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The Impact of Airport Service Quality Dimension on Overall Airport Experience and Impression

Redha Widarsyah

University of Nevada, Las Vegas, widarsya007@gmail.com

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THE IMPACT OF AIRPORT SERVICE QUALITY DIMENSIONS ON OVERALL
AIRPORT EXPERIENCE AND IMPRESSION

By

Redha Widarsyah

Bachelor of Science in Hotel Administration
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A thesis submitted in partial fulfillment
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Redha Widarsyah

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William F. Harrah College of Hotel Administration

Seyhmus Baloglu, Ph.D., Committee Chair

Tony Henthorne, Ph.D., Committee Member

David Christianson, Ph.D., Committee Member

Hualiang Teng, Ph.D., Graduate College Representative

Thomas Piechota, Ph.D., Interim Vice President for Research &
Dean of the Graduate College

May 2013

ABSTRACT

The Impact of Airport Service Quality Dimensions on Overall Airport Experience and Impression

By

Redha Widarsyah

Dr.Seyhmus Baloglu, Examination Committee Chair
Professor & Assistant Dean for Research and International Programs
William F. Harrah College of Hotel Administration
University of Nevada Las Vegas

This research examines the relationship between seven airport service dimensions (Access, Services and Facilities, Dining, Shopping, Service Personnel and Security, Environment, and Immigration and Customs) and overall passenger perceptions of service quality. The study used convenience sampling collecting data from a total of 304 travelers who were passengers at four major international airports in the West Coast region of United States – Las Vegas McCarran International, Los Angeles International, San Francisco International, and Seattle-Tacoma International. The data was collected online through Qualtrics with a self-administered questionnaire and it was analyzed using multiple linear regression.

Airport access, environment, dining, and immigration were found to have a significant and positive relationship to passengers' overall perception of airport service quality. Of the four dimensions found to be significant in the study, airport environment was revealed to have the most influence in affecting passengers' perception of airport service quality, followed by access, dining, and finally immigration and customs services. Answers to the qualitative (open-ended) question about passengers' overall experience at their selected airport offered further explanation in addressing specific issues within each airport service dimension. The findings of this study will help airport administrators and

local tourism authorities to identify important service dimensions in the airport and to understand the impact each service dimension has on perceptions of overall airport service quality. The findings will also serve as a guide for future studies on the relationship between different service dimensions and overall service quality in the airport industry.

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CHAPTER I

Introduction

In 2011, the International Trade Administration at the U.S. Department of Commerce (2012) reported that international visitors traveling to the United States had reached 62.7 million passengers. Over the next five years, the International Trade Administration expected that United States will experience 3.6 to 4.3 percent average annual growth in travel and tourism. ITA projected that over 66 million travelers will visit the United States in 2012. This represented an increase of 6 percent from 2011 visitor volume. The positive outlook experienced by the United States in the travel and tourism sector was also experienced worldwide. In 2012, the United Nation World Tourism Organization (UNWTO) recorded an all-time high in international tourist arrivals with over 1 billion arrivals in just one year (Kasseter, 2013).

Much of the growth in global tourism today has been facilitated, in major part by an increase in accessibility at many tourists' destinations (Duval, 2007). The recent developments in transportation infrastructure and technology allowed greater numbers of tourists to travel to far away destinations around the world. At the center of this development is the air transportation system. Air transport has become the fundamental cog in the global tourism interaction sphere (Duval, 2007). Thus, understanding the state of the air industry has become very important today, as it could single-handedly shape tourist flows where air access is the dominant network provision for accessibility and connectivity.

In 2012, the airport industry generated \$1.0 billion in revenue with profitability mounting near \$266.9 million (Samadi, 2012). The recent recovery of air transportation industries over the last five years combined with increasing demand from domestic and international airlines, had also increased the number of passengers that travel through airports, raising airport revenues substantially. In addition to rising air travel demand, the new U.S. Federal Aviation Administration's initiative to convert existing U.S. air traffic control systems to GPS guided air traffic control technology or ADS-B (Automatic Dependent Surveillance Broadcast) and other NextGen system would expand airport capacity to manage increasing air traffic in the upcoming years. The administration projected that air traffic would double in the next 20 years (Demerjian, 2007).

With the expected positive growth of the airport industry, major airports have invested in their operation through expansion or renovation of existing terminal. Several major airports such as San Francisco International Airport (SFO) and Las Vegas McCarran International Airport (LAS) opened their newest terminals in 2011 and 2012 respectively. San Francisco's newly overhauled Terminal 2 featured cushioned ottomans, 350 power outlets, art exhibits, a play area for children, and hydration stations. The recent expansion and renovation of San Francisco International Terminal 2 was prompted primarily by the growing competition among major international airports in the West Coast region (Mutzabaugh, 2011) to be the Pacific gateway for international travel to North America. Most recently, Las Vegas opened its new Terminal 3 in June 2012. The \$2.4 billion facility would serve as the primary facility for all international arrivals to Las Vegas. The size and timing of Terminal 3 was significant to Las Vegas' tourism industry, since the Las Vegas Convention and Visitors Authority sought to increase foreign tourist

visits from 18% of all visitors in 2010 to 30 percent by the end of the decade (Velotta, 2012).

With the growing investment in airport infrastructure and services along with competition within the airport industry, airport services would become the differentiating factor among airports in the United States. However, research conducted in this field of study has been primarily focused on internal measures of service performance, not consumers' perceptions. Although internal service measures are useful for benchmarking processes, these measurements have lacked a true customer perspective (Correia & Wirashinge, 2004). While airport managers have often measured customers' opinions and attitudes directly, these measurements did not communicate whether significant improvement in particular areas of airport services would yield significant improvement in customers' satisfaction with the airport (Fodness & Murray, 2007). Therefore, it is important for airport management to have an empirical understanding of the importance of different airport functions and their significance to passengers' overall experience with the airport.

Purpose and Objectives of the study

The purpose of the study was to examine the impact of different airport service quality dimensions on overall airport service quality as perceived by passengers. The specific objectives of the study were 1) to identify and develop a service quality framework for airports, 2) to apply the proposed framework of airport service quality and investigate the relationship between different airport service quality dimensions and the passengers' overall impression of airport service quality.

Statement of Problem

The growing demand for global travel along with an increase in airport infrastructure investment and new technological developments in airport traffic systems and air carriers has prompted an aggressive expansion of airport terminal capacity and service features. Recent airport terminal expansion projects such as San Francisco Airport's Terminal 2 and Las Vegas McCarran Airport's Terminal 3 are only two examples of the industry's response to this trend. With the new FAA initiative to implement NewGen systems in every airport in the United States by 2025, major airports across America will face stiff competition with neighboring airports in the same region. The San Francisco Airport is a case in point. The decision by San Francisco Airport to overhaul its 1954-vintage terminal building to a 21st century Terminal 2 in 2011 was based on the growing competition between large airports in the West Coast region to become the major international gateway to the USA from the Pacific. Thus, it has become very important to determine whether such strategic investment in airport services and features in these new terminals will enhance passengers' airport experience and affect their airport preference within the region.

Justification

Research in airport service has suffered from a lack of systematic understanding of airport travelers' perceptions and expectations. Current research within the industry has focused more on convenience and popular attitudes than on consumer perceptions of individual airport functions and services (Fodness & Murray, 2007). This methodology neglected the significance of passengers' individual experiences with different airport service features and the overall impact of this experience on the traveler's perception of

airport service quality. In addition, airports, as natural monopolies of their market, have tended to create a take-it or leave-it proposition in the point of view of its customers. Thus, improvements that were deemed important in enhancing the customer's experience in the airport were seen as unnecessary and unjustified burdens to the management (Rhoades, Waguespack, & Young, 2000).

Hypotheses

The hypotheses for the study are:

H1: There is a positive relationship between passengers' experience of airport access quality and overall perception of airport service quality.

H2: There is a positive relationship between passengers' experience of airport service and facilities quality and overall perception of airport service quality.

H3: There is a positive relationship between passengers' experience of airport restaurant/dining facilities quality and overall perception of airport service quality.

H4: There is a positive relationship between passenger's experience of airport shopping quality and overall perception of airport service quality.

H5: There is a positive relationship between passengers' experience of airport security and personnel quality and overall perception of airport service quality.

H6: There is a positive relationship between passengers' experience of the airport environment quality and overall perception of airport service quality

H7: There is a positive relationship between passengers' experience of the airport immigration and custom services quality and overall perception of airport service quality.

Assumptions

The study assumed that the respondents were truthful and honest in their response to the questions. It was also assumed that the sampling information provided by Qualtrics (Qualtrics.com) was accurate.

