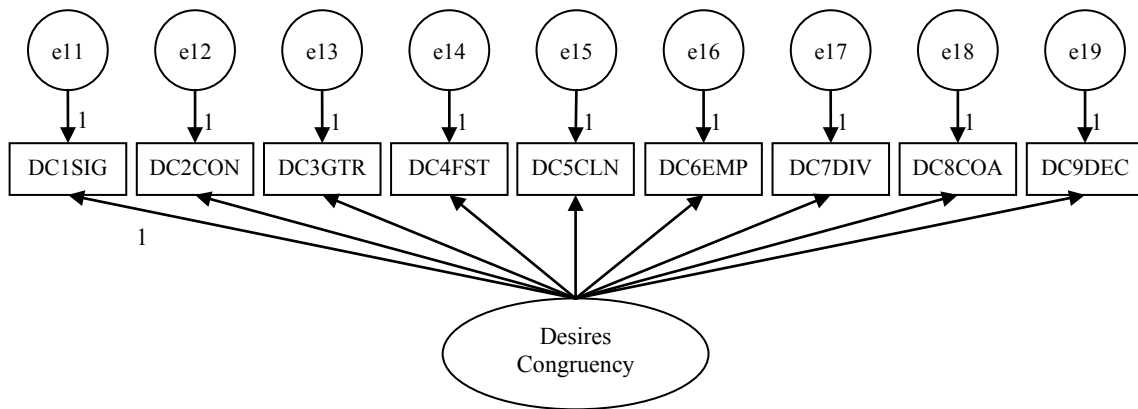


FIGURE 4-2. Proposed measurement model of desires congruency

Based on coefficient paths, values of the standardized residual covariance matrix and MIs of the first-order measurement model, two items – DC9DEC (décor) and DC2CON (convenience) – were excluded. The regression weight of DC9DEC in MI was 34.6, the largest value; the standardized residual covariance matrix displayed 4.1 related to DC8COA. The path value was .50 in the medium range. According to Fodness and Murray (2007), both DC9DEC and DC8OA were applied to services dimension (see Table 3-2), and covariance between the two attributes also indicated higher correlations. Thus, DC9DEC with higher regression weight in MI was decided to be deleted. The next dropped item, DC2CON had the highest regression weights in MI at 5.4. However, there

was no evident value in the standardized residual covariances. Therefore, the modified measurement model of desires congruency (see Figure 4-3) provided a chi-squared value of 37.9 with 14 degrees of freedom: RMSEA .081, CFI .945, NFI .917, and AGFI .919 (see Table 4-7). These major indices fell into an acceptable range.

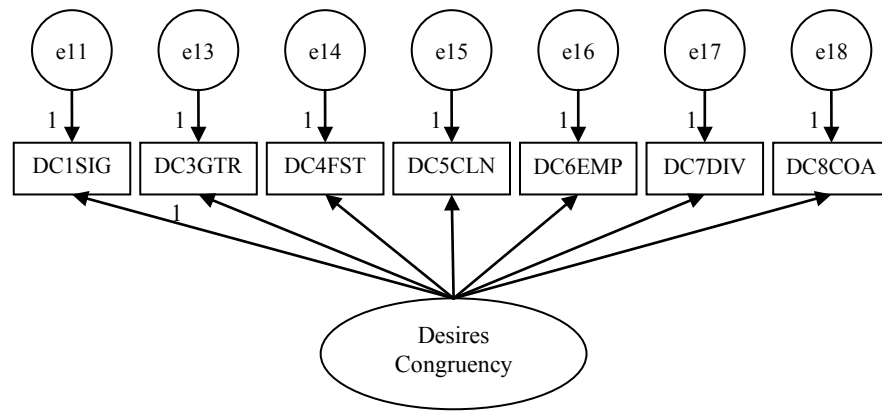


FIGURE 4-3. Modified measurement model of desires congruency

TABLE 4-7

Fit indices of desires congruency measurement model

	$\chi^2$	df	RMSEA	CFI	NFI	AGFI
Proposed	127.2	27	.119	.847	.816	.830
Modified	37.9	14	.081	.945	.917	.919

#### *Expectations congruency*

Due to the result of exploratory factor analysis, expectations congruency was also deemed to have a single factor. Thus, the measurement model of expectations

congruency was represented as first-order, in which all nine observed items were directly attached with error terms to the construct (see Figure 4-4).

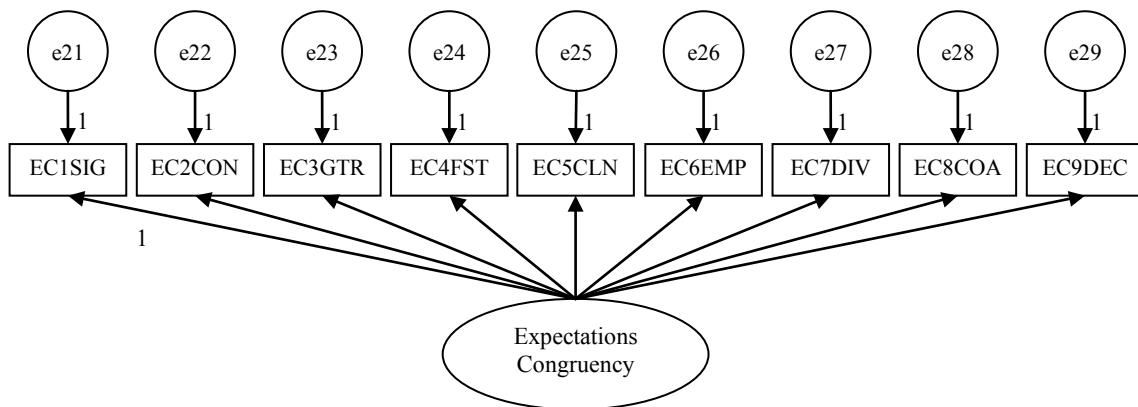


FIGURE 4-4 .Proposed measurement model of expectations congruency

As previously mentioned, the standardized residual covariance matrix and the MI suggested excluding two items, including EC9DEC (décor) and EC8COA (comfortable areas), one by one. The standardized residual covariance matrix had a problematic value of 3.6 between EC8COA and EC9DEC. MI also displayed 19.0 as the regression weight of EC9DEC. As aforementioned, these two items belonged to services dimension (Fodness and Murray, 2007; see Table 3-2); thus, the first item was dropped. Then the measurement model was run again with the eight observed variables. There was no problematic standardized residual covariance value; the MI of EC8COA was large, 12.2. The modified measurement model of expectations congruency (see Figure 4-5) provided a chi-squared value of 24.0 with 14 degrees of freedom: RMSEA .052, CFI.977,

NFI .947, and AGFI .949 (see Table 4-8). All the fit indices suggested that the modified model had a good model-fit.

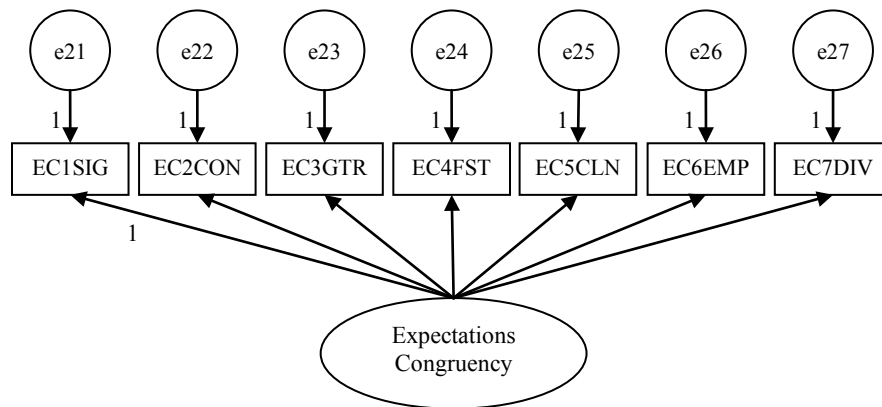


FIGURE 4-5. Modified measurement model of expectations congruency

TABLE 4-8

Fit indices of expectations congruency measurement model

	$\chi^2$	df	RMSEA	CFI	NFI	AGFI
Proposed	92.9	27	.097	.884	.847	.873
Modified	24.0	14	.052	.977	.947	.949

#### *Airport attribute satisfaction*

The measurement model of airport attribute satisfaction was also represented by a first-order model. Through exploratory factor analysis, the endogenous variables found one factor; thus, all nine observed variables were directly attached to the construct with error terms (see Figure 4-6).



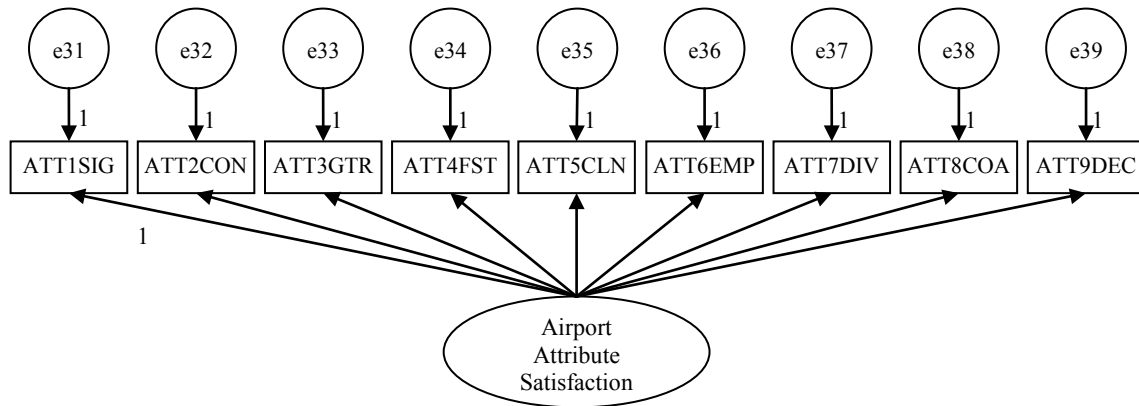


FIGURE 4-6. Measurement model of airport attribute satisfaction

The measurement model of airport attribute satisfaction was developed following the same procedures as desires congruency and expectations congruency. No values larger than 2.58 were found in the standardized residual covariance matrix. MI indicated that ATT7DIV was problematic with large covariances, 10.5, and regression weight, 20.4. The value of RMSEA was .087 without ATT7DIV; thus, additional modification was selected. The next excluded item was ATT8COA because it has the largest regression weights, 10.4 in MI. Finally, seven items in the construct were analyzed without ATT7DIV (diversity) and ATT8COA (comfortable areas). All the indices shown in Table 4-9 fell into the acceptable range that confirmed a good fit (chi-squared = 10.8 with 14 degrees of freedom, RMSEA = .000, CFI = .999, NFI = .985, and AGFI = .976). The modified measurement model is displayed in Figure 4-7.

TABLE 4-9

Fit indices of airport attribute satisfaction model

	$\chi^2$	df	RMSEA	CFI	NFI	AGFI
Proposed	94.8	27	.098	.938	.916	.865
Modified	10.8	14	.000	.999	.985	.976

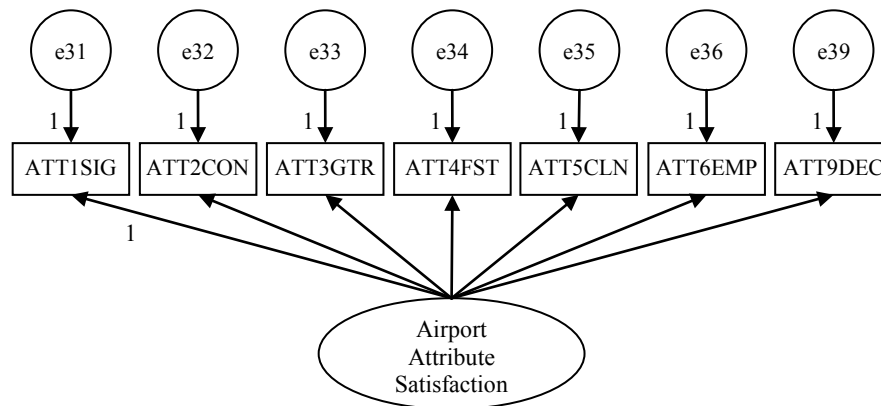


FIGURE 4-7. Modified measurement model of airport attribute satisfaction

*Overall satisfaction with an airport*

Tourist's overall satisfaction with an airport was measured with four items. The measurement model of the construct (see Figure 4-8) did not need to exclude any items due to good fit (see Table 4-10).

TABLE 4-10

Fit indices of overall satisfaction measurement model

	$\chi^2$	df	RMSEA	CFI	NFI	AGFI
Proposed	3.3	2	.051	.999	.997	.967

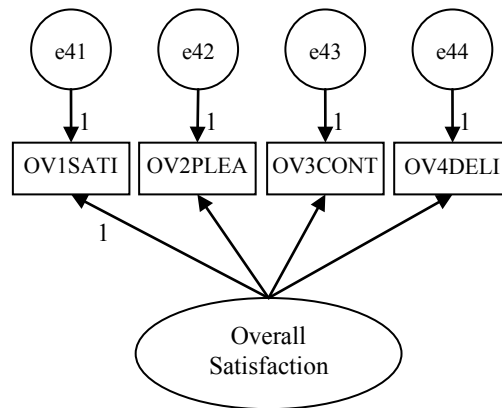


FIGURE 4-8. Proposed measurement model of overall satisfaction

#### *Overall model*

The measurement model depicts the relationships between the latent variables and their observed variables (Byrne, 2001). In addition, the measurement model focuses on whether the instrument is appropriate to measure the underlying constructs designed to measure. Furthermore, misfit of the model can be found prior to testing the full model by testing the measurement model.