Limitations

There were several limitations of the study. First, the results were limited to the airport service quality dimensions included in the study. Second, the sampling method, using Qualtrics panel members, did not permit an effective implementation of random sampling. Third, non-response bias was not checked. Finally, the results were limited to the major airports included in the study. Therefore, the findings may not be generalizable over the population.

CHAPTER II

LITERATURE REVIEW

Service has historically been an important and integral way for service providers to differentiate themselves in a crowded marketplace. The power of service, as described by Parasuraman, Zeithaml, and Berry (1985) has often been the core factor which distinguished successful organizations from unsuccessful organizations. It has therefore been the responsibility of business owners and management to ensure that their operation is operating at a high level of service. Although service quality is crucial, many entities still struggle to adequately measure and understand the concept of service quality. In 1985, Parasuraman et al. (1985) proposed a service model called SERVQUAL. The main purpose of SERVQUAL was to measure the level of discrepancy between customer expectations and customer perceptions of an entity's level of service. Since then, many entities and business organizations have modified and applied the SERVQUAL model to their own business enterprise and industry.

One enterprise that lacked the application of this widely popular model has been the airport industry. The airport industry, while traditionally limited to public infrastructure, has been growing in importance due to its facilitation of the rise of global travel demand and the tourism industry (Samadi, 2012). As airplanes became more efficient, increasing passenger capacity and the ability to travel longer distances to far away destinations, an increase in the number of passengers and their expectations of services within the airport was inevitable.

One way for airports to stand out from the competition would be through differentiation in airport services. While service had always been a focus among air transport analysts and academics, the study of how they measure their service was still limited to spatial and temporal scale measurement (Correia & Wirasinghe, 2004). While most researchers focused on temporal and spatial effects of airport services on consumer perceptions, Fodness and Murray (2007) proposed a different airport service measurement construct which included other service dimensions and the passengers' individual attitude toward the airport services in evaluating changes in the overall airport service quality. In "Passengers Expectation of Airport Service Quality," they proposed a framework of airport service quality with three major service dimensions: Servicescape, Services, and Service Personnel. For each individual dimension, additional sub-dimensions followed. The combination of the passengers' perception of these three service dimensions along with their sub-dimension affected their overall perception of airport service quality.

Overview of the airport industry

In 2012, the airport industry generated \$1.0 billion in revenue with \$266.9 million in profit. The positive growth of the airport industry had been primarily fueled by the recovery of air transportation industries in the last five years. Despite increased investments in airports and higher passenger numbers both in 2007 and 2008, airport operators experienced a decline of 14.4% in revenue in 2009. The decline was caused by the failing demand from major airlines and lower passenger numbers (Samadi, 2012). External economic factors, such as the economic recession of 2008, along with higher fuel costs and slowing demand, contributed to the setbacks which occurred from 2011

onward. However, by 2012 the demand for air travel had recovered strongly. New aircraft deliveries had and would continue to increase the need for infrastructure development in the future. Thus, over the next five years to 2017, Samadi (2012) predicted that industry revenue would grow 0.9% per year on average to \$7.3 billion. The following are key external drivers for the airport industry:

1. Demand from domestic and international airlines

As the number of passengers traveling through airports increases, airport revenues for airports would rise as well. When demand for domestic air travel rose, so would airport operation revenues. Capacity reduction by airlines would also reduce the number of people at the airport and adversely affect airport revenue (Samadi, 2012).

2. Federal Funding for Transportation

Any increase in airport funding by the federal government in the form of capital grants or assistance in security related costs would increase the financial viability of airports.

3. Corporate Sentiment

Business sentiment was important for smaller airports that cater to private jet and other private planes. Thus, changes in business sentiment would affect revenue in smaller airports.

4. New Technology provides a boost

The introduction of new aircraft such as the Airbus A380 and the Boeing 787 Dreamliner have greatly expanded passenger airline capacity and fuel efficiency, thus increasing the number of passengers at airports. The FAA's new NEXTGen air traffic control technology (ATC) would also increase efficiency in aircraft movement between

airports (Samadi, 2012), thereby expanding the number of flights able to operate between airports. By the end of 2025, FAA estimated that air traffic in North America will double as a result of the NEXTGen Air Traffic Control technology implementation.

5. Brighter Revenue Prospects

Industry revenue was expected to rise from \$7.0 billion to \$7.3 billion by 2017. This growth would be mainly fueled by the increasing demand for air travel, a small increase in FAA airport funding, and higher legislative compliance requirements (Samadi, 2012). Boeing predicted that in the period between 2009 and 2028, the number of airline passengers worldwide would increase by 4.1% per year, with the worldwide aircraft fleet expanding 3.2% annually (Samadi, 2012). This growth means more people and flights coming into all countries and using domestic airports, thus increasing demand for airport services.

6. Profitability Recovers

With the recovery of air travel throughout 2012, airports would achieve steady profit growth and expand their current average profit margin of 3.8% to about 5.0% by 2017 (Samadi, 2012). This growth in profitability reflected the expansion activities that major hubs would undertake to address congested air traffic. The government would also promote open-skies agreements to liberalize the air transport industry and expand the tourism industry, attracting more carriers to the United States.

7. Participation falls

The number of establishments would be likely to decrease at an annual rate of 2.4% to 1,515 over the next five years to 2017 (Samadi, 2012). Major industry players

would consolidate holdings in specific high-return geographic areas of the country, acquiring small operators to exploit economies of scale or forcing them out of business.

SERVQUAL

In the era of high competition and vast information, businesses depended on service quality to differentiate themselves from competitors. However, the inherent characteristics of service – intangibility, inseparability, and heterogeneity -- made it difficult for service practitioners to define and measure service quality. To solve this problem, Parasuraman et al. (1985) devised a conceptual model to measure service quality called SERVQUAL. Drawing from multiple literature and historical perspectives on service quality, Parasuraman, Ziethmal, and Berry (1988) concluded that service quality would be best measured as a perceived service quality. They defined that perceived service quality as a “global judgment, or attitude, relating to superiority of the service (pg.42).” The authors viewed perceived service quality as “the degree and direction of discrepancy between consumer’s perception and service (pg.41)” (Parasuraman et al., 1985). The concept of perceived service quality can be expressed in the following equation.

$$Q = P - E, \text{ or SERVQUAL score} = \text{Perception Score} - \text{Expectation Score}$$

In measuring service quality, the model used multiple item scale. The SERVQUAL scale measures service along five dimensions:

- Tangibles: The physical evidence of service
- Reliability: Consistency of performance and dependability
- Responsiveness: Willingness or reactions of employees to provide service

- Assurance: Knowledge and courtesy of employees and their ability to inspire trust and confidence
- Empathy : Individualized attention the firm provides its consumers

When Parasuraman, Zeithaml, Berry (1991) designed the SERVQUAL, they designed the instrument so that it could be widely applied to many industries.

Parasuraman et al. (1991) believed that it was the purpose of SERVQUAL to serve as a diagnostic methodology for uncovering broad areas of a company's service quality shortfalls and strengths. SERVQUAL's dimension and items represented careful evaluation criteria that transcend specific companies and industries. In concurrence with this view, SERVQUAL as an instrument for measuring service quality has been applied to a variety of service sectors, including the health care sector (Carman, 1990; Headley & Miller, 1993; Lam, 2007), banking (Mels, Boshoff, & Nell, 1997; Zhou, Zhang, & Xu, 2002), fast food (Lee & Ulgado, 1997), retail chains (Parasuraman, Zeithaml, & Berry, 1994) and library services (Cook & Thompson, 2000).

While SERVQUAL has been applied to many different sectors in the service industry and utilized by service managers and academics, some aspects of the theory have been thoroughly debated. The two most important criticisms made by critics and researchers are the reliability model and the predictive validity of its instrument.

In testing the reliability of the instrument, researchers used Cronnback's alpha coefficient to validate the cohesiveness of the SERVQUAL scale (Espinoza, 1999; Gournaris, 2005; Kang, James, & Alexanderis, 2002; Landrum, Prybutok, & Zhang, 2007). However, over the past ten years, many researchers have criticized the use of Cronnback's alpha to measure the psychometric quality of the SERVQUAL scale (Finn

& Kayande, 1997; Rossiter, 2002). Rossiter (2002) argued that the reliability of scale score differs according to who was performing the rating and type of attribute in the construct.

Another criticism made of SERVQUAL was with regard to its predictive validity, particularly its empirical relationship with other conceptually related constructs.

Durvasula, Lysonski, and Mehta (1999) concluded that the perception scores outperformed the gap scores in predicting overall evaluation of service. In addition, Zhou et al. (2002) reported that the predictive validity was poor, even when perception-only or gap scores were used as predictors. In contrast to the above findings, Laudrum et al. (2007) reported that the five dimensions of SERVPERF explain 76% of the variance in satisfaction.