The overall measurement model proposed (see Figure 4-9) yielded a poor model fit (see Table 4-11). As followed by Byrne (2001), the standardized residual covariance and MI were analyzed in order to confirm exclusion of observed variables. DC1SIG (signs) was the first consideration due to its low loading, .50 and high regression weight in MI. However, RMSEA increased from .118 to .119 by deleting the item. Meanwhile, EC4FST (fastness) was highly covaried with many items – in particular DC4FST and ATT4FST and had the largest regression weight with 84.1 in MI. Thus, EC4FST was

dropped instead of DC1SIG. Another problematic item, DC3GTR (ground transportation) was found due to its greatest weight with 83.4 in MI. This item was covaried with observed variables referred to signs (i.e., DC1SIG, EC1SIG, and ATT1SIG) as well as EC3GTR and ATT3GTR. Fodness and Murray (2007) investigated these two airport attributes were located in the same dimension, servicescape and loaded on the same factor, effectiveness. Therefore, the item DC3GTR was determined to be pulled out.

Additionally, the results of MIs suggested to correlate two pairs of error terms in desires congruency: e15 and e17 (cleanliness and diversity, respectively) and e17 and e18 (diversity and comfortable areas, respectively). Jöreskog (1993) argued that every correlation between error terms had to be justified and interpreted. First, the three airport attributes were belonged to services dimension according to Fodness and Murray (2007) (see Table 3-2). Second, the attributes of cleanliness and comfortable areas were associated with ambience factor in particular. Therefore, error correlations between e15 and e17, and e17 and e18 can be accepted theoretically.

Finally, the overall model was modified with deletion of two observed variables in two constructs: EC4FST in expectations congruency and DC3GTR in desires congruency. In addition, two error correlations were added in desires congruency (see Figure 4-10). The modified measurement model did not yield poor goodness-of-fit statistics, chi-squared = 917.4 with 222 degrees of freedom, RMSEA = .110, CFI = .807, NFI = .762, and AGFI = .712 (see Table 4-11).

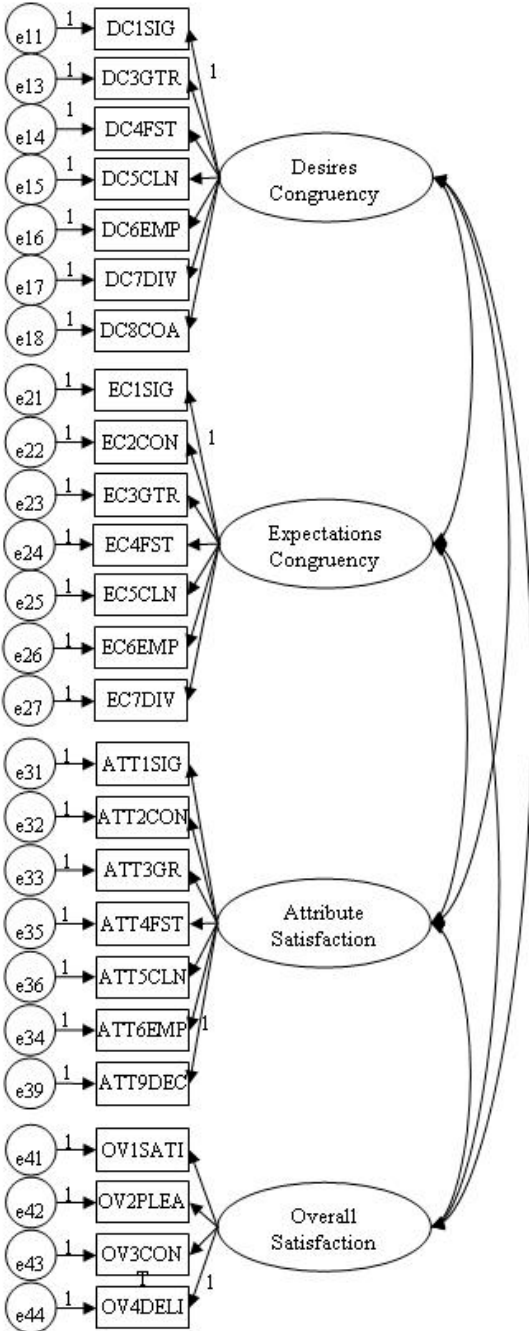


FIGURE 4-9. Proposed measurement model

As investigated in discriminant validity (see Table 4-6), desires congruency and expectations congruency were correlated with  $r = .837$ . Accordingly, error correlations were allowed between the same airport service attributes in desires congruency and expectations congruency (see Figure 4-11). The results of MIs suggested reestimating the model with the error covariance between e11 and e21 (signs), e15 and e25 (cleanliness), e16 and e26 (employees), and e17 and e27 (comfortable areas). MI values were 51.0, 48.7, 76.3, and 58.6, and expected parameter change values were 3.14, 1.70, 2.61, and 3.88, respectively. The second modified measurement model shows acceptable fit to the data with a chi-squared value of 649.0 with 218 degrees of freedom, RMEA = .087, CFI = .881, NFI = .832, and AGFI = .789 (see Table 4-11).

TABLE 4-11

Fit indices of overall measurement model

	$\chi^2$	df	RMSEA	CFI	NFI	AGFI
Proposed	1251.9	269	.118	.756	.711	.654
Modified 1	917.4	222	.110	.807	.762	.712
Modified 2	649.0	218	.087	.881	.832	.789

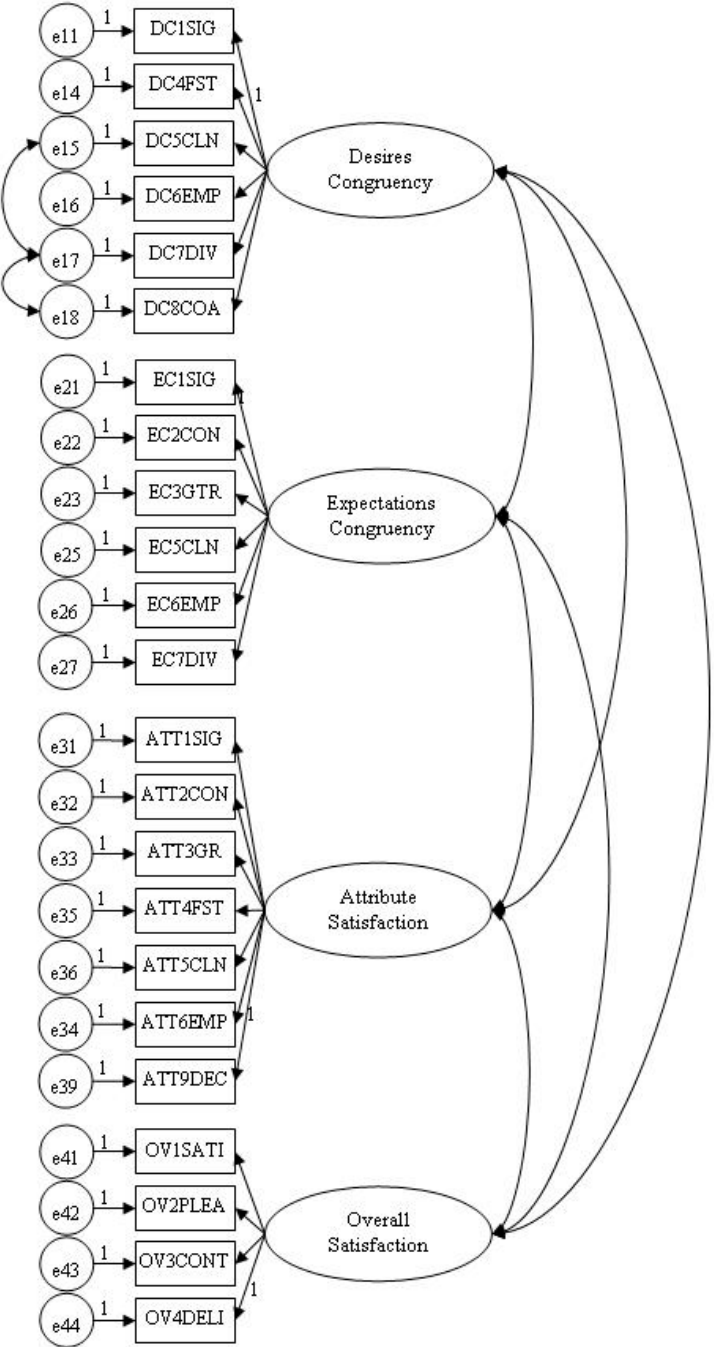


FIGURE 4-10. Modified measurement model 1

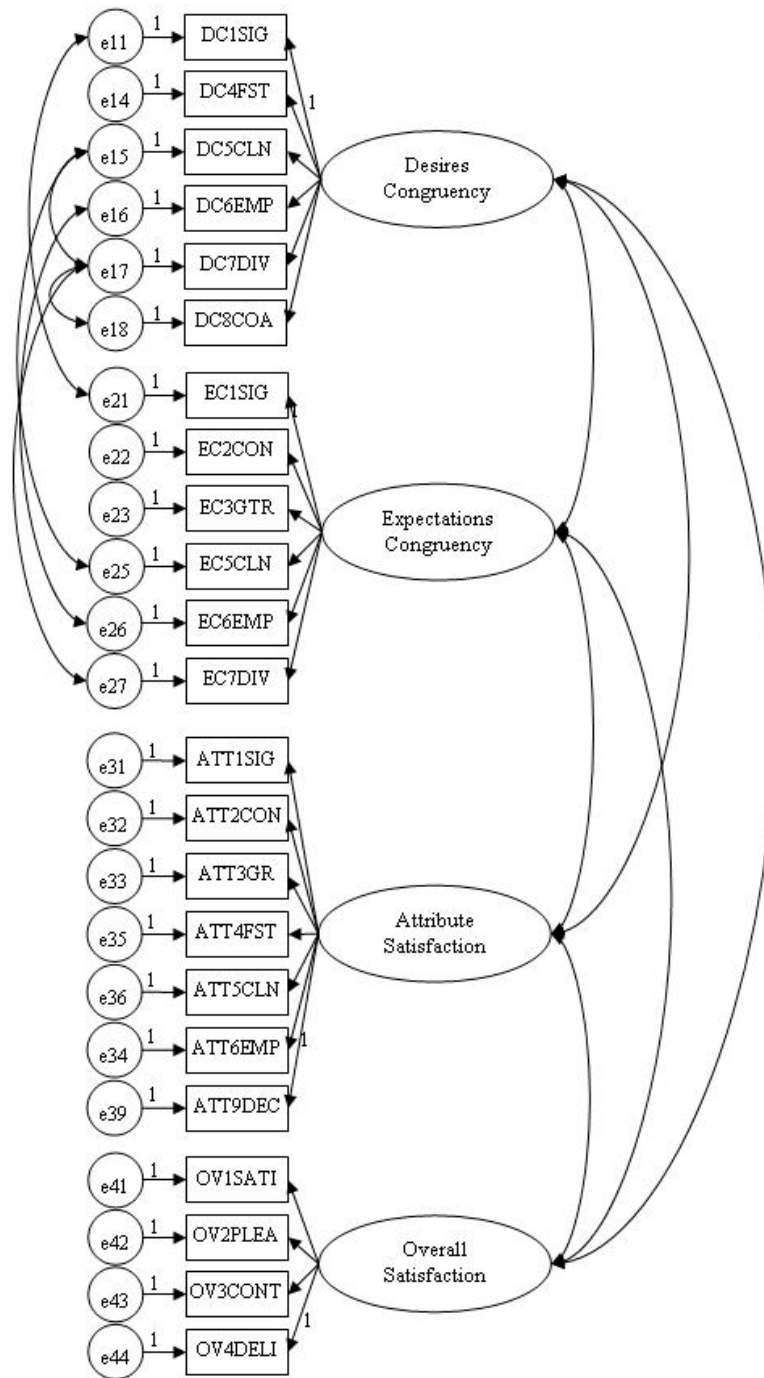


FIGURE 4-11. Modified measurement model 2



## Structural Model

The next stage of the measurement models is typically structural models (Weston and Gore, 2006). In order to measure the hypothesized links among the latent variables and the overall fit of the proposed model to the data (see Figure 4-12), the model with all constructs of interest were tested at once with AMOS 18.0 including desires congruency, expectations congruency, airport attribute satisfaction, and overall satisfaction with an airport. The fit indices suggested that the proposed model yield a poor model-fit with a chi-squared value of 1067.0 with 225 degrees of freedom, RMEA = .120, CFI = .767, NFI = .724, and AGFI = .697 (see Table 4-12).