SERVPERF

SERVPERF or Service Performance was introduced by Cronin and Taylor (1992) as a replacement for the SERVQUAL method. Cronin and Taylor argued that SERVPERF was better in explaining variance in service quality than SERVQUAL in all three categories: overall service quality, satisfaction, and purchase intention. To prove this argument, Cronin and Taylor (1992) performed an exact study of Parasuraman, Zeithaml, and Berry (1985) SERVQUAL study. Data for this study was collected from personal interviews conducted in a medium-sized city in the Southeastern United States. 660 survey questionnaires were collected on service quality in four industries (Banking, Financial Services, Repair and Maintenance, and Long-Distance Phone Services).

Twenty-two individual performance scales used in the original SERVQUAL study were used in the survey.

Table 1
Correlation Coefficients for Structural Model SERVPERF

	SERVQUAL	Weighted SERVQUAL	SERVPERF	Weighted SERVPERF	Overall Service Quality	Satisfaction	Purchase Intention
SERVQUAL	1.0000						
Weighted SERVQUAL	.9787	1.0000					
SERVPERF	.8100	.7968	1.0000				
Weighted SERVPERF	.6589	.6307	.9093	1.0000			
Overall Service Quality	.5430	.5394	.6012	.5572	1.0000		
Satisfaction	.5605	.5559	.5978	.5513	.8175	1.0000	
Purchase Intention	.3534	.3613	.3647	.3486	.5272	.5334	1.0000

Note. Correlation coefficients of the structural models between SERVQUAL, Weighted SERVQUAL, SERVPERF, Weighted SERVPERF, Overall Service Quality, Satisfaction, and Purchase Intention. Adapted from “Measuring Service Quality: A Reexamination and Extension,” by J. J. Cronin & S. A. Taylor, 1992, *Journal of Marketing*,56(3),55.

Table 1 shows the results of the study. The results demonstrated SERVPERF’s superiority in explaining more of the variation in service quality, satisfaction, and purchase intention than SERVQUAL’s model proposed.

Academics in service management and marketing also supported Cronin and Taylor’s view. Citing a lack of empirical studies comparing customer satisfaction method’s relative validity and reliability in the hospitality industry, Yuksel and Rimmington (1998) investigated the relative validity differences of the six customer satisfaction measurements (*Performance only; Performance weighted by importance; importance minus performance; direct confirmation-disconfirmation; confirmation-*

disconfirmation weighted by importance; and performance minus predictive expectation).

Four different types of questionnaires which assessed four different methods of customer satisfaction were administered in person to 460 restaurant customers with 115 completed for each questionnaire. Their analysis of the survey results suggested that the performance-only model or SERVPERF was found to have higher convergent validity and predictive power in measuring customer satisfaction compared to any other satisfaction models (Yuksel & Rimmington, 1998). Their data analyses also found that inclusion of importance scores did not make any substantial difference in the predictive power of the models. Thus, they concluded that measuring customer satisfaction with performance-only emerged as the most reliable and valid measure of satisfaction.

A revisit and reexamination of the SERVPERF was also carried out by the original authors (Cronin, Brady, & Brand, 2002). Since the first introduction of the SERVPERF method in 1992, a consensus has not been reached on the superiority of performance-only measures of service quality. One of the major disagreements was that many service organizations and academics still agreed that SERVQUAL was the appropriate service quality measurement tool. Thus, Cronin et al. (2002) replicated and extended the SERVPERF study to add further support to the relative superiority of performance-only measure. 660 questionnaires, which measured four different service industries (Fast food, Banking, Pest Control, and Dry Cleaning) were randomly collected through personal interviews in a medium sized city in the southeastern US. Results of the study supported Cronin and Taylor's (1992) argument for the superiority of performance-only measures in effectively capturing the service quality perceptions of consumers across a variety of service products.

However, not all academics agreed on the relative superiority of the SERVPERF model over SERVQUAL (Carrillat, Jaramillo, & Mulki, 2007; Hudson, Hudson, & Miller, 2004;). Hudson et al. (2004) investigated differences in service measurement instruments (SERVQUAL, SERVPERF, and Importance- Performance Analysis or IPA) to compare which method will offer the greatest validity with regard to consumer service quality within the tourism sector. To accomplish this, 250 people from all over the United Kingdom were asked to participate in the study with 220 questionnaires completed. Analysis of the results of the survey showed no significant differences between SERVPERF, SERVQUAL, and IPA in calculating service quality. The Hudson et al. (2004) two-way ANOVA test found no statistically significant differences among all three approaches in measuring satisfaction. Carrillat et al. also found a similar finding in 2007. Understanding that the operationalization of service quality has continued to provoke debate among academics, Carrillat et al. (2007) conducted a meta-analysis on empirical studies of service quality to find whether significant differences existed between performance-only measure and SERVQUAL. The results of the meta-analysis suggested that both SERVPERF and SERVQUAL were adequate and equally valid predictors of Overall Service Quality. The study also found that there is no relative superiority between the scales in predicting the Overall service quality. The implication of these findings is that either method is an effective service quality instrument. Since neither methodology is superior in predicting overall service quality, practitioners and academics alike could choose the method most convenient to their needs. Hudson et al. (2004) did suggest that SERVPERF would be the most cost and time effective measurement to use, if time and cost were a constraint.

Related Airport Services Literature

Aviation planners, architects, engineers, and airport towers have long relied on L-O-S (Level of Service) standards, developed by IATA (International Air Transport Association) in the early 70s, to help them make important development decisions. However, the initial effort to develop LOS was not pioneered by IATA. Instead, it originated in Transport Canada's "Level of Service Requirements for Passengers Processing Area in Airport Terminal" paper.

Seneviratne and Martel (1991) conducted research on the different variables which influence the perceptions of passengers. They found that information, availability of seats, and waiting times were the three most important variables affecting passenger perception of terminal processing areas.

Caves and Pickard (2001) conducted a similar study to investigate variables that affect consumer's perceptions of airport LOS. Their research concluded that after safety, time and elimination of the unknown are two of the most important human needs that passengers needed to be fulfilled in order to be at ease in the airport passenger terminal. Considerable research and discussion in the airport industry was devoted to the adoption of LOS standards and associated criteria to evaluate LOS in the design of airport passenger terminal processing systems. In evaluating the factors which affect level of service, Heathington and Jones (1975) examined 25 characteristics relevant to the airport terminal which affect level of service. These characteristics included, but were not limited to availability of seating, walking distance, accessibility, orientation, waiting time and occupancy.

Brink and Maddison (1975) concluded that level of service, as defined by airport terminal passengers, was a subjective impression of the quality of the transfer between the access mode and the aircraft. This subjective perception of quality depended on a series of factors, including but not necessarily limited to the following: Time necessary to be processed through the landside, cost of airfare and airport services, expectations of level of service, treatment by service providers, and physical comfort and convenience.

Muyamiz and Ashford (1985) developed another initiative to evaluate passenger perception of QOS (Quality of Service). The authors used P-R (Perception-Response) to depict the relationship between the percentage of passengers stating their level of satisfaction with service encountered at a particular facility and the value measure of service. The percentage of passengers replying to whether a certain amount of time (delay or time spent) at a particular facility was good, tolerable, or bad is related to amount of time (delayed or spent).

Since LOS or service itself was considered an imprecise quantity, many airport researchers began to use the fuzzy set theory model to measure it. Since its inception, fuzzy set theory has been applied in a wide variety of fields that have to deal with imprecise quantities. As an example, Park (as cited in Correia & Wirasinghe, 2004, p.4) used fuzzy set theory for LOS airport terminal evaluation on the basis of passenger perceptions, considering three factors: temporal or spatial (quantitative measures), comfort, and reasonable service (qualitative measure).

Correia and Wirashinghe (2004) conducted a review of the various approaches that researchers and airport executives had used to measure LOS (Level of Service) for airport terminal buildings. They concluded that there are two deficiencies encountered by

the current approaches and methods of adapting or evaluating LOS. First, the methods used in evaluating LOS ratings cannot correlate those quality ratings to performance measures. Second, the methods propose performance measures, but cannot assess passenger perception of these values.

Theoretical Framework of Airport Service Quality

The development of a framework or theoretical proposition on airport service quality came from literature in services and marketing. Most of the literature used primarily focused on retail settings. Retail was somewhat similar to the airport industry, as it offered two categories of experience to customers: in-store experience and experience with the merchandise (Dabholkar, Thorpe, & Rentz 1996). On the other hand, the passenger focused on airport services mainly consider the end users experience with the airport facilities and the services which the airport offers. Facilities included both goods and services (Fodness and Murray, 2007). Therefore, retail literature was the foundation on which the framework for airport service quality measurement was based.

Dabholkar et al. (1996) found that there were five dimensions which shaped consumer perceptions of service quality in a retail environment. Those dimensions were physical aspects, reliability, personal interactions, problem solving, and policy. The physical aspects dimension was measured based upon the internal and external appearance of the retail store and its convenience in helping customers find what they need. The second dimension, reliability, was similar to the SERVQUAL reliability dimension, which deals with the performance and dependability of the service entity in meeting the needs of their customers. Sub-dimensions in the reliability dimension

included “keeping promises” and “doing it right.” Personal interaction referred to the quality of treatment that customers received from the employees. Problem solving addressed the handling of returns and exchanges as well as complaints. Customers were found to be very sensitive to how service providers attended to their problems and complaints. The last dimension, policy, captures aspects of service quality that are directly influenced by store policy, such as convenient hours, convenient parking, and quality of products.

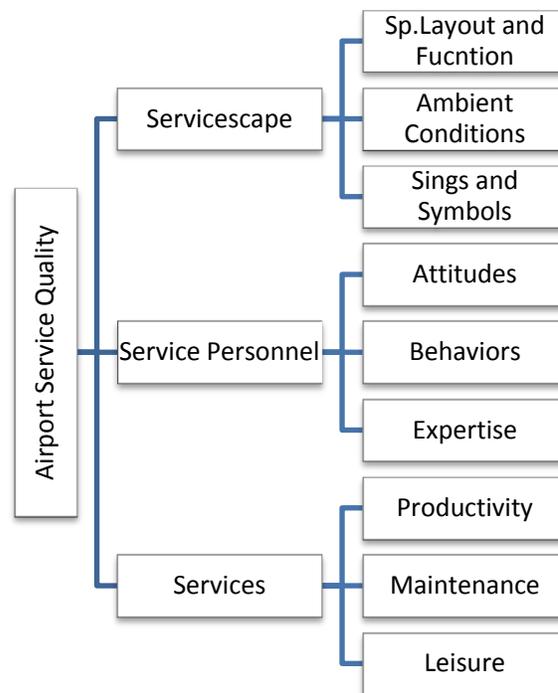


Figure 1. Preliminary conceptual model of airport service quality. Adapted from “Passengers’ Expectations of Airport Service Quality,” by D. Fodness and B. Murray, 2007, *Journal of Service Marketing*, 21(7), 492-506.

Adding to the five dimensions of service quality in retail stores, Bitner (1992) analyzed the impact of servicescape on the firm’s external marketing goals and inter-organizational goals. Typology of service organizations combined with the theoretical framework suggested that physical environment may assume a variety of strategic roles. First, servicescape acted as a package, similar to a product’s package, conveying the

potential usage and relative quality of the service. Second, servicescape could assume a facilitator role by either aiding or hindering the ability of customers and employees to carry out their respective activities. Finally, the physical environment could serve as a differentiator, signaling the intended market segment, positioning the organization, and conveying distinctiveness from competitors.

Understanding that marketing and service literature focused little attention on the airport industry, Fodness and Murray (2007) initiated an empirical investigation of the nature and role of expectations in this understudied category. First, they performed a qualitative study to gain insight into quality factors which air travelers expected from an airport service encounter. Next, they explored passenger experiences of airport services. Last, they identified the importance of specific airport service expectations. Analysis of responses in the qualitative study produced 65 airport service quality themes. Fodness and Murray then argued that that all 65 airport service quality themes could be categorized into three major dimensions: servicescape, service providers, and services

Dimension 1: Servicescape

Within the airport service quality framework, servicescape comprised of all the objective factors controllable by the service provider which facilitate customer actions during the service encounter (Fodness & Murray, 2007, p. 498). The servicescape construct includes three important elements: spatial layout and function, ambient conditions, and signs and symbols.

Spatial layout and functionality refers to the arrangement and relationship of the physical environment in facilitating service performance and accomplishing customer

goals. It is concerned primarily with the ergonomics of the physical layout of the airport and the ease of navigation through the airport.

The second element of the servicescape, ambient conditions, focuses on the traveler's physiological responses to the airport environment. Cleanliness of the airport and the amount of natural light in the interior space of the airport are some of the factors included in this sub-dimension.

Signs and symbols address both explicit signals (signage) and implicit signals (décor). Passengers in the qualitative studies stressed the importance of informational and directional signage. Statements such as, "An airport's external signs should clearly direct me to airport services such as parking, car rentals, terminals, etc.," were expressed in the qualitative study. In addition, symbols, specifically airport décor, were also mentioned in the qualitative study. Passengers in all studies stressed the importance of airport décor, a recurring theme in the authors' literature review of this element. Comments about airport symbols, as stated in the qualitative study, included, "An airport's décor should reflect the local culture of the city in which it is located."

Dimension 2: Service Providers

A second major influence on service quality was service providers. SERVQUAL is used to measure consumers' perception of service quality. The service providers dimension resembled the original Parasuraman et al. (1985) SERVQUAL construct. The service provider dimension created by Fodness and Murray (2007) contained elements of the original Parasuraman et al. (1988). Fodness and Murray (2007) organized consumer perceptions of service providers into three categories: attitudes, behaviors, and expertise of service providers.

The service providers dimension discussed the interactions between service providers and customers. Statements revealed in the initial qualitative study by Fodness and Murray (2007) showed similarities to the dimensions of the SERVQUAL model, such as tangibles of service (“The way an airport employee is dressed should easily identify their function”), responsiveness (“Employees at an airport should never be too busy to respond to my requests promptly”), assurance (“I expect employees at an airport to be courteous”), and empathy (“There should be employees at an airport available to offer me individualized attention”).

Dimension 3: Services

Services were defined as any activities or services that the airport offered in order to facilitate passengers’ choice of how to use their waiting time in the airport (Fodness & Murray, 2007, p. 496). Time is a scarce resource in an airport, because the airport experience demands a significant time commitment. The extent to which the airport facilitated or frustrated passengers’ use of time could have a significant effect on passengers’ perceptions of the overall quality of their service encounter. Darko (1999), in his research on business travelers, found that once a passenger had entered a terminal, their average wait time could exceed one hour. Other external factors such as security clogs, unexpected weather changes, or plane breakdowns could further prolong the passengers’ time in the airport. Acknowledging the importance of passengers’ time in the airport, more favorable perceptions of airport service quality might be associated with the availability and variety of activities with which the passenger could choose to spend their time while waiting. Time spent waiting in the airport was essential to business travelers, as Darko’s research indicated.

Research on what people did with their time suggested that time spent can be divided into three major activities: productive activities (job related work), maintenance activities (e.g. eating, resting, grooming), possession activities (e.g. shopping), and finally leisure activities (e.g. watching tv, reading, sports, exercising, watching movies). Qualitative study also found support for this division of time spent through comments made by the passengers.

Summary

Citing the lack of academic literature and marketing studies on airport services, Fodness and Murray (2007) proposed a complete service framework which encompassed all aspects of airport user experience. As shown in Figure 2, the framework divided airport service quality into three separate dimensions with a total of 9 major service attributes. The framework represented a groundbreaking study in the airport service sector, as it classified and analyzed airport service experience from the perspective of passengers and service marketing professionals. Previous studies of airport services were unable to correlate the quality measurements to an applicable performance measures and assess passengers' true perception of airport service values (Brink & Maddison, 1975; Correia & Wirashinghe, 2004; Heatington & Jones, 1975). On the contrary, Fodness and Murray's airport service quality framework allowed both service professionals and researchers to do both.

The method of choice used in evaluating the performance of these service attributes was also a critical issue that needed to be addressed. Within the service quality marketing literature, there were two dominant type of service quality measurements: SERVQUAL and SERVPERF. The SERVQUAL method appeared to be a valuable

service diagnostic tool for identifying service gaps within an organization. Yet, academics over the past ten years have criticized SERVQUAL for its questionable reliability and its poor predictive validity, particularly its empirical relationship with other conceptually related constructs (Espinoza, 1999; Gounaris, 2005; Rossiter, 2002; Zhou et al., 2002). SERVPERF or Service Performance Instrument, on the other hand, was found to show statistical superiority in its instrument reliability and predictive validity in measuring overall service quality and other related service measures (Cronin & Taylor, 2002; Yukesel & Rimmington, 1998). In addition to its reliability and predictive validity, Hudson et al. (2004), who criticized SERVPERF on its relative superiority over other service quality instruments, suggested that if time and cost were a constraint in implementing the service instrument, then SERVPERF should be the service instrument of choice for measuring overall service quality. Therefore, SERVPERF was the service quality instrument used in this study to measure passengers' perceptions of the quality of service attributes and dimensions found within the airport.

CHAPTER III

METHODOLOGY

The primary purpose of this research was to examine the strength of the relationship between performance in the three airport service quality dimensions (servicescape, services, and service personnel) and overall passengers' perception of service quality at four different airports. The airports are Las Vegas McCarran International, Los Angeles International, San Francisco International, and Seattle International. The purpose of this chapter is to present the methods used in the study to test the hypotheses listed below. An explanation of the sampling, questionnaire design, instrument development, and data analysis is given in this chapter.