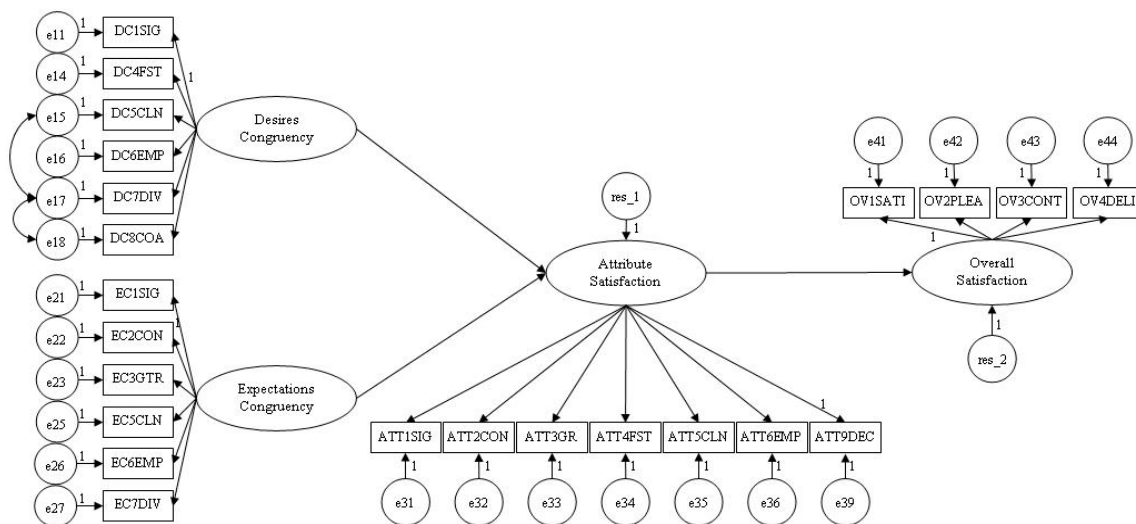


FIGURE 4-12. Testing proposed structural model

According to the implied correlation between the two latent variables, desires congruency and expectations congruency ( $r = .84$ , under the threshold of  $r = .85$ ), the highly correlated relationships among constructs were confirmed (see Table 4-6). Therefore, a correlation path between these two constructs was added and the first modified overall model was tested (see Figure 4-13). When the correlation was estimated in the overall structural model, the fit improved slightly (see Table 4-12). Still, goodness-of-fit statistics did not stay in an acceptable range (chi-squared value of 918.8 with 224 degrees of freedom, RMEA = .109, CFI = .807, NFI = .762, and AGFI = .791).

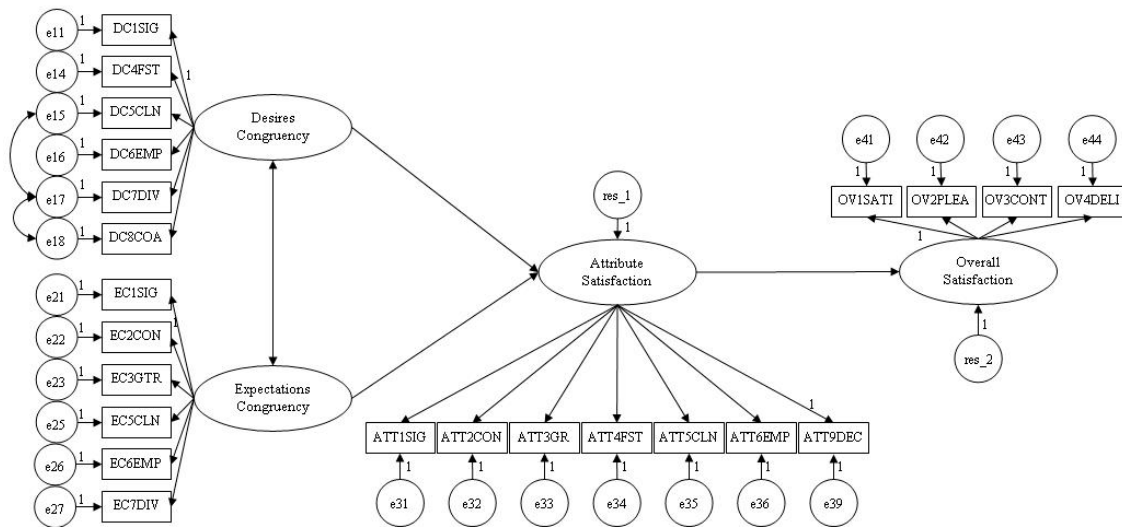


FIGURE 4-13. Testing modified structural model 1

Furthermore, as the suggestion of results in MIs, error covariances between the same airport attributes between desires congruency and expectations congruency were attached. A total of four correlation paths were drawn between e11 and e21, e15 and e25, e16 and e26, and e17 and e27: signs, cleanliness, employees, and comfortable areas, respectively (see Figure 4-14). MI values were 50.9, 48.4, 76.5, and 58.9, and expected parameter change values were 3.14, 1.69, 2.62, and 3.90, respectively. The second modified model showed a marginally acceptable fit; the chi-squared value was 650.3 with 220 degrees of freedom, RMSEA = .087, CFI = .881, NFI = .832, AGFI = .791 (see Table 4-12).

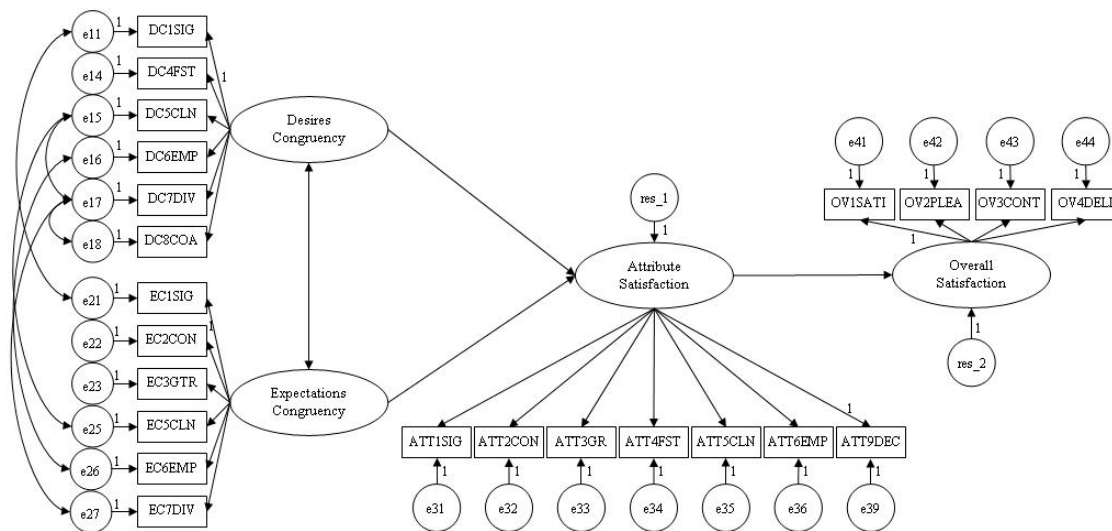


FIGURE 4-14. Testing modified structural model 2

TABLE 4-12

Fit indices of the structural model

	$\chi^2$	df	RMSEA	CFI	NFI	AGFI
Proposed	1067.0	225	.120	.767	.724	.697
Modified1	918.8	224	.109	.807	.762	.714
Modified2	650.3	220	.087	.881	.832	.791

Kline (2005) suggested that squared multiple correlations (R squared) describe the extent to which variance in each endogenous latent variable was accounted for by the antecedent variables—exogenous variables. Table 4-13 displays the endogenous variables of the proposed model, airport attribute satisfaction and overall satisfaction with an airport and their R squared values. The squared multiple correlations showed that the variance of desires congruency and expectations congruency explained 52.9% of airport attribute satisfaction, and 77.5% of the variance of overall satisfaction with an airport was explained by airport attribute satisfaction.

TABLE 4-13

Squared multiple correlations of endogenous variables

Endogenous variable	R squared value
Airport Attribute Satisfaction	.529
Overall Satisfaction with an airport	.775

### *Hypothesis testing*

Hypothesis testing was conducted in order to investigate the hypothesized relationships among the constructs in the modified overall model. Table 4-14 displays the summary of the regression paths of the overall model.

TABLE 4-14  
Regression paths of the proposed model

Regression path	Hypothesis	Standard Path Coefficient	Standard Error	Critical Ratio (t-value)	p-value
Airport Attribute Satisfaction → Overall Satisfaction	H1a	.880	.115	8.919	< .001
Desires Congruency → Airport Attribute Satisfaction	H2a	.430	.065	3.723	< .001
Expectations Congruency → Airport Attribute Satisfaction	H2b	.348	.059	3.256	= .001

**Hypothesis 1a: Airline passengers' overall satisfaction with an airport is positively related to airport attribute satisfaction.** Hypothesis 1a examined the effect of airport attribute satisfaction on airline passengers' overall satisfaction with an airport. A positive relationship between the two constructs was hypothesized. Results revealed that the proposed relationship was statistically significant ( $p < .001$ ) and positive. The standard regression coefficient for the effect of airport attribute satisfaction on overall satisfaction with an airport was .880 as shown in Table 4-15. Thus, a positive influence of attribute satisfaction on overall satisfaction with an airport was displayed. Oliver (1993) defined attribute satisfaction as the psychological fulfillment response that consumers make in evaluating performance. Attribute satisfaction influences positive

affect and has a direct effect on overall satisfaction. Therefore, hypothesis 1a was supported.

TABLE 4-15

Testing results of hypothesis 1a

Regression path	Standard Path Coefficient	Standard Error	Critical Ratio (t-value)	p-value
Airport Attribute Satisfaction → Overall Satisfaction	.880	.115	8.919	< .001

**Hypothesis 1b: The effect of desires congruency and expectations congruency is mediated by airport attribute satisfaction.** Hypothesis 1b evaluated the mediation of airport attribute satisfaction. Figure 4-15 displays the proposed model to measure the direct path of desires congruency and expectations congruency on overall satisfaction with an airport. Similar to Spreng et al. (1996), these two congruencies had no significant direct effects on overall satisfaction with an airport (.050 and .035 for desires congruency and expectations congruency, respectively; *p*-values greater than .05; see Table 4-16). The variance explained in the overall structural model also had no change as the fit of the model was only slightly decreased ( $\Delta\chi^2 = 1.3$ ; see Table 4-17). Thus, hypothesis 1b was supported. The effect of desires congruency and expectations congruency was mediated by airport attribute satisfaction.

TABLE 4-16  
Testing results of hypothesis 1b

Regression path	Standard Path Coefficient	Standard Error	Critical Ratio (t-value)	p-value
Desires congruency → Overall satisfaction with an airport	.050	.050	.645	= .519
Expectations congruency → Overall satisfaction with an airport	.035	.048	.464	= .643

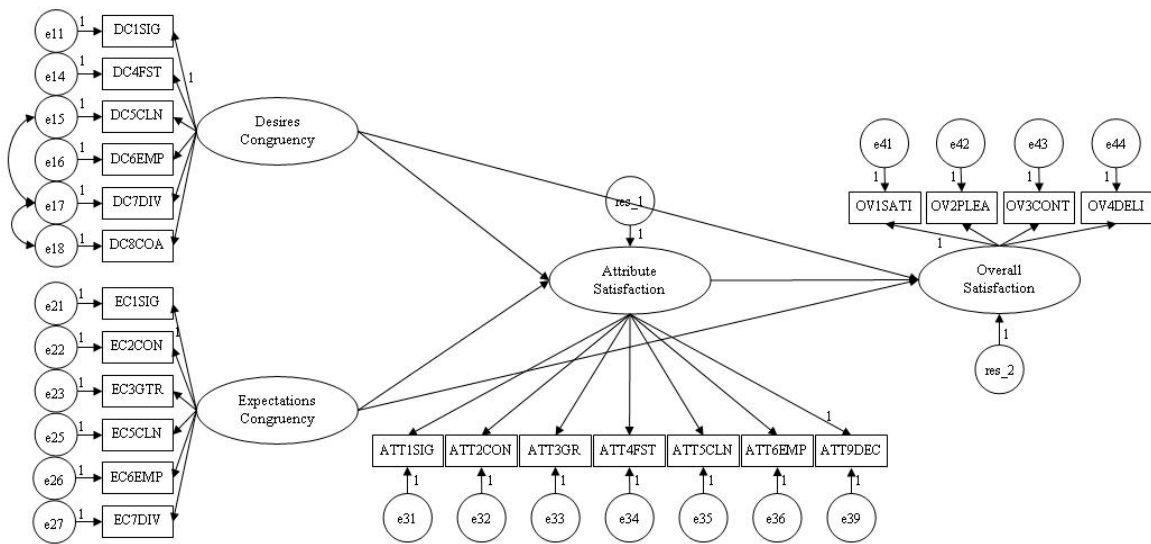


FIGURE 4-15. Testing the direct effect of the two congruencies

TABLE 4-17  
Fit indices of the modified structural model

	$\chi^2$	df	RMSEA	CFI	NFI	AGFI
Modified	649.0	218	.087	.881	.832	.789

**Hypothesis 2a: Desires congruency will positively affect airport attribute satisfaction.** Hypothesis 2a tested the relationship between desires congruency regarding airport services and airport attribute satisfaction. A positive effect of desires congruency on airport attribute satisfaction was hypothesized. Results revealed that the relationship between the two constructs was statistically significant ( $p < .001$ ) (see Table 4-18) and positive. Hence, hypothesis 2a was supported.

TABLE 4-18  
Testing results of hypothesis 2a

Regression path	Standard Path Coefficient	Standard Error	Critical Ratio ( <i>t</i> -value)	<i>p</i> -value
A Desires Congruency Airport Attribute Satisfaction	.430	.065	3.723	< .001

**Hypothesis 2b: Expectations congruency will positively affect airport attribute satisfaction.** Hypothesis 2b examined the influence of expectations congruency regarding airport services on airport attribute satisfaction. A positive relationship between the two constructs was hypothesized. This relationship was supported by the data ( $p < .001$ ) as displayed in Table 4-19. The previous study (Spreng et al., 1996) found that expectations congruency had a significant effect on attribute satisfaction consistent with the traditional model, the expectation-disconfirmation theory. Similarly, the results showed a moderate to strong effect of expectations congruency on airport attribute satisfaction (path coefficient of .348). Therefore, hypothesis 2b was supported.