Hypotheses

The hypotheses for the study are:

H1: There is a positive relationship between passengers' experience of airport access quality and their overall perception of airport service quality.

H2: There is a positive relationship between passengers' experience of airport service and facilities quality and their overall perception of airport service quality.

H3: There is a positive relationship between passengers' experience of airport restaurant/dining facilities quality and their overall perception of airport service quality.

H4: There is a positive relationship between passengers' experience of airport shopping quality and their overall perception of airport service quality.

H5: There is a positive relationship between passengers' experience of airport security and personnel quality and their overall perception of airport service quality.

H6: There is a positive relationship between passengers' experience of airport environment quality and their overall perception of airport service quality

H7: There is a positive relationship between passengers' experience of airport immigration and custom services quality and their overall perception of airport service quality.

Sample Size

Sample size was determined by following Churchill's method for sample size estimation when population variance is unknown. Since there was no previous study on airport service quality which measured the variance of passengers' response on a five-point scale survey (Churchill, 1987), a pilot study was performed to collect the sample variance on Friday, October 19th 2013. Statistical analysis of 35 completed responses from the pilot study showed that the variance for overall evaluation was .534. The computation for the sample size is the following:

Where,

n = Sample size

z = Z-value at 95% confidence level

H = Desired precision at .085

= Variance

Thus,

$$284 = \frac{1.96^2}{.085^2} \cdot .534^2$$

The formula produced a sample estimate (n) of 284. However, to allow for survey errors and incompletes, the sample was conservatively rounded up to be around 300. Therefore, it was determined that a sample of 300 respondents was the sample size required for this study.

Recruitment Process

Qualtrics was used for the recruiting of samples for this study. Qualtrics used SSI (Survey Sampling International) to provide panels for this study. The panel that SSI recruited was used solely for market or survey research. In North America, panels that joined the SSI Panels and did not respond to a survey invitation in two months were removed from the panel. Everyone who joined SSI panels consented to participate in online research. An amount of \$3,450 was paid to Qualtrics, Inc. for the administration of the online survey and recruitment of the sample panel. A total of 525 surveys were gathered with only 304 being usable. The remaining 221 surveys were deemed incomplete because the respondents either did not consent to participate in the survey or did not pass our survey criteria. The data was collected over six days, from Friday, October 19th 2013 to Wednesday, October 24th 2013. The first day of the survey launch was used as a pilot study day to ensure the efficacy and clarity of the questionnaire. A total of 35 surveys were collected during the pilot.

Survey Instrument

The survey questionnaire was divided into four parts. The first part was the pre-qualification section. The pre-qualifying questions verified whether the prospective participant was 18 years old or older, had flown four or more flights in the past twelve

months, and had flown to or from any of the following airports within the last six months: Las Vegas McCarran International Airport (LAS), Seattle International Airport (SEA), San Francisco International Airport (SFO), or Los Angeles International Airport (LAX).

If the participant was qualified for the survey, then he or she would be asked to evaluate his or her recent experience of their airport of choice. Then, participants were asked to evaluate their experience, based on their airport service attributes. These service attributes came from a collection of attributes used in previous academic or organization studies. After the completion of the individual evaluation of the airport service attributes, the participant was asked about their overall experience. The questions used to evaluate the participant's overall experience consisted of four closed-ended questions and one open-ended question. The four closed-ended questions asked the participant to compare their airport experience to their individual expectations, to evaluate their overall airport experience, to describe their impression of the airport service offerings, and to compare their airport of choice experience with other international airports that they consider excellent. The open-ended question asked the participant to provide a brief comment about their experience with the airport.

The last part of the questionnaire was the demographic questions. Participants were asked to provide the number of flights they took from their airport of choice; whether they were a leisure traveler, business traveler, or both; their gender, age, level of education, recent or current occupation, income, and state of residence.

Questionnaire Development

A self-administered survey (see Appendix A) was developed from the service quality framework suggested by Fodness and Murray (2007) and previous airport

services studies (Brink & Maddison, 1975; Correia & Wirasinghe, 2004; Heathington & Jones, 1975). The questionnaire was composed of 33 questions, some of which covered demographics. The first part of the survey consisted of pre-screening questions to ensure that the sample was the intended target population. The second part of the survey was designed to measure the airport experience by dividing the airport service attributes into eight functions: airport access, airport service /facilities, restaurant/eating facilities, shopping facilities, security checkpoint, immigration clearance, and airport environment. At the end of the second part, the respondents were asked to provide an overall evaluation of their airport experience. The last part of the survey asked about the respondents' demographic information, as well as their travel pattern and traveler category.

Overall Service Evaluation

For the purpose of this study, the overall service evaluation was measured only through its performance. Service performance, as suggested by Cronin and Taylor (1992), was adequate in explaining the variance in service quality. This study measured service performance by combining overall service experiences and impressions. In addition, the following two questions were asked: "Compared to your expectations, how would you rate your choice of airport?" and "Compared to other international airports, especially those you consider 'best,' how would you rate your choice of airport?" These questions originated from a 2009 McCarran International Airport Satisfaction Study. Respondents' evaluation of these factors should be based on their individual evaluation of the attributes found in seven airport functions.

Airport Access

In their study, Lee and Kim (2003) categorized access roads, taxis, and parking lots as airport access variables. In the framework of Fodness and Murray (2007), airport access includes elements of the airport servicescape. Dale and Fodness categorized attributes such as "walking distance to the gate," "clarity of airport terminal signs and symbols," and "convenience of flight information display" as part of the airport servicescape. Thus, these attributes were also included in the questionnaire and participants were asked to evaluate them.

Airport Services and Facilities

The service performance of airport services and facilities could be evaluated based upon the amount of time that passengers need to check-in, levels of internet accessibility, variety of concessions outlets, and waiting time at the baggage claim (Fodness & Murray, 2007).

Airport Restaurants / Dining Facilities & Airport Shopping Facilities

In measuring services in the airport, Fodness and Murray (2007) viewed airport services as the ability of the airport to facilitate passengers in the activities with which they desire to spend their time in the airport. Two of the primary activities that passengers might choose were maintenance activities such as eating or possession activities such as shopping. Questions regarding such attributes as "Availability of nationally recognized U.S. restaurant chains," "Variety of local restaurants," and "Quality of the food" was asked to measure the passengers' restaurant or dining experience. Other questions, such as "Variety of retail outlets" and "Value for price of goods or services at the retail outlets" were asked to measure passengers' possession activities.

Airport Service Personnel and Security

Passengers were asked about the courtesy and helpfulness of airport service personnel and security as well as their efficiency as part of their service attributes (Fodness & Murray, 2007).

Airport Environment

Airport environment dealt primarily with the overall passenger experience of the airport's servicescape. Instead of asking particular questions about each element of the servicescape components, questions regarding such factors as "Overall cleanliness of the airport," "Overall ambiance of the airport," and "Overall interior settings and layout of the airport" were asked to give an overall picture of passengers' feelings and service experience about the airport servicescape.

Airport Immigration and Customs

Measurement of airport service experience should account not only for domestic travel, but also international travel. An essential airport process for incoming international passengers is immigration and customs control. Immigration and customs control is the first service encounter that incoming international passengers experience upon their arrival at the airport. Thus, it was important to include evaluation of this service experience in this study.

Measurement

Respondents were first asked to select the airport which they had visited in the last 6 months. The airports available to select were limited to Las Vegas McCarran International Airport (LAS), San Francisco International Airport (SFO), Seattle-Tacoma International Airport (SEA), and Los Angeles International Airport (LAX). For measuring airport service, twenty-three attributes, divided among seven airport service

functions, were selected to assess the passengers' individual perceptions of airport services. The selected items were generated based on an extensive review of the airport service quality literature, airport satisfaction study reports, and surveys posted by major international airports in the United States.

The importance of attributes for each airport service was measured on a 5-point likert scale where 1 meant "Poor," 2 meant "Fair," 3 meant "Average," 4 meant "Good," and 5 meant "Excellent," as well as a "Don't Know" option to avoid response bias. Measurement of overall evaluation included four closed-ended questions and one open-ended question. Overall service experience was measured on a five-point scale with 1 being "Poor" and 5 being "Excellent." Overall impression, on the other hand, was measured from 1, "Very Negative" to 5, "Very Positive."