TABLE 4-19

Testing results of hypothesis 2b

Regression path	Standard Path Coefficient	Standard Error	Critical Ratio ( <i>t</i> -value)	<i>p</i> -value
Expectations Congruency → Airport Attribute Satisfaction	.348	.059	3.256	= .001

**Hypothesis 3a: Airport attributes of desires congruency and expectations congruency are significantly different from each other.** Hypothesis 3a examined the extent to which desires congruency and expectations congruency were different from each other. The present study investigated airline passengers' desires congruency and expectations congruency with the identical set of nine airport service attributes. The paired samples t-test was utilized in order to compare the means of the set of the two variables with SPSS.18.0. These t-tests allowed for testing whether the average difference was significantly different from zero (Pallant, 2010).

The results of the paired sample t-test were displayed in Table 4-20. Among the nine airport service attributes, five items had statistically significant ( $p < .05$ ) differences in the mean between desires congruency and expectations congruency. The five items included: 1) fastness in check-in, security check, immigration, and baggage claim, 2) a variety of ground transportation options to the nearest city, 3) convenient facilities available (i.e., carts, free Wi-Fi, etc.), 4) clear and visual signs to direct to airport services and facilities, and 5) comfortable areas to nap, read, and do business. These service attributes indicated that airline passengers in the two airports had higher expectations congruency than desires congruency. However, the other four service attributes did not convey the significant differences between two congruencies ( $p > .05$ ).

Theses included: 6) décor that matches with the local culture, 7) cleanliness (i.e., overall airport, restrooms, etc.), 8) diversity in shops and restaurants, and 9) courteous and knowledgeable airport employees. Therefore, hypothesis 3a was only partially supported.

TABLE 4-20

Mean comparison of airport attributes between desires congruency and expectations congruency

Pair of airport attributes	Mean Differences	Standard Error	Correlation	Critical ratio (t-value)	p-value
DC4FST-EC4FST	-.847	.192	.644	<b>-4.407</b>	<b>&lt; .001</b>
DC3GTR-EC3GTR	-.672	.163	.634	<b>-4.109</b>	<b>&lt; .001</b>
DC2CON-EC2CON	-.637	.176	.690	<b>-3.630</b>	<b>&lt; .001</b>
DC1SIG-EC1SIG	-.573	.179	.558	<b>-3.193</b>	<b>= .002</b>
DC8COA-EC8COA	-.527	.182	.667	<b>-2.893</b>	<b>= .004</b>
DC9DEC-EC9DEC	-.374	.200	.576	-1.872	= .062
DC5CLN-EC5CLN	-.260	.143	.604	-1.811	= .071
DC7DIV-EC7DIV	-.206	.185	.644	-1.116	= .265
DC6EMP-EC6EMP	-.141	.142	.645	-.993	= .321

\* All items had 261 degree of freedom

\* alpha level is .05

**Hypothesis 3b: The effect of desires congruency as a direct antecedent of airport attribute satisfaction will be greater than the effect of expectations congruency.** Spreng (1993) argued that desires congruency was a more powerful antecedent of satisfaction in comparison to expectation congruency. Thus, hypothesis 3b investigated the magnitude of the effects of desires congruency and expectations congruency on airport attribute satisfaction. In estimating the effect size of the two congruencies, Spreng (1993) utilized a subtractive form of desires congruency and expectations congruency. A subtractive form of congruency was measured by the gap

between perceived performance and participants' desires or expectations and took the absolute value (Spreng, 1993). In this study, the researcher measured the effects of desires congruency and expectations on attribute satisfaction in two ways. First, the operationalized congruency values were utilized, which are the same as used in the measurement and structural model. Second, the researcher utilized the difference values only: the extent to which their airport experiences were different from their desires and expectations.

In order to directly compare the effect of the two congruencies, the structural model using the three constructs without overall satisfaction with an airport (see Figure 4-16) was run with AMOS 18.0. First, the data used in the first proposed model was the same as what were analyzed in the measurement and structural model, previously. In other words, the two congruencies were operationalized by multiplying the differences by evaluation of these differences (see Variables Measured in the Study, p. 26, for further details). The major indices (see Table 4-21) show that the model fit did not stay in the acceptable range: chi-squared = 541.2 with 143 degrees of freedom, RMSEA = .103, CFI = .831, NFI = .786, and AGFI = .779. Moreover, the regression paths described the extent to which each of congruency affected airport attribute satisfaction—.420 and .345 for desires congruency and expectations congruency, respectively (see Table 4-22). The magnitude effect of either desires congruency or expectations congruency was not able to be determined in the first proposed model.

TABLE 4-21

Fit indices of direct comparison of desires congruency and expectations congruency

	$\chi^2$	df	RMSEA	CFI	NFI	AGFI
Proposed 1	541.2	143	.103	.831	.786	.779
Proposed 2	563.4	143	.106	.828	.784	.779

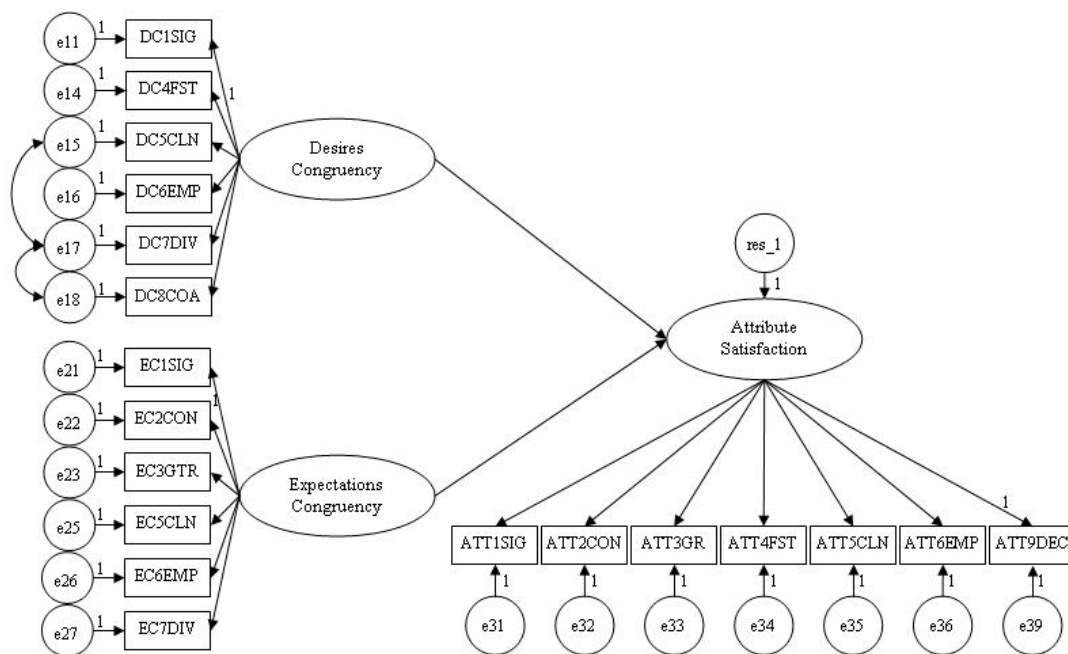


FIGURE 4-16. Direct comparison of desires congruency and expectations congruency

Secondly, only the difference values were utilized in testing the hypothesis 3b. As Spreng (1993) noted, these differences between respondents' airport experiences and their desires and expectations were negatively related to satisfaction. Greater discrepancy between the standard—desires or expectations and airport performance led less satisfaction with airport services. The second proposed model with difference data

only did not deliver an acceptable fit, either (see Table 4-21). However, desires congruency was more important than expectations congruency in the formation of attribute satisfaction ( $-.728$  and  $-.240$  for desires congruency and expectations congruency, respectively), when these two were directly compared. Hence, hypothesis 3b was supported by the data of airline passengers' differences between airport experiences and their desires and expectations.

TABLE 4-22  
Testing results of hypothesis 3b

Regression path		Standard Path Coefficient	Standard Error	Critical Ratio ( <i>t</i> -value)	<i>p</i> -value
Desires Congruency	Proposed1	.420	.068	3.571	< .001
→ Airport Attribute Satisfaction	Proposed2	-.728	.123	-6.433	< .001
Expectations Congruency	Proposed1	.345	.061	3.156	= .002
→ Airport Attribute Satisfaction	Proposed2	-.240	.117	-2.825	= .005

The proposed hypotheses were examined in the current chapter. Structural equation modeling analysis found an acceptable fit for the proposed model of airline passengers' satisfaction with airports and all hypotheses were at least partially supported by the data. A summary of the tested hypotheses is presented in Table 4-23.

TABLE 4-23

Summary of hypothesis tests

<b>Hypothesis</b>	<b>Description</b>	<b>Result</b>
H1a	Airline passengers' overall satisfaction with an airport is positively related to airport attribute satisfaction.	Supported
H1b	The effect of desires congruency and expectations congruency is mediated by airport attribute satisfaction.	Supported
H2a	Desires congruency positively affect airport attribute satisfaction.	Supported
H2b	Expectations congruency positively affect airport attribute satisfaction.	Supported
H3a	Desires congruency and expectations congruency are significantly different.	Partially Supported
H3b	The effect of desires congruency as direct antecedents of satisfaction is greater than the effect of expectations congruency.	Supported

## CHAPTER V

### DISCUSSION AND CONCLUSION

#### **Review of the Study Results**

##### *Purpose of the current study*

The aim of the present study was to understand airline passengers' overall satisfaction with an airport. Desires congruency and expectations congruency regarding airport services were analyzed, and airport attribute satisfaction was measured in order to assist in explaining airline passengers' overall satisfaction. Furthermore, the desires congruency model (Spreng et al., 1996; Spreng, 1993) was adopted as the theoretical base of the current study.

Previous literature was reviewed to confirm the link between airport and customer satisfaction and to determine significant airport service attributes. The researcher developed an online questionnaire following the technique of Spreng (1993). In addition, the study results of Fodness and Murray (2007) were used to develop the questionnaire. A pilot study was done with 23 graduate students of Texas A&M University who enhanced the questionnaire. The modified questionnaire was delivered via an online survey website, *Qualtrics* which asked questions about personal travel information, desires congruency and expectations congruency regarding airport services, airport attribute satisfaction, and overall satisfaction with an airport. The research questionnaire was distributed to the collected e-mail addresses provided by airline

passengers whom the researcher approached in ICN and LAX. Finally, applicable survey responses (n = 262) were analyzed with structural equation modeling (SEM).

#### *Tested hypotheses*

Six hypotheses were presented in this study. After measurement scales were confirmed, the hypotheses were tested. Five of the hypotheses were supported by the data, and one was partially supported (see Table 4-23). Hypotheses 1a and 1b tested the relationships between the three antecedents and overall satisfaction with an airport; the antecedents were desires congruency, expectations congruency, and airport attribute satisfaction. The positive effect of airport attribute satisfaction on overall satisfaction with an airport was confirmed as suggested by previous studies (Spreng et al., 1996; Spreng et al., 1995; Spreng and MacKoy, 1996; Oliver, 1993; Spreng, 1993; Spreng and Olshavsky, 1993). Furthermore, desires congruency and expectations congruency did not directly affect overall satisfaction and were mediated by airport attribute satisfaction as other researchers have argued (Spreng et al., 1996; Spreng, 1993).

Hypotheses 2a and 2b examined the positive effects of desires congruency and expectations congruency on airport attribute satisfaction. The structural model verified that the congruence between desires and experience of airport services had a significant and positive effect on airport attribute satisfaction (see Table 4-18). Moreover, expectations congruency was found to positively affect attribute satisfaction (see Table 4-19). The significant effects of these two constructs confirmed the study results of Spreng et al. (1996). In addition, the expectation-disconfirmation theory (Oliver, 1980) was also supported by the results of testing hypothesis 2b.



The last two hypotheses tested desires congruency and expectations congruency themselves. The partial differences between the two congruencies were discovered in testing hypothesis 3a. It was further found that desires congruency had a greater effect on airport attribute satisfaction in comparison to the influence of expectations congruency (hypothesis 3b). As seen in the regression paths of the overall structural model (see Table 4-14) and the direct comparison of effects (Table 4-22), the path coefficient of desires congruency was larger than expectations congruency. The result of the effect size of the two congruencies supported the previous studies (Spreng et al., 1996; Spreng, 1993).

## **Discussion**

### *Theoretical implications*

Theoretical implications can be made primarily from the satisfaction formation of airline passengers, on the basis of the desires congruency model (Spreng et al., 1996). As noted, to the best of the current researcher's knowledge, tourism researchers have not studied airline passengers' desires and expectations congruency regarding airport services, while several tourism researchers applied the expectation-disconfirmation theory to their studies (Wong and Law, 2003; Pizam and Milman, 1993). In addition, passengers' expectations and satisfaction with airport services were examined in a marketing study (Fodness and Murray, 2007). Furthermore, the previous marketing studies on the desires congruency model have utilized tangible products (Spreng et al., 1996; Spreng, 1993; Spreng and Olshavsky, 1993) in experimental situations.