The study was also intended to rate respondents' overall evaluation of their airport experience in relation to their expectations. Two closed-ended questions were asked: "Compared to your expectations, how would you rate [The Airport Selected]?" and "Compared to other international airports, especially those you consider 'Best,' how would you rate /evaluate [The Airport Selected]?" The first question was measured on a five-point scale, with 1 being "Much Worse than Expected," 3 being "Same as Expected," and 5 being "Much Better than Expected," as well as a "Don't Know" option. The latter question was measured from 1 as equal to "Much Worse" to 5 as equal to "Much Better." A "Don't Know" option was also provided for this question.

Validity and Reliability

There were two important questions which needed to be answered for the study to proceed. The first question was whether the measurement used in the study yielded consistent results, and the second question was whether the measuring instrument measured what it was intended to measure. These questions related to the problem of reliability and validity in a research study.

Reliability is defined as the tendency toward consistency found in repeated measurements of the same phenomenon (Carmines & Zeller, 1983). A construct is considered to be reliable if it shows similar results repeatedly with comparable or the same measures (Churchill, 1987). Assessment of a construct's reliability could be made through internal consistency method or Cronbach's Alpha. A construct is assumed to be reliable if its coefficient alpha (α) has a value of .80 or above. Such criteria ensured sufficient average inter-item correlation between the scales. As a result, it ensures that the construct remains internally consistent throughout the survey (Carmines & Zeller, 1983).

Validity is the ability of a scale or measuring instrument to measure what it is intended to measure (Zikmund, 1997). One of the most common methods for measuring validity is through face or content validity. Content validity is a professional agreement that a scale logically appears to be accurately reflecting what was intended to be measured (Zikmund, 1997). Measurements used in this study were derived from Fodness and Murray's (2007) study on "Passenger's Expectation of Airport Service Quality." In constructing their dimensions of airport service quality, Fodness and Murray (2007) initiated a qualitative study through in-depth interviews and focus groups to generate service themes from passengers. Then, they combined their findings from the pilot study

with the empirical findings found by researchers in the marketing field in the past. Thus, their measurements demonstrated face validity. The question - “How do you measure service quality in your airport terminal?” was also asked at the LinkedIn Airport Industry Professional Group to confirm the validity of variables used in the survey. Many airport professionals ranging from manager to executive confirmed that they used similar variables in measuring overall passenger experience at the airport.

Pilot Study

A pilot study of the survey was conducted for two purposes. The first was to ensure the efficacy and clarity of the survey questionnaires. The second was to analyze the reliability of the measurement scale. The pilot study was launched on Friday, October 19th 2013 as a soft launch for the actual survey administration on the following day. Initially, the pilot study was expected to collect fifteen responses. However, on the day of the pilot study, thirty-five completed responses were collected. After the responses were collected, the data was then statistically analyzed for reliability. Revisions were made on some scales at some questions, which were deemed inappropriate.

Data Analysis

IBM SPSS Statistic 19 was used to perform data analysis. Appropriate descriptive analyses were performed on all the factors of airport service quality dimensions and passengers’ overall evaluation, and sample demographic information as well. Analysis of the dimensions’ sample mean (\bar{X}) and standard deviation (σ) were used to describe differences among each factor of airport service quality’s dimensions at different airports. In addition to mean and standard deviation analysis, content analysis was utilized to rank

important airport service quality concerns among airport passengers based on their feedback about their overall airport service experience.

Without evidence of reliability, interpretation of results would be doubtful (Churchill, 1987). Therefore, reliability tests were conducted to assess the quality of the data and Cronbach's alpha was computed to measure internal consistency and the consistency of the response to all the items in the survey.

In addition to predicting passengers' overall evaluation of the overall airport service quality, multiple linear regression was used to examine the nature of the relationship between an independent variable and a dependent variable, to quantify the effect of changes that the independent variables have on the dependent variable, and to identify unusual observations. For the specific purpose of this study, the main usage of Multiple Linear Regression technique was to test the study's multiple hypotheses on the nature of the relationship between multiple airport service quality dimensions to passengers' overall evaluation of service quality. In this study, seven independent variables (Access, Services and Facilities, Dining/ Restaurant, Shopping, Service Personnel and Security, Immigration and Customs Services, and Environment) and one dependent variable (Overall evaluation) were used to examine the impact of passengers' quality evaluation of multiple airport services on an airport's overall service quality. Therefore, multiple linear regression technique was used as a statistical technique.

CHAPTER IV

RESULTS AND DISCUSSION

This chapter presents the findings of the study. Comparisons and supports are also provided through major research studies discussed in the literature review. First, a descriptive analysis and demographic profile of respondents is provided. Second, the results of the reliability tests are presented to check overall data quality. Third, assumptions in multiple regression are analyzed and evaluated. Then, an analysis of multiple regression is reported and finally, a summary of major findings from the study is discussed.

Demographic Profile of Respondents

The demographic data collected from the survey is presented in Table 1. There was an equal proportion of gender among our survey respondents. Males represented 49.7%, while females represented 50.3% of survey respondents. Approximately 75% of the survey respondents belong to the 25-56 age range. The distribution of respondents in terms of age followed a similar demographic distribution in the *McCarran International Airport 2nd Qtr 2013 Satisfaction* study where the majority of the respondents (62%) belonged to that age range. That there was a high proportion of respondents belonging to the 25-56 age range could be explained by the fact that most respondents belonging to that particular age group held jobs which demanded a considerable amount of travel from their workplace. Approximately 58% of our respondents reported having completed a 4-year college degree or higher (Master's Degree, Doctoral Degree, Professional Degree

[JD, MD]). About 43% of the respondents were either professionals or working at the middle management level. 10.9% reported being self-employed or business owners. Most respondents (47.1%) reported their annual income to be above \$75,000, while the remaining 43.8% of respondents reported their annual salary to be between \$25,001 and \$75,000. White/Caucasian was the dominant ethnicity among the respondents with 72% identified as such, followed by Asian (9.2%), African-American (8.9%), and Hispanic (7.6%). The majority of survey respondents resided in California (26%), followed by New York (6.6%), and Arizona (4.6%).

Table 2*Demographic Profile of Survey Respondents*

	Number	%
Gender		
Male	151.0	49.7
Female	153.0	50.3
Age		
18-24	22.0	07.2
25-34	64.0	21.1
35-45	83.0	27.3
46-56	73.0	24.0
57-67	43.0	14.1
68 or older	19.0	06.3
Ethnicity		
White/Caucasian	219.0	72.0
African American	27.0	08.9
Hispanic	23.0	07.6
Asian	28.0	09.2
Pacific Islander	02.0	0.70
Other	03.0	1.00
I choose not to answer	02.0	0.70
Education Level		
Less than High School	01.0	0.30
High School/GED	34.0	11.2
Some College	63.0	20.7
2-year College Degree	31.0	10.2
4-year College Degree	100.0	32.9
Master's Degree	62.0	20.4
Doctoral Degree	01.0	00.3
Professional Degree (JD, MD)	12.0	03.9

	Number	%
Occupation		
Homemaker	22.0	07.2
Professional	81.0	26.6
Middle Management	46.0	15.1
Sales/ Marketing	11.0	03.6
Clerical Services	17.0	05.6
Skilled/ Technical	21.0	06.9
Self Employed/ Business Owner	33.0	10.9
Student	18.0	05.9
Retired	30.0	09.9
Unemployed	12.0	03.9
Other (please specify)	13.0	04.3
 Annual Salary (Including bonuses and commissions)		
\$0 - \$25,000	28.0	09.2
\$25,001 - \$50,000	62.0	20.4
\$50,001 - \$75,000	71.0	23.4
\$75,001 - \$100,000	59.0	19.4
\$100,001 - \$125,000	36.0	11.8
\$125,001 - \$150,000	19.0	06.3
\$150,001 - \$175,000	13.0	04.3
\$175,001 - \$200,000	07.0	02.3
\$200,001 +	09.0	03.0

Note. N = 304

Number of Trips and Category of Travelers

Table 3 presents the category of travelers who completed the survey and Table 4 presents the number of trips the respondent has taken from their airport of choice. Criteria used for this study limited the profile of respondents to frequent flyer members who have taken at least four or more round trips in the past 12 months. Thus, the effect of the participants' criteria is reflected in Table 3 on the distribution of category of travelers.

Table 3

Category of Travelers

	Las Vegas McCarran International Airport	Los Angeles LAX	Seattle- Tacoma International Airport	San Francisco International Airport
Business	60	61	26	25
Leisure	3	7	3	3
Both	40	43	13	18
Total	103	111	42*	46

Note. Missing n =1

A possible reason for these airports having a higher proportion of travelers who have flown three or more trips could be that these airports are major domestic and international airline hubs in the West Coast region. For example, Alaska Airlines' major hub is in Seattle-Tacoma International Airport (AP, 2005). Another possible reason for this finding is that these airports are situated in top urban commerce cities in the United States.