Additionally, Spreng and MacKoy (1996) measured undergraduate students' desires and expectations congruency regarding advising services. Amongst tourism scholars, Petrick (2002) investigated both desires congruency and expectations congruency of golf travelers. However, desires congruency was excluded due to its lower correlations with overall satisfaction compared with expectations congruency and the issue of questionnaire length revealed in the pilot test. Therefore, this study is believed to be meaningful as it is possible the first to examine the extent to which airline passengers' desires and expectations differ from their airport experiences with the desires congruency model. These differences were found to have effects on their satisfaction with airport services and with the overall experiences in airports.

Furthermore, the influence of desires congruency and expectations congruency on attribute satisfaction was confirmed. Both congruencies had significant and positive effects on attribute satisfaction (see Table 4-14). The conventional theory confirmed an important role of expectations congruency in satisfaction (Oliver, 1980), and the desires congruency model also supported this role (Spreng et al., 1996; Spreng and MacKoy, 1993; Spreng, 1993; Spreng and Olshavsky, 1993). As aforementioned, Fodness and Murray (2007) researched airline passengers' satisfaction with airport services focusing on expectations. However, Yüksel and Yüksel (2001) asserted that desires play a more important role in determining attribute satisfaction than expectations. Moreover, this study revealed a larger coefficient path value of desires congruency on attribute satisfaction than expectations congruency (see Table 4-14 and 4-22). The theoretical model proposed in the study demonstrated that satisfaction with just exceeding

expectations likely lacked explaining how satisfaction was formed. Moreover, expectation disconfirmation was defined as the cognitive comparison of the difference between what was predicted and what was actually received (Spreng, 1993). Comparatively, the desires congruency model could likely measure the discrepancies between the actual experiences and one's desires and expectations in various comparisons: by subtracting performance from desires or expectations and by multiplying the differences by one's evaluation of this discrepancies.

Another theoretical implication is the contrast between desires congruency and expectations congruency. This study compared desires congruency to expectations congruency in order to estimate the degree to which these two variables were different from each other. The research questionnaire used in this study made the differentiation between the two concepts by defining them for respondents. For example, desires congruency referred to differences between an *ideal* airport that a passenger desired and the *actual* experience that one had, and expectations congruency referred to differences between the *realistic* expectation *regarding ICN or LAX* and the *actual* experience as Spreng (1993) and Spreng et al. (1996) explained. Even though the current researcher sought to make a clear distinction between the congruencies, a large correlation value ( $r = .80$ ; see Table 4-6) appeared, so the result of hypothesis 3a is meaningful. Five pairs, among nine combinations linked desires congruency and expectations congruency, displayed statistically significant differences between these two congruencies (see Table 4-20). Furthermore, greater expectations congruency than desires congruency was discovered in all nine pairs. The participants of this study had airport experiences that

exceeded their expectations regarding the two airports more than their ideal type of airports. A statistical test to distinguish differences between these constructs has not been performed in the previous studies. The study results suggested that differences existed between desires congruency and expectations congruency (see Table 4-20).

#### *Practical implications*

The significant and positive relationships between desires congruency and airport attribute satisfaction implies that first, airport managers should understand that their customers' desires and provide services that exceed the desires in order to achieve customer satisfaction. Second, an organization or corporate that evaluates airport service quality, such as ACI or SkyTrax, should likely adopt airport customers' desires as the standard for assessing customer satisfaction with airports. Finally, tourism scholars should likely study airline passengers' satisfaction with airports focusing more on their desires from the passengers' viewpoint. This is because the influence of desires congruency was found to be more crucial than that of expectations congruency. However, Spreng (1993) pointed out that most businesses set customer expectations as their goal even though they recognize the importance of customer desires. Paternoster (2008) also described that customer satisfaction could be calculated by subtracting customer *expectations* from airport performance. Conclusively, as Spreng et al. (1996) asserted, viewing desires as a major determinant of consumer satisfaction has the potential to enrich researchers' understandings as well as airport managers. Thus, it is recommended to measure airline passengers' desires as a standard in order to comprehend the phenomenon of their satisfaction formation as well as their expectations.

Furthermore, this study investigated that the discrepancy between airport experiences and passengers' desires had the significant and negative effect on airport attribute satisfaction. Spreng (1993) demonstrated, "the greater the discrepancy between the standard and performance, the less satisfied one should be" (pp. 120-121). This result implies that airport managers should measure the extent to which the actual airport performances are different from what their customers ideally desire. Airport manager should also attempt to meet customers' desires regarding airport services not only by penetrating the desires but also by improving airport performances.

In particular, among the six items in the final overall model, cleanliness (coefficient path = .70) as the most important attribute of desires congruency regarding an airport for understanding satisfaction. The next items with high loadings were on courteous and knowledgeable airport employees and fastness (coefficient paths were .66 and .65, respectively). Related comments from the last part of the research questionnaire confirmed these desires:

*"Incheon gave me a very good first impression of Korea, with very clean airport and very nice staffs and facilities" [passenger A in ICN]*

*"...I was especially impressed because... everything is very nice and clean.."*  
*[passenger B in ICN]*

*"This airport disappointed for these reasons: ...no staffs in information desk at night..." [passenger C in LAX]*

*"Poor cleanliness in bathrooms..." [passenger D in LAX]*

“Had a long queue in immigration but that can be expected at times.”

[passenger E in ICN]

Therefore, airport managers could likely concentrate on these airport service attributes in satisfying their customers in the viewpoint of desires.

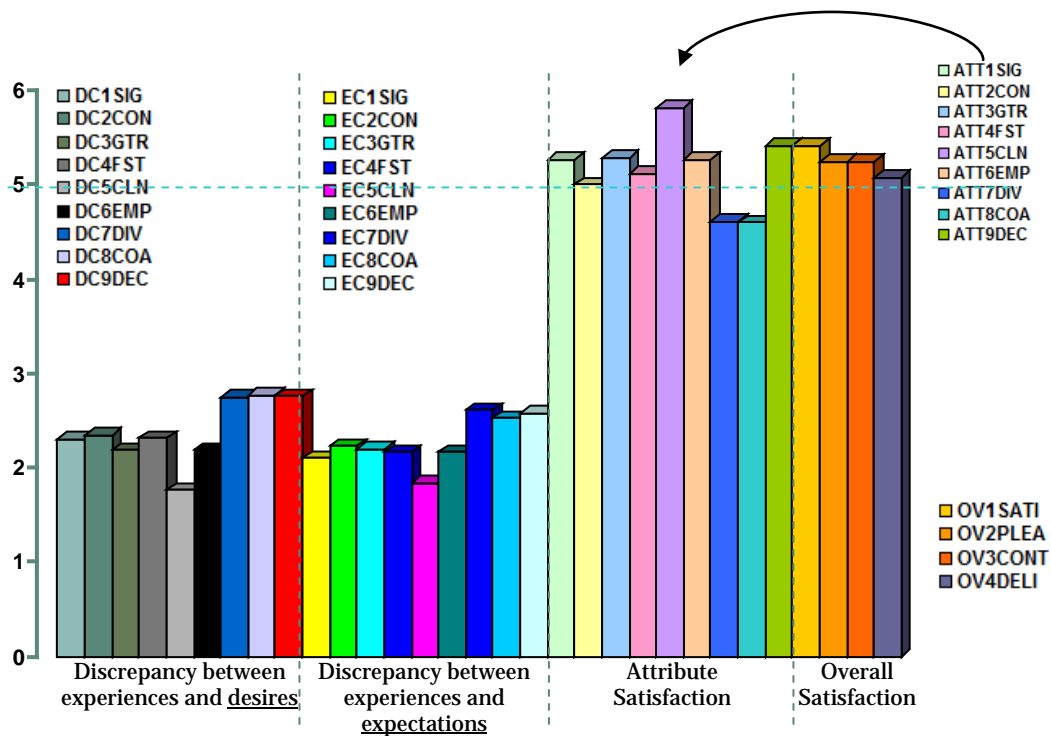


FIGURE 5-1. Mean values of each airport service attribute

Similar patterns of mean values for each of the airport attributes were found for both desires and expectations congruency (see Descriptive Statistics, Table 4-2, for further details). The two congruencies had the same three attributes whose mean values were negative: diversity in shops and restaurants, comfortable areas to nap, read, or do

business, and décor that matches with the local culture. Additionally, the mean values of the two items on diversity and comfortable areas in airport attribute satisfaction were lower than the other items, but the item on décor had a mean value higher than the other two. In other words, these two items were the only means less than 5.0 in comparison to the means of the other seven attributes greater than 5.0. Meanwhile, larger means of discrepancy between airport experiences and individual desires and expectations were discovered for the three items on diversity, comfortable areas, and décor (2.75, 2.77, and 2.76, respectively) in Figure 5-1. According to the results of linear regression using SPSS 18.0, these two items were not significant ( $p > .05$ ) indicators of airport attribute satisfaction.

Based on these results, the three attributes that airline passengers experienced more differently from their desires and expectations and were less satisfied with were belonged to the services dimension described in Fodness and Murray study (2007). Hence, airport managers, first, should likely attempt to estimate the levels of customers' desires regarding each airport service attribute, in particular diversity, comfortable areas, and décor in airports. Second, efforts to improve the levels of service quality should be made in order to have a competitive advantage by satisfying airport customers. It would be good for airports to listen to voices of their customers:

*“...no public lounging areas with seatings for more than a few people, lack of nutritious eating options, ...” [passenger D in LAX]*

*“I love ... diversity of restaurants.” [passenger F in ICN]*

*“Shops are nice, but they close at 9pm!” [passenger G in ICN]*

*“...we figured there would be shops, bars, food places and were disappointed.”*

*[passenger G in LAX]*

Finally, customer satisfaction should be a primary goal of all airports (Atalik, 2009), as airports have become tourism destinations by themselves (Freathy and O’Connell, 1999). It is time to maximize airport passenger satisfaction by understanding what an airline passenger ideally wants to receive in an airport and by providing more excellent services that exceed individual desires. Desires congruency was found to have a positive effect on airport attribute satisfaction and was a stronger predictor of attribute satisfaction than expectations congruency in the proposed model. Therefore, the closer airport services meet the desires, the more satisfied airline passengers should be.

### **Limitation and Future Studies**

#### *Limitation of the present study*

This study is limited because major indices were only slightly over the acceptable ranges (see Table 3-3). Yet, the results of overall structural model are likely still meaningful as this study could confirm that the desires congruency model can be applied to the satisfaction formation process of airline passengers. The model-fit problems might be caused by: the smaller sample size (n=262), limited period for data collection (3 weeks in April and May 2011), and/or limited study sites (ICN and LAX). Furthermore, the time when this study was conducted had lower passenger traffic than the third (between July and September) and the fourth quarter (October through



December) according to ACI (2010). Otherwise, there might be something else needed in the model.

In addition, the current study excluded four constructs that Spreng and colleagues (1996) measured in studying the procedure of satisfaction formation: desires, expectations, perceived performances, and information satisfaction. This was because of the redundancy of questions and the length of questionnaire. Had these four constructs been added, participants would have answered a total of 105 questions to answer in the eight sections. It was also problematic that each section had to have the same nine items of airport service attributes. In order to increase the response rate and make respondents focus, the researcher decided to have them compare their airport experiences to desires and expectations and answer questions on desires congruency and expectations congruency. Future research should investigate all eight latent variables to understand the process by which passengers are satisfied with their airport experiences.

Moreover, respondents participated in the current study through an online survey, which potentially includes a lower level of confidentiality (Andrews, Nonnecke, and Preece, 2003). The reason to choose an online survey in this study was a possible difficulty in airports whether airline passengers in a hurry could complete a paper-based questionnaire or not. Yet, not everyone has a computer to access the internet and to participate in an online survey. Accordingly, this study is limited to comprehend all passengers in airports.

*Recommendations for future studies*

Several recommendations for future studies are presented based on the limitations. First, the whole desires congruency model was not tested; thus, future studies should attempt to measure airline passengers' satisfaction with an airport accompanying every concept in the desires congruency model. The researcher recommends measuring the major constructs separately: before and after airport experiences. For example, the examination of passenger's desires and expectations prior to their actual experiences is advised; after the completion of airport experiences, the rest of the constructs should be measured including: perceived performance, desires and expectations congruency, attribute and information satisfaction, and overall satisfaction. This has the potential to yield a more accurate estimation of their desires and expectation in particular. It is usual for people to not recall what they claim to have believed initially according to theories of hindsight bias (Hawkins and Hastie, 1990). Hawkins and Hastie (1990) argued that individuals who already know the outcome of an event tend to report their expectation as higher than they have estimated the event without the outcome information. Therefore, the study of the overall satisfaction with an airport could assess the eight variables in the desires congruency model more precisely.

Second, the study was held in two airports during a period of less than one month. Thus, the research results have the potential to not be representative of all airline passengers. If future studies are done with more airline passengers, as Fodness and Murray (2007) did with nearly 1,000 passengers, the study results should be more generalizable. Third, lower level of confidentiality was probable in this study conducted

via online. Therefore, the researcher recommends attempting to conduct on-site survey or mixture of online and on-site survey. The last recommendation is that future studies are needed which examine the differences between airports and airlines. The current study collected data from two different airports, but did not yield results that compared ICN to LAX due to the sample size differences. Thus, future studies are recommended attempting to examine the differences of airline passengers' satisfaction between airports and airlines.