Table 4

Number of Trips which respondents have taken from their selected airports

No. of Trips	All Sample	Las Vegas McCarran International Airport	Los Angeles International Airport	Seattle- Tacoma International Airport	San Francisco International Airport
1-2	125 (41.1%)	53 (51.5%)	38 (34.2%)	18 (41.9%)	16 (34.8 %)
3-4	115 (37.8%)	29 (28.2%)	50 (45.0%)	20 (46.5%)	16 (34.8%)
5-6	34 (11.2%)	10 (9.7%)	12 (10.8%)	4 (9.3%)	7 (15.2%)
7-8	21 (6.9%)	8 (7.8%)	9 (8.1 %)	0 (0%)	4 (8.7%)
9-10	5 (1.6%)	1 (1.0%)	1 (.9%)	1 (2.3 %)	2 (4.3%)
11 or more	4 (1.3%)	2 (1.9%)	1 (.9%)	0 (0%)	1 (2.2%)
Total	304 (100%)	103 (100%)	111 (100%)	43 (100%)	46 (100%)

Las Vegas McCarran International Airport had the largest number of respondents who had taken only one or two trips from the airport with 51.5%. Respondents who selected Los Angeles LAX for their airport of choice had the highest number of travelers (65.8%) who had taken 3 or more trips from the airport. It was followed by San Francisco International with 65.2% and Seattle-Tacoma International with 58.1%.

Descriptive Statistics

Table 5 presents the mean and standard deviation for each service dimension and overall evaluation for each airport (Las Vegas McCarran International (LAS), Los Angeles International (LOS), Seattle-Tacoma International (SEA), San Francisco International (SFO). The variables were measured from 1 = “Poor,” 2 = “Fair,” 3 = “Average,” 4 = “Good,” 5 = “Excellent,” and 0 = “Did Not Use.”

Table 5

*Mean, Median, and Standard Deviation for Airport Services and Service Performance**Measures*

<i>Variables</i>	<i>LAS</i> (<i>n</i> = 103)		<i>LOS</i> (<i>n</i> = 111)		<i>SEA</i> (<i>n</i> = 43)		<i>SFO</i> (<i>n</i> = 46)	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Overall Access	4.14	0.65	3.71	0.92	4.01	0.74	3.88	0.73
Overall Services and Facilities	4.04	0.72	3.50	0.97	3.85	0.68	3.76	0.76
Overall restaurant/dining facilities	4.02	0.72	3.73	1.03	4.05	0.83	4.03	0.65
Overall Shopping	3.79	0.88	3.48	1.14	3.79	0.83	3.83	0.70
Overall Personnel and Security	4.00	0.80	3.44	1.11	4.00	0.79	3.58	1.09
Overall Environment	4.19	0.72	3.65	1.12	4.15	0.74	4.14	0.69
Overall Immigration	4.02	0.95	3.37	1.16	4.23	0.73	4.14	0.85
Overall Evaluation	3.92	0.77	3.41	0.91	3.91	0.57	3.83	0.77

Note. M = Mean; Mdn = Median; SD = Standard Deviation; Scale for Variables (0 = Did Not Use, 1 = Poor, 2 = Fair, 3 = Average, 4 = Good, 5 = Excellent).

In terms of airport access, McCarran International received the highest rating from survey participants with a sample mean of 4.14 and a standard deviation of 0.65. Los Angeles International received the lowest rating with a sample mean of 3.71 and a standard deviation of 0.92. McCarran also had the highest quality rating in terms of airport services. Airport services and facilities encompass service factors such as

processing time at check-in, internet/wi-fi accessibility, comfort of seating in the gate waiting area, variety of concession outlets, and baggage claim. The lowest rating was given to Los Angeles International with a sample mean of 3.50.

Seattle –Tacoma International received the highest mark for their airport dining services with a sample mean of 4.05 and a standard deviation of 0.83. This was followed by San Francisco International with 4.03 and 0.65. Despite coming in second place on dining, San Francisco International received the highest rating on shopping services with a sample mean of 3.83 and a standard deviation of 0.70.

Both Las Vegas McCarran International and Seattle-Tacoma International received an equally high evaluation for their airport service personnel and security, with a sample mean of 4.00 for this service dimension in both airports. With regard to the quality of airport immigration and customs services, Seattle-Tacoma International received the highest overall score from survey participants with a sample mean of 4.23 and standard deviation of 0.73. It was followed by San Francisco, then McCarran International, with Los Angeles International in last place.

Overall airport environment is a composite average of overall cleanliness of the airport, ambiance, interior settings, and layout. In this service category, McCarran International received the highest mark with a sample mean of 4.02 and a standard deviation of 0.95. The lowest overall rating for airport environment was given to Los Angeles International, with 3.65 and 1.12.

Table 3 shows that McCarran International has the highest rating in terms of passengers' overall evaluation of the airport, with a sample mean of 3.92 and a standard deviation of 0.77. At the other end of the scale, Los Angeles International received the

lowest mark for overall airport services with a sample mean of 3.41 and standard deviation of 0.91. It should be further noted that Los Angeles International received the lowest overall mark for all seven airport service dimensions of all four airports selected in this study.

Open-ended Response Analysis

Table 6 presents a ranking of the top seven service quality concerns in the open-ended question. Respondents were asked the following question: **“In the space provided below, please provide some feedback regarding your experience with (*Selected Airport*). You can share anything positive or negative, as they will help the airport administration to serve you better.”**

Table 6
Qualitative Analysis of Open-Ended Question

Top Open-Ended Responses
1. Service Personnel and Security (20)
2. Access (19)
3. Services and Facilities (15)
4. Environment (13)
5. Dining (9)
6. Shopping (3)
7. Immigration and Customs Services (2)

There were 81 responses, which were analyzed and categorized based on the nature of the feedback. The categories followed the seven airport service dimensions, which were access, services and facilities, dining/restaurant, shopping, service personnel

and security, environment, and immigration. Each response was categorized based on its similarity to service elements included in the survey. The categorization of the responses did not take into account whether the feedback was negative or positive. Attention was paid to the mention made of the service element in the response. For example, a feedback response could be either a positive open-ended response such as, “San Francisco International Airport has the most courteous staff out of any airport in the U.S. that I have ever used” or a negative open-ended response such as, “I generally expect security lines at McCarran to be long and plan accordingly. However, when security lines are especially long, it is frustrating to see that many of the lines are closed.” In either case, both responses fall under the category of service personnel and security, because both discussed the service element found in the helpfulness of airport service personnel or the waiting time at the security line.

Analysis of the responses led to a ranking of the top seven airport service problems. At the top is service personnel and security with twenty responses. Second is airport access with 19 responses. Third is service and facilities with 15 responses. Fourth is environment with 13 responses, fifth is dining with 9 responses, sixth is shopping with three responses, and the last is immigration and customs services with two responses.

Much of the feedback categorized under service personnel and security focused on the long lines and waiting periods at airport security checkpoints, the rudeness of the TSA security personnel, and a few times on the helpfulness of the airport staff.

Feedback regarding airport access includes clarity of signage, ease of navigation within the airport terminal, ground transportation to and from the airport, level of crowdedness in the airport, and parking availability. Most access mentions focused on

clarity of signage. Mentions of services and facilities revolve around processing time at check-in, the wait time for baggage claim, Internet/Wi-fi accessibility, and handicap accessibility or wheelchair services. Feedback regarding the airport environment primarily focuses on the interior design and setting of the airport terminal and the overall atmosphere of the airport itself. Service discussion of airport dining or restaurant facilities emphasizes the importance of having to-go food products in the airport terminal, the availability of food suitable for dietary restrictions such as a vegetarian diet, pricing, and the ingredients used in the food. With regard to airport shopping, respondents are primarily concerned about the lack of availability and variety of retail outlets in the airport. The last category is immigration and customs services. Criticism regarding airport immigration and customs services is directed toward the rudeness and insincerity of the airport's immigration and customs staffs in handling international passengers coming to the United States.

Reliability Test

A reliability test through coefficient alpha was used to measure the internal consistency of the independent variables in the survey. A coefficient alpha tests the internal consistency of the items in relation to a single trait within the instrument (Nunnally, 1978). As a rule, coefficient alpha above 0.80 is considered good. Thus, the data is reliable. Airport access registered four items yielding a coefficient of 0.839, while airport services and facilities with five items delivered an alpha of 0.865. Airport dining and shopping had a respective coefficient alpha of 0.889 and 0.873, airport personnel and security and airport environment had respective scores of 0.821 and 0.912 coefficient alpha. For overall experience and impression, both have a combined coefficient of 0.876.

The coefficient alpha of the overall evaluations of airport access, service and facilities, restaurant, shopping, personnel and security, environment, and immigration was 0.938. The results indicated that the measures were highly reliable for measuring each construct.

Correlation

The correlation between airport access, service and facilities, restaurant, shopping, personnel and security, environment, and immigration was assessed for the entire sample.