## **Conclusions**

An airline passengers' satisfaction formation model was proposed based on the desires congruency model which has been applied in marketing and tourism studies and empirically tested. The current study looked at three antecedents that influence airline passengers' overall satisfaction with their airport experiences: airport attribute satisfaction, desires congruency, and expectations congruency. In this study, nine airport service attributes were selected on the basis of a previous study on passengers' expectations. Quantitative research methods were used to develop the appropriate measurement scales and examine the proposed model and hypothesized relationships among all constructs. Amongst six proposed hypotheses, five were supported by the data and one was partially supported. Desires congruency had the larger impact on airport attribute satisfaction than expectations congruency; attribute satisfaction affected overall satisfaction with an airport. Accordingly, theoretical and practical implications were depicted and reported followed by suggestion for future research.

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**APPENDIX 1****FORMAL REQUEST LETTER (ICN)**

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Texas A&M University  
2251 TAMU  
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*[Airport Managers in Charge of Airport Services]  
[ICN or LAX]*

March 29, 2011

Dear Mr. or Ms. (Their Last Name):

I am a graduate student researching airline passengers' desires, expectations and satisfaction with airports, and would like to request permission to access passengers prior to going through security.

I am particularly interested in leisure passengers. I hope to do the on-site survey at *[ICN or LAX]* in April with the preferred survey site being prior to the security line. I will be asking respondents to provide their contact information (e.g. e-mail address) and trip schedule for the following phase of the survey via online. It will take less than 3 minutes to complete. *[The reason I chose Incheon International Airport is that the airport has been ranked as the Best Airport Worldwide for 6 years (source: Airports Council International) / The reason I chose Los Angeles Airport is that the airport has been ranked as one of the 10 busiest airports in the world (source: Airports Council International).]* I will also be doing a parallel study at *[LAX or ICN]*.

I would be happy to answer any further questions about my study, and would be delighted to share the findings with you in the near future. If you need more information on the study, please feel free to contact me or my adviser, Dr. Petrick.

If you allow me to do the on-site survey at your airport, would you please e-mail me with a proof of your permission which will afford me access passengers at *[ICN or LAX]*?

Thank you for your time and I look forward to hearing from you.

Best Wishes,  
HyunJoo Kim

\* Attachment: Brief idea of the on-site survey at *[ICN or LAX]*

## APPENDIX 1 (continued)

### Airport Assessment

<Brief idea of meeting air travelers at [ICN/LAX]>

	Description	Others																								
<b>Objectives of the study</b>	<ul style="list-style-type: none"> <li>▪ To learn               <ol style="list-style-type: none"> <li>1) tourists' comparison their perception of airport performance to their desires and expectations</li> <li>2) tourists' satisfaction with airport quality</li> <li>3) the effect of satisfaction with airport quality on overall trip satisfaction</li> </ol> </li> <li>▪ To improve the airport quality</li> </ul>	Based on the desires congruency model by Dr. Spreng																								
<b>Research method</b>	<ul style="list-style-type: none"> <li>▪ Quantitative research</li> </ul>																									
<b>Data Collection</b>	<ul style="list-style-type: none"> <li>▪ Departure area at Incheon International Airport               <ul style="list-style-type: none"> <li>- Whom: passengers who wait for check-in time</li> <li>- When: either before check-in or after check-in</li> <li>- How:                   <ol style="list-style-type: none"> <li>1) to distribute information sheet of the study to possible participants</li> <li>- 2) to collect passengers' e-mail address* and their trip schedule</li> </ol> </li> </ul> </li> </ul>	3 questions																								
<b>Sample size</b>	<ul style="list-style-type: none"> <li>▪ 500-600</li> </ul>	(Total 1,000-1,200)																								
<b>Timeline</b>	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 20%;"></th> <th style="width: 30%; text-align: center;">Date</th> <th style="width: 30%; text-align: center;">Study</th> <th style="width: 20%; text-align: center;">Location</th> </tr> </thead> <tbody> <tr> <td></td> <td style="text-align: center;">Feb 2011</td> <td style="text-align: center;">Literature Review</td> <td></td> </tr> <tr> <td></td> <td style="text-align: center;">Mar 2011</td> <td style="text-align: center;">Pre-test</td> <td style="text-align: center;">Easterwood Field Airport, TX</td> </tr> <tr> <td></td> <td style="text-align: center;">Apr-May 2011</td> <td style="text-align: center;">Data collection</td> <td style="text-align: center;">Incheon Airport, Seoul, Korea Los Angeles Airport, CA</td> </tr> <tr> <td></td> <td style="text-align: center;">May 2011</td> <td style="text-align: center;">Data analysis</td> <td></td> </tr> <tr> <td></td> <td style="text-align: center;">June 2011</td> <td style="text-align: center;">Final research report</td> <td></td> </tr> </tbody> </table>			Date	Study	Location		Feb 2011	Literature Review			Mar 2011	Pre-test	Easterwood Field Airport, TX		Apr-May 2011	Data collection	Incheon Airport, Seoul, Korea Los Angeles Airport, CA		May 2011	Data analysis			June 2011	Final research report	
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<b>Contact</b>	<ul style="list-style-type: none"> <li>▪ <b>Dr. James F. Petrick</b> Professor &amp; Research fellow <a href="mailto:jpetrick@tamu.edu">jpetrick@tamu.edu</a></li> <li>▪ <b>HyunJoo Kim</b> M.S. Student <a href="mailto:hjoo.mj.kim@tamu.edu">hjoo.mj.kim@tamu.edu</a></li> </ul>	<b>Department of Recreation, Park and Tourism Sciences at Texas A&amp;M University</b>																								

\* Respondents will be asked to answer the questionnaire on parts of perceived performance and satisfaction after completing their trip via on-line.

## APPENDIX 2

### INFORMATION SHEET AND ON-SITE QUESTIONNAIRE (ENGLISH)

#### INFORMATION SHEET

#### Airport Assessment: Passengers' Desires, Expectations, and Satisfaction with Airport Quality

Thank you for participating in a Texas A&M University assessment of airline passengers' desires, expectations, and satisfaction with airport quality. The purpose of this study is to understand what air travelers want and anticipate at airports. Your cooperation will contribute to improving tourists' airport experiences as well as airport quality. You were selected to be a possible participant because your primary purpose of trip is leisure, and you are over 18 years old and have volunteered to complete this survey.

This study consists of two phases of survey. If you agree to participate, you will be asked first to answer the following two items: your trip schedule and contact information. This would take approximately 2 minutes. The second phase of survey will be an online questionnaire that you will be asked to fill out after completing your trip. This would take approximately 10 minutes.

Your participation is voluntary, and your decision whether or not to participate will not affect your current or future relations with Texas A&M University. If you decide to be in this study, you will receive a small gift after providing the initial contact information. After taking the online survey, you will be entered into a drawing for a \$ 15 Mastercard gift card.

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If you have questions regarding this study, you may contact Dr. James Petrick, Department of Recreation, Park and Tourism Sciences, at (979) 845-8806, [jpetrick@tamu.edu](mailto:jpetrick@tamu.edu), or Hyun Joo Kim, at (979) 845-4673, [hjoo.mj.kim@tamu.edu](mailto:hjoo.mj.kim@tamu.edu). Please be sure you have read and understood the above information. If you would like to be in the study, please provide your contact information at this time, so the researcher can reach you after your trip.

## APPENDIX 2 (continued)

# Airport Assessment



1. Do you agree to participate in the survey after completing your trip?

Yes, I do!

No, I don't ...

2. Would you please tell us about your preferred date when to send the questionnaire regarding your trip schedule?

\_\_\_\_\_ / \_\_\_\_\_ / 2011

3. Would you please provide your contact information for the online survey?

e-mail \_\_\_\_\_ @ \_\_\_\_\_

***Thank you for providing your valuable information!***



### APPENDIX 3

#### INFORMATION SHEET AND ON-SITE QUESTIONNAIRE (KOREAN)

##### 연구 안내문

##### 공항 평가: 비행 승객의 공항 품질에 대한 바람, 기대, 만족을 중심으로 (Airport Assessment: Air passengers' Desires, Expectations, and Satisfaction with Airport Quality)

Texas A&M University 에서 주관하는 공항 평가 연구에 참여해주셔서 진심으로 고맙습니다. 본 연구의 목적은 공항을 이용하는 여행객들의 공항 품질에 대한 기대와 만족 수준을 이해하는 것입니다. 여러분의 참여는 공항 품질을 향상에 이바지함은 물론, 여행객들이 공항에서 더 좋은 경험을 하는 데에 크게 기여할 것입니다. 조사 대상은 비행기를 타고 여행하는 성인 여행객이고, 조사참여는 여러분의 자유의사에 의해 이루어집니다.

본 연구는 두 단계의 설문조사로 진행됩니다.

1 단계는 공항에서 이루어지는 설문조사이며, 여행 일정에 대한 질문에 대답하실 것입니다. 2 단계 설문조사를 위해 이메일 주소도 여쭙볼 것입니다 (예상응답시간 2 분). 2 단계는 온라인 설문 조사이며, 여행 일정을 마치신 후 공항 경험에 대한 질문에 대답하실 것입니다. 온라인 조사는 제공해주신 이메일을 통해 진행될 것입니다 (예상응답시간 10 분).

조사 참여는 여러분의 자원에 의한 것입니다. 조사 참여 여부가 현재 혹은 미래의 Texas A&M University 와의 관계에 어떠한 영향도 미치지 않을 것입니다.

본 연구는 철저히 보안 처리됩니다. 개인 정보와 연결되는 모든 자료는 연구에 이용되지 않을 것입니다. 또한, 연구 자료는 안전하게 보관됩니다. 주요 연구자(김현주)만이 자료에 접근할 것입니다.

1 단계의 설문조사에 참여 시 작은 선물을 드리고, 2 단계 온라인 설문 조사 참여 시 추첨을 통해 상품권을 드릴 계획입니다.

본 연구는 Texas A&M 대학교의 임상실험심사위원회 (IRB)에서 검토하였습니다. 연구와 관련하여, 개인의 권리에 대한 문제가 발생하거나 질문이 있으시면, 전화 1-979-458-4067 또는 이메일 [irb@tamu.edu](mailto:irb@tamu.edu) 을 통해 임상실험심사위원회(IRB)로 연락하실 수 있습니다.

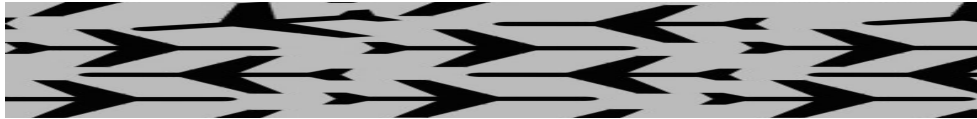
본 연구와 관련하여 궁금하신 사항이 있다면, Texas A&M University 의 Recreation, Park and Tourism Sciences 학과의 Dr. Petrick 에게 전화 1-979-845-8806, 또는 이메일 [jpetrick@tamu.edu](mailto:jpetrick@tamu.edu) 로 연락하시거나, 김현주에게 전화 1-979-845-4673, 또는 이메일 [hjoo.mj.kim@tamu.edu](mailto:hjoo.mj.kim@tamu.edu) 로 연락하시기 바랍니다.

연구와 관련된 안내문을 꼼꼼히 읽어주시기 바랍니다. 연구에 동참하시기로 결정하셨다면, 2 단계 온라인 설문조사를 위해, 여행 이후 연락 가능한 이메일 주소를 제공해주시기를 요청드립니다. 고맙습니다.

## APPENDIX 3 (continued)

# 공항 평가

## (Airport Assessment)



1. 여행을 마치신 후, 설문 조사에 참여하시겠습니까?

네, 참여하겠습니다!

아니요, 참여하지 않겠습니다...

2. 이번 여행 일정을 고려했을 때, 온라인 설문에 참여하시기 적합한 날짜를 말씀해주시겠습니까?

2011 / \_\_\_\_\_ / \_\_\_\_\_

3. 온라인 설문 조사와 관련하여, 연락 가능한 이메일 주소를 알려주시겠습니까?

e-mail \_\_\_\_\_ @ \_\_\_\_\_

**소중한 정보를 제공해주셔서 고맙습니다!**

## APPENDIX 4

### ONLINE SURVEY REQUEST (ENGLISH)

Hello, sir (or ma'am)!

I am Hyun Joo Kim. I met you at Incheon International Airport (ICN) or Los Angeles International Airport (LAX) and you were kind enough to agree to participate in a follow-up survey related to the assessment of airports. Thus, I kindly ask you to answer the online survey questions.

Your cooperation in this study will be used to enhance tourist experiences at airports.

Again, thank you for your participation. **Please click the following link to start the Survey:**

**[Take the Survey](#)**

Or copy and paste the URL below into your internet browser:

\$(!://SurveyURL)

If you want to read the information sheet on this study that you have been given at Los Angeles Airport again, please read it below:

#### INFORMATION SHEET

##### **Airport Assessment: Air Passengers' Desires, Expectations, and Satisfaction with Airport Quality**

Thank you for participating in a Texas A&M University assessment of airline passengers' desires, expectations, and satisfaction with airport quality. The purpose of this study is to understand what air travelers want and anticipate at airports. Your cooperation will contribute to improving tourists' airport experiences as well as airport quality. You were selected to be a possible participant because your primary purpose of trip is leisure, and you are over 18 years old and have volunteered to complete this survey.

This study consists of two phases of survey. If you agree to participate, you will be asked first to answer the following two items: your trip schedule and contact information. This would take approximately 2 minutes. The second phase of survey will be an online questionnaire that you will be asked to fill out after completing your trip. This would take approximately 10 minutes.

Your participation is voluntary, and your decision whether or not to participate will not affect your current or future relations with Texas A&M University. If you decide to be in this study, you will receive a small gift after providing the initial contact information. After taking the online survey, you will be entered into a drawing for a \$ 15 Mastercard gift card.

This study is confidential. No identifiers linking you to this study will be included in any sort of report that might be published. Research records will be stored securely, and only the primary investigator, Hyun Joo Kim, will have access to the records.

This study has been reviewed by the Institutional Review Board at Texas A&M University. For research-related problems or questions regarding your rights as a research participant, you can contact this office at (979) 458-4067 or [irb@tamu.edu](mailto:irb@tamu.edu).

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Best Wishes,  
Hyun Joo Kim

## APPENDIX 5

### ONLINE SURVEY REQUEST (KOREAN)

안녕하십니까?

저는 Texas A&M University 에서 Tourism 을 전공 중인 대학원생 김현주입니다. 현재 "공항평가: 비행 승객의 공항에 대한 바람, 기대, 만족을 중심으로 (Airport Assessment: Air passengers' desires, expectations, and satisfaction with airport quality)"라는 주제로 논문 작업 중에 있습니다.

인천공항 (또는 엘에이 공항)에서 직접 읽고 연구에 참여해주실 것을 요청드렸고, 참여해주시기로 동의하셔서 본 메일을 송부합니다. 다시 한 번, 참여에 감사드리며 온라인으로 진행되는 설문조사에 응답해주시기를 요청드립니다. 본 연구에 협조해 주신다면, 관광객이 공항에서 더 좋은 경험을 하는 데에 크게 기여하실 수 있습니다.

설문을 시작하시려면 아래 "Take the Survey" 버튼을 눌러 주시기 바랍니다.

**Take the Survey**

또는, 아래 URL 을 직접 복사하여 붙인 후 설문 조사에 참여하실 수 있습니다.  
[\\$\(!://SurveyURL\)](#)

만약 인천공항에서 받으셨던 연구 정보에 관한 내용을 다시 읽고 싶으시다면, 아래 내용을 다시 한 번 참고하십시오.

#### 연구 안내문

#### 공항평가: 비행승객의 공항품질에 대한 바람, 기대, 만족을 중심으로 (Airport Assessment: Air passengers' Desires, Expectations, and Satisfaction with Airport Quality)

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1 단계의 설문에 참여 시 작은 선물을 드리고, 2 단계 온라인 설문 조사 참여 시 추첨을 통해 상품권을 드릴 계획입니다.

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본 연구와 관련하여 궁금하신 사항이 있다면, Texas A&M University 의 Recreation, Park and Tourism Sciences 학과의 Dr. Patrick 에게 전화 1-979-845-8806, 또는 이메일 [jpatrick@tamuedu](mailto:jpatrick@tamuedu) 로 연락하시거나, 김현주에게 전화 1-979-845-4673, 또는 이메일 [hjoo.mj.kim@tamuedu](mailto:hjoo.mj.kim@tamuedu) 로 연락하시기 바랍니다.

연구와 관련된 안내문을 꼼꼼히 읽어주시기 바랍니다. 연구에 동참하시기로 결정하셨다면, 2 단계 온라인 설문조사를 위해, 여행 이후 연락가능한 이메일주소를 제공해 주시기를 요청드립니다. 고맙습니다.

김현주

## APPENDIX 6

### ONLINE QUESTIONNAIRE (ENGLISH)



#### Airport Assessment

Thank you for participating in Texas A&M University assessment of airline passengers' desires, expectations, and satisfaction with airport quality!

The purpose of this study is to understand what air travelers **ideally want** and **realistically anticipate** at airports. Your cooperation will **contribute to improving tourists' airport experiences** as well as airport quality.

If you have questions regarding this study, you may contact **Dr. James Petrick**, Department of Recreation, Park and Tourism Sciences, at (979) 845-8806, [jpetrick@tamu.edu](mailto:jpetrick@tamu.edu), or **Hyun Joo Kim**, at (979) 845-4673, [hjoo.mj.kim@tamu.edu](mailto:hjoo.mj.kim@tamu.edu).

If you would like to be in the study, please click the button below.

---

Next

## APPENDIX 6 (continued)

**Direction**

*There are no right or wrong answers. We are interested in your personal opinion, so please answer each question frankly. This information will be used for statistical purpose only and kept strictly confidential.*

*\* Please answer every question in this questionnaire.*

*\* Please answer questions on the basis of your most recent experience with Incheon International Airport (ICN).*

**Part 1 of Part 8. Travel Information**

Please choose one of following examples or write an answer for each question.

On average, how many trips per year do you take by air?

Where have you ended your trip, which you have been at Incheon Airport (ICN)?  
(Please write the name of your arrival airport or city)

Was this (Incheon Airport) the beginning of your trip, middle or the end?

- Beginning:** this was a departure of a destination
- Middle:** this was a connecting a flight
- End:** this was my final destination

What was the primary purpose of the trip from Incheon Airport?  
(Please select all that apply)

- Work / Business
- Sport Events
- Shopping
- Sightseeing / Pleasure
- Visiting Friends / Relatives
- School-related

## APPENDIX 6 (continued)



### Part 2 of Part 6. Desires Congruency

In Part 2, I will ask you about the DIFFERENCE between your **DESIRES regarding IDEAL AIRPORTS and EXPERIENCES at Incheon Airport (ICN).**

\* If you did not have experiences with certain items, please mark "not applicable."

	How big was the differences between ideal airports and your ICN experience?					How good or bad was this difference? Very bad(-2) – (+2)Very good				
	Extremely Different from what I desired	Somewhat Different from what I desired	Exactly As What I desired	Not Applicable		-2	-1	0	+1	+2
Clear/Visual <b>SIGNS</b> to direct to airport services and facilities	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<b>CONVENIENT FACILITIES</b> available (i.e., carts, free Wi-Fi, etc.)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
A variety of <b>GROUND TRANSPORTATION</b> options to the nearest city	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<b>FASTNESS</b> in check-in, security check, immigration, and baggage claim	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<b>CLEANLINESS</b> (i.e., overall airport, restrooms, etc)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<b>COURTEOUS and KNOWLEDGEABLE</b> airport employees	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<b>DIVERSITY</b> in shops and restaurants	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<b>COMFORTABLE</b> areas to nap, read, and do business	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<b>DECOR</b> that matches with the local culture	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
	Extremely Different from what I desired	Somewhat Different from what I desired	Exactly As What I desired	Not Applicable		-2	-1	0	+1	+2

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## APPENDIX 6 (continued)



### Part 3 of Part 6. Expectation Congruency

In Part 3, I will ask you about the DIFFERENCE between your **EXPECTATIONS regarding Incheon Airport (ICN) and EXPERIENCES at ICN**. Again, the questions in Part 3 are **different** from the previous questions in Part 2. Your EXPECTATION regarding ICN could be based on your previous experiences with ICN, informations on ICN from media or friends, or others.

In comparison to the level of each attribute that you **realistically** anticipated or expected for ICN, how big was the difference between **what you realistically expected and what ICN actually provided**? Please mark the level of difference and your feeling ...

\* If you did not have experiences with certain items, please mark "not applicable."

	How big was the differences between your realistic expectation and your ICN experience?				How good or bad was this difference? Very bad(-2) – (+2)Very good				
	Extremely Different from what I expected	Somewhat Different from what I expected	Exactly As What I expected	Not Applicable	-2	-1	0	+1	+2
Clear/Visual <b>SIGNS</b> to direct to airport services and facilities	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<b>CONVENIENT FACILITIES</b> available (i.e., carts, free Wi-Fi, etc.)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
A variety of <b>GROUND TRANSPORTATION</b> options to the nearest city	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<b>FASTNESS</b> in check-in, security check, immigration, and baggage claim	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<b>CLEANLINESS</b> (i.e., overall airport, restrooms, etc)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<b>COURTEOUS and KNOWLEDGEABLE</b> airport employees	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<b>DIVERSITY</b> in shops and restaurants	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<b>COMFORTABLE</b> areas to nap, read, and do business	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<b>DECOR</b> that matches with the local culture	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
	Extremely Different from what I expected	Somewhat Different from what I expected	Exactly As What I expected	Not Applicable	-2	-1	0	+1	+2

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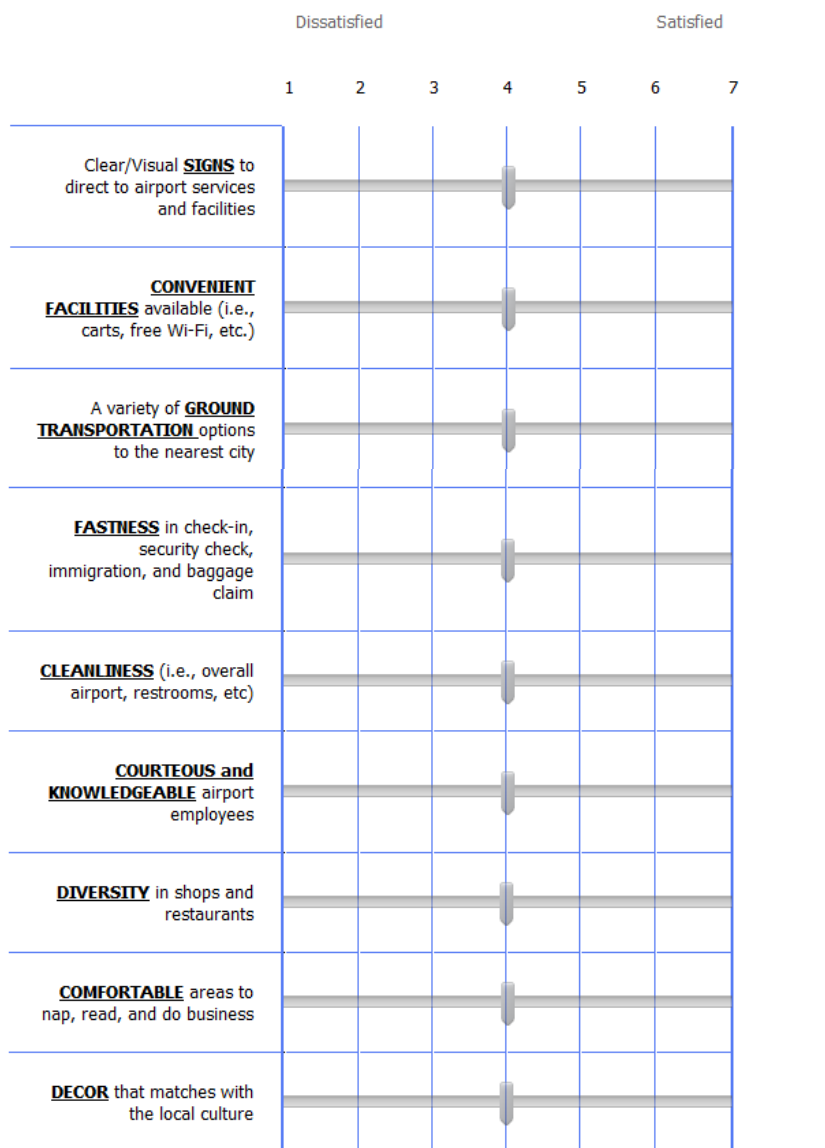


APPENDIX 6 (continued)



**Part 4 of Part 6. Attribute Satisfaction with ICN**

Thinking just about the AIRPORT SERVICES themselves, how satisfied are you with ICN services? Please drag the slider on a number that represents your satisfaction level.



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## APPENDIX 6 (continued)

**Part 5 of Part 6. Overall Satisfaction with ICN**

Thinking about how you feel about overall experience at Incheon Airport (ICN). How SATISFIED are you with Incheon Airport (ICN)?

Please select the closest expression that portrays the level of your satisfaction with ICN.

	Very Dissatisfied	Dissatisfied	Somewhat Dissatisfied	Neither Satisfied nor Dissatisfied	Somewhat Satisfied	Satisfied	Very Satisfied
I was...	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

	Very displeased	Displeased	Somewhat Displeased	Neither Pleased nor Displeased	Somewhat Pleased	Pleased	Very Pleased
I was...	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

	Very frustrated	Frustrated	Somewhat Frustrated	Neither Contented nor Frustrated	Somewhat Contented	Contented	Very Contented
I was...	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

	Very terrible	Terrible	Somewhat Terrible	Neither Delighted nor Terrible	Somewhat Delighted	Delighted	Very Delighted
I felt...	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

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## APPENDIX 6 (continued)

**Part 6 of Part 6. Demographic Information**

*It is the LAST page of the questionnaire! When you finish, please click the "Next" Button in order to complete the survey.*

Please answer the following questions.

What year were you born?

---

1901 ▲  
1902 ☰  
1903  
1904  
1905  
1906  
1907  
1908  
1909  
1910 ▼

---

What ethnic group are you in?

---

- American Indian or Alaska Native
- Asian
- Black or African American
- Hispanic or Latino
- Native Hawaiian or Other Pacific Islanders
- White
- 

My gender is ...

---

- Male
- Female
- 

What country are you from?

---

---

**APPENDIX 6 (continued)**

What is the highest level of education you have completed?

---

- Less than High School
  - High School / GED
  - Some College
  - 2-year College Degree
  - 4-year College Degree
  - Masters Degree
  - Doctoral Degree
  - Professional Degree (JD, MD)
- 

What is your annual income range?

---

- Below \$20,000
  - \$20,000 - \$29,999
  - \$30,000 - \$39,999
  - \$40,000 - \$49,999
  - \$50,000 - \$59,999
  - \$60,000 - \$69,999
  - \$70,000 - \$79,999
  - \$80,000 - \$89,999
  - \$90,000 or more
- 

Open-ended comments: Please give us any comments regarding airports, either positive or negative!

If you want to be entered into a drawing for a gift card, please provide your **e-mail address** that can be reached.

You have completed the questionnaire, "Airport Assessment."  
**Now, please CLICK the 'Next' button below.**

## APPENDIX 7

## ONLINE QUESTIONNAIRE (KOREAN)

**공항 평가 (Airport Assessment)**

Texas A&M University에서 주관하는 공항 평가 연구에 참여해 주셔서 진심으로 고맙습니다. 본 연구의 목적은 공항을 이용하는 여행객들의 공항 품질에 대한 기대와 만족 수준을 이해하는 것입니다. 여러분의 참여는 공항 품질 향상에 이바지함은 물론, 여행객들이 공항에서 더 좋은 경험을 하는 데에 크게 기여할 것입니다.

본 연구와 관련하여 궁금하신 사항이 있다면, Texas A&M University의 Recreation, Park and Tourism Sciences 학과의 Dr. Petrick에게 전화 1-979-845-8806, 또는 이메일 [jpetrick@tamu.edu](mailto:jpetrick@tamu.edu)로 연락하시거나, 김현주에게 전화 1-979-845-4673, 또는 이메일 [hjoo.mj.kim@tamu.edu](mailto:hjoo.mj.kim@tamu.edu)로 연락하시기 바랍니다.

연구에 참여하시려면, 오른쪽 아래 화살표 버튼을 클릭해주시기 바랍니다.

## APPENDIX 7 (continued)



## 지침

본 설문에는 옳은 답도, 그른 답도 없습니다. 설문 참여자 개인의 의견을 듣는 것이 연구의 목적이니, 각 질문에 솔직하게 응답해 주시기 바랍니다. 설문 응답은 연구용 통계 목적으로만 사용되며 내용은 철저히 극비 처리 됩니다.

\* 설문의 모든 질문에 응답해 주시기 바랍니다.

\* LA 국제 공항 (LAX)에서의 경험을 바탕으로 질문에 답해 주시기 바랍니다.

## Part 1 of Part 6. 여행 정보

보기 중 한가지를 선택하거나, 질문에 대한 답변을 적어 주시기 바랍니다.

평균적으로, 1년에 비행기를 타고 여행하는 횟수는 몇 번이나 됩니까?

LA공항 (LAX)과 관련된 여행의 목적지(=최종목적지)는 어디였습니까?  
(도착 공항명이나 도시명을 적어 주시기 바랍니다)

LA공항 (LAX)이 여행의 시작, 중간, 끝 중 어디에 해당합니까?

- 시작: 목적지로의 출발
- 중간: 비행기 환승
- 끝: 여행의 목적지

LA공항(LAX)과 관련된 여행의 주된 목적은 무엇입니까?  
(해당되는 모든 항목을 선택해주시기 바랍니다)

- 업무/출장
- 스포츠 관련
- 쇼핑
- 관광/ 위락
- 친지 또는 친구 방문
- 학회 관련

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APPENDIX 7 (continued)



Part 2 of Part 6. 바람/육구 일치

Part 2에서는 **이상적인 공항에 대한 바람/육구와 LA공항 (LAX)에서의 경험 사이의 차이**에 대해 질문할 것입니다.

응답자께서 **이상적으로** 바라는 공항의 수준과 비교했을 때, **이상적으로 원하는 공항과 실제로 LA공항(LAX)에서 경험한 것**에는 얼마나 큰 차이가 있습니까? 그 차이점의 수준과 느낌을 표시해 주시기 바랍니다.

\* 만약 해당 항목에 대한 경험이 없으시다면, "해당 없음"에 표시해 주시기 바랍니다.

	이상적인 공항과 LA공항 경험이 얼마나 다른지?								이 차이가 얼마나 좋습니까/나쁘니까? 매우나쁨(-2) - (+2)매우 좋음				
	바라던 것과 완전히 다름		바라던 것과 다소 다름		바라던 것과 완전히 같음		해당 없음		-2	-1	0	+1	+2
공항 서비스/시설을 안내하는 눈에 띄는 <b>안내 표지판</b>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
편리한 <b>시설 이용</b> (주차장, 카트, 무료 Wi-Fi 등)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
근처 도시로 연결되는 다양한 <b>대중교통 수단</b>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<b>신속한</b> 체크인, 보안 점검, 입국 심사, 수하물 찾기 등.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<b>깨끗한</b> 공항 (공항 전체 및 화장실)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
공항 서비스에 대해 잘 아는, 친절 한 <b>공항 직원</b>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
다양한 품목을 구비한 <b>면세점</b> 과 선택의 폭이 넓은 <b>음식점</b>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
휴식을 취하거나 책읽기에 적합한 <b>편안한 좌석</b> (탑승 게이트 주변)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
지역 문화와 어울리는 <b>장식/예술품</b>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
	바라던 것과 완전히 다름		바라던 것과 다소 다름		바라던 것과 완전히 같음		해당 없음		-2	-1	0	+1	+2

APPENDIX 7 (continued)



Part 3 of Part 6. 기대 일치

Part 3에서는 LA공항(LAX)에 기대하는 것과 LA공항(LAX)에서의 경험 사이의 차이에 대해 질문할 것입니다.

다시 한 번 말씀드리지만, Part 3의 질문들은 이전 Part 2 질문들과 다릅니다. LA공항(LAX)에 대한 기대는 LA공항에서의 과거 경험, 언론이나 친구들로부터 들었던 정보 등에 의해 형성될 수 있습니다.

현실적으로 LA공항 (LAX)에 기대했던 수준과 비교했을 때, 현실적으로 기대했던 것과 실제 LA공항(LAX)에서 경험한 것의 차이는 얼마나 큰지? 그 차이점의 수준과 느낌을 표시해 주시기 바랍니다.

\* 만약 해당 항목에 대한 경험이 없으시다면, "해당 없음"에 표시해 주시기 바랍니다.

	기대와 LA공항 경험이 얼마나 다릅니까?				이 차이가 얼마나 좋습니까/나쁘니까? 매우나쁨(-2) - (+2)매우 좋음				
	기대와 완전히 다름	기대와 다소 다름	기대와 완전히 같음	해당 없음	-2	-1	0	+1	+2
공항 서비스/시설을 안내하는 눈에 띄는 안내 표지판	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
편리한 시설 이용 (주차장, 카트, 무료 Wi-Fi 등)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
근처 도시로 연결되는 다양한 대중교통 수단	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
신속한 체크인, 보안 점검, 입국 심사, 수하물 찾기 등.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
깨끗한 공항 (공항 전체 및 화장실)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
공항 서비스에 대해 잘 아는, 친절한 공항 직원	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
다양한 품목을 구비한 면세점과 선택의 폭이 넓은 음식점	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
휴식을 취하거나 책임기에 적합한 편안한 좌석(탑승 게이트 주변)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
지역 문화와 어울리는 장식/예술품	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
	기대와 완전히 다름	기대와 다소 다름	기대와 완전히 같음	해당 없음	-2	-1	0	+1	+2

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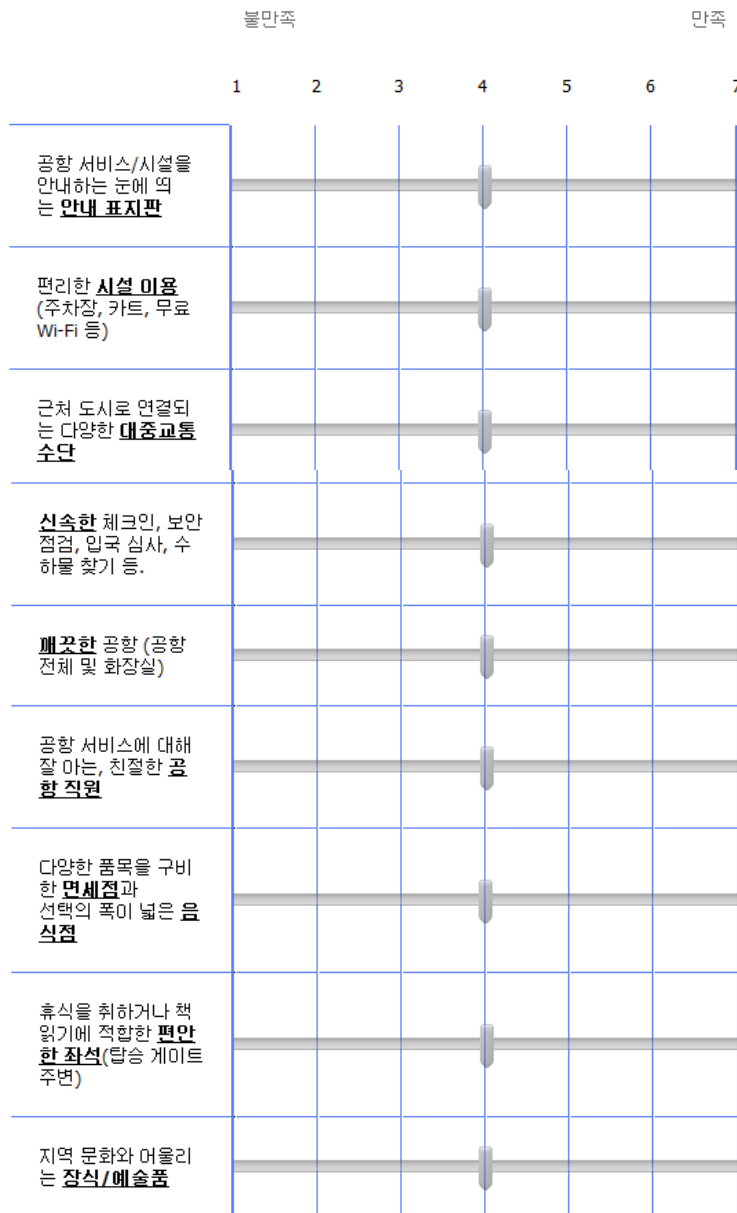


APPENDIX 7 (continued)



**Part 4 of Part 8. LA공항(LAX) 요소 만족**

LA공항(LAX)의 서비스 자체만 떠올렸을 때, LA공항 서비스에 얼마나 만족하십니까? 막대를 움직여 만족 수준을 표시해 주시기 바랍니다.



## APPENDIX 7 (continued)



## Part 5 of Part 6. LA공항 전반적 만족도

LA공항 (LAX)에서의 전반적인 경험에 대한 느낌을 떠올려 보시기 바랍니다. LA공항(LAX)에 얼마나 만족하십니까?

LA공항(LAX)에 대한 만족 수준을 표현하는 가장 가까운 표현을 선택하시기 바랍니다.

	매우 불만 족	불만족	다소 불만 족	불만도 만 족도 아님	다소 만족	만족	매우 만족
나는 ...했다	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

	매우 기분 이상한	기분이 상 한	다소 기분 이상한	즐거지도 기분 상하 지도 않은	다소 즐거 운	즐거운	매우 즐거 운
나는 ...기분이었다	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

	매우 부족 한	부족한	다소 부족 한	흡족하지 도 부족하 지도 않은	다소 흡족 한	흡족한	매우 흡족 한
나는 ...게 느꼈다	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

	매우 실망 스러운	실망스러 운	다소 실망 스러운	기쁘지도 실망스럽 지도 않은	다소 기쁜	기쁜	매우 기쁜
나는 ...(웠)다	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

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## APPENDIX 7 (continued)



## Part 6 of Part 6. 개인 정보

*Part 8은 설문지의 마지막입니다. 설문을 성공적으로 마치시려면, 오른쪽 아래의 "Next" 버튼을 클릭해 주시기 바랍니다.*

아래 질문에 대해 주시기 바랍니다.

태어난 년도를 선택해 주시기 바랍니다.

1901	▲
1902	☰
1903	
1904	
1905	
1906	
1907	
1908	
1909	
1910	▼

어떤 인종에 속하는지 선택해 주시기 바랍니다.

- 아메리칸 인디언/ 알래스카 원주민
- 아시안
- 흑인/아프리카인 아메리칸
- 히스패닉/라티노
- 하와이 원주민 또는 태평양 섬인
- 백인

성별을 선택해 주시기 바랍니다.

- 남성
- 여성

출신 국가를 적어 주시기 바랍니다.

## APPENDIX 7 (continued)

교육을 마친 학력을 선택해 주시기 바랍니다.

- 고등학교 이하
- 고등학교 졸업
- 2년제 대학
- 4년제 대학
- 석사
- 박사
- 전문 학위(변호사, 의사 등)

연 수입을 선택해 주시기 바랍니다.

- 2,000만원 이하
- 2,000만원 - 2,999만원
- 3,000만원 - 3,999만원
- 4,000만원 - 4,999만원
- 5,000만원 - 5,999만원
- 6,000만원 - 6,999만원
- 7,000만원 - 7,999만원
- 8,000만원 - 8,999만원
- 9,000만원 이상

공항과 관련된 그 어떤 의견도 좋습니다. 자유롭게 적어 주세요!

상품권 추첨에 응모하기를 원하시면, 이메일 주소를 적어 주시기 바랍니다.

"공항 평가"에 대한 설문 조사를 마치겠습니다.  
오른쪽 아래의 **Next** 버튼을 클릭해 주시기 바랍니다!

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**VITA**

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