Correlations ranging from a minimum of 0.489 to a maximum of 0.762 were revealed in the analysis. All the variables were significantly correlated, as indicated by p-values less than 0.001.

Passengers' overall evaluation of the airport was highly correlated with airport physical environment ($r = 0.693$) followed by airport immigration services ($r = 0.670$) and airport access ($r = 0.660$). Another high correlation existed between airport immigration services and airport access ($r = 0.762$). These findings indicated that a high increase in airport passengers' overall experience was associated with positive customer perception of airport access and immigration services.

Multiple Linear Regression

Multiple linear regression technique was employed to provide information about the relative contributions of the significant variables in predicting the values of the dependent variable. A significance level of $p=0.05$ was selected as sufficient for this analysis. Before proceeding with the model, the data must meet the following assumptions: independence, linearity, normality of the error term distribution, and constant variance of the error term

Independence

Independence meant that there was no relationship between the two variables in the dataset. Even if such a relationship might occur, the relationship must have arisen by chance and not as the effect of another independent variable (Norusis, 2012). Since all the data collected was primary data, all data observed were assumed to be independent of each other.

Linearity

Linearity means that the relationship between the dependent and independent variables is linear. To check for this assumption, studentized residuals were plotted against the predicted values. Figure 2 shows the residuals of all seven independent variables and a dependent variable. Non-linear patterns were not detected in the data to individual variables or to the relationship as a whole. Therefore, it could be concluded that the linearity assumption was met for the regression in this study.

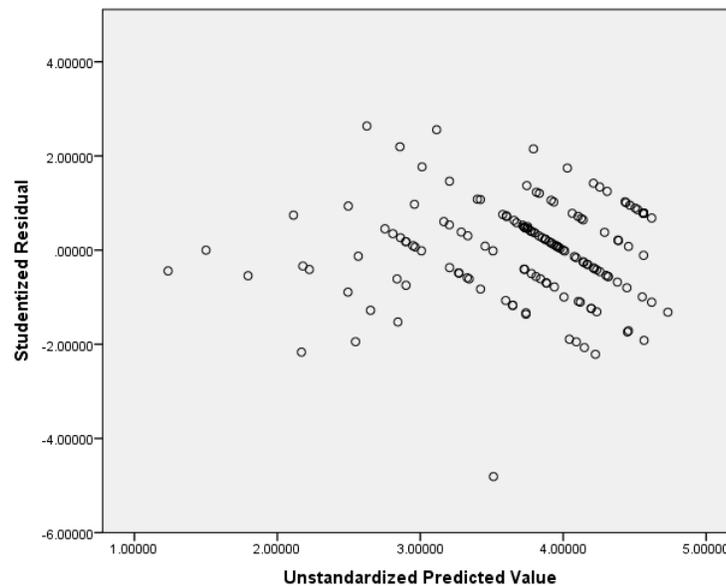


Figure 2. Residual plots of overall regression

Normality of the Error Term Distribution

Normality assumption asserts that the distribution of the dependent variable for each value of independent variable must correspond to a normal distribution (Norusis, 2012). To examine the normality of the data, a P-P plot of standardized residuals was used. In examining the normality assumption through the P-P plot, residuals from a normal population should fall close to a straight line in order to meet the normality assumption. The P-P plot, as showing Figure 3, showed that the residuals data points fell close to the straight line. Therefore, the normality assumption was met for this regression model.

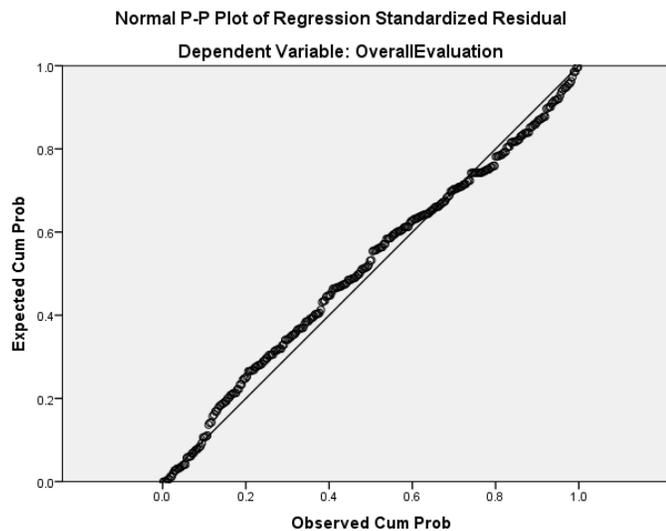


Figure 3. Normal P-P Plot for Overall Regression

Constant Variance of the Error Terms

Homoscedasticity is the assumption that a dependent variable exhibits equal levels of variance across the range of independent variables. To check for constant

variance across the dependent variables for all values of independent variables, a scatter plot of all residuals was plotted against the predicted values (Norusis, 2012).

Homoscedasticity is met when the residuals are randomly scattered within a horizontal band. Figure 4 presents the scatter plot of studentized residuals of all independent variables against unstandardized predicted value.

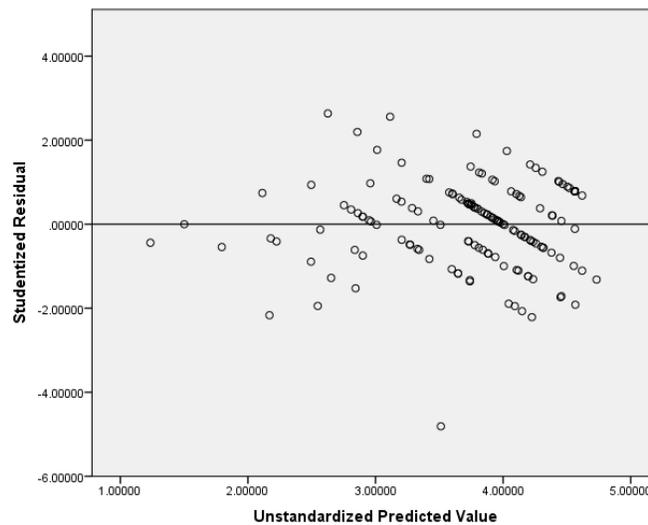


Figure 4. Studentized Residuals versus predicted values.

As shown in Figure 4, the residuals are scattered randomly around the horizontal axis. It appeared that some clusters were formed in the 3.00 – 4.00 predicted values. One possible explanation was that many of respondents gave a high rating to most airport service dimensions in the survey and the scale of predicted value is limited from 1.00 to 5.00. Since there was no presence of unequal variances (i.e., heteroscedasticity), it could be concluded that the model fulfilled the assumptions of constant variance of the random errors.

Hypotheses Testing

Multiple linear regression techniques were employed to provide information on the relative contributions of the independent variables (access, services and facilities, restaurant/dining , shopping, service personnel and security, environment, and immigration services) in predicting the values of the dependent variable (overall evaluation). A significance level of $p = 0.05$ was selected as sufficient for this analysis.

Table 7

Regression Analysis of Airport Services and Overall Evaluation

Variables	B	SE(B)	β	t	Sig.
Access	.199	.068	.192	2.913	.004*
Services and Facilities	.025	.076	.025	.324	.746
Restaurant/dining facilities	.263	.057	.264	4.622	.000*
Shopping	-.094	.049	-.102	-	.056
				1.922	
Personnel and Security	.098	.053	.116	1.853	.065
Environment	.244	.059	.269	4.099	.000*
Immigration	.138	.052	.128	2.668	.008*

Note. B = Unstandardized regression coefficients; SE (B) = Standard error of unstandardized coefficient; β =Standardized Coefficients; t = the sample value of the t-test statistic; p = probability of making a Type I error. * $p < 0.05$; All independent variables VIF (Variance Inflation Factor) is less than five; F-Statistic = 60.190 with $p < .005$ and $df = 7$.

As seen in Table 7, the proposed regression model was significant, with an F-statistic of 60.190 on 7 degrees of freedom ($p < 0.001$). VIF (Variance Inflation Factor) of the regression model was found to be very low (less than 5). Thus, it implies that no multicollinearity exists among the observed independent variables. The predictive ability of the model was also adequate, with a coefficient of variation () value of 0.587. A coefficient variation value of 0.587 indicates that 58.7% of the variation in passengers' overall airport service evaluation could be explained with the seven airport service quality dimensions proposed in the study.

The beta coefficients measure the impact on the value that an independent variable has on a dependent variable when all independent variables are expressed in standardized form (Norusis, 2012). In Table 5, environment has the largest value of β of 0.269, followed by restaurant dining/facilities with 0.264 beta coefficient, then access with 0.192, and immigration with 0.128. Therefore, among seven airport service dimensions used in the study, service quality with regard to airport environment is the most influential on overall evaluation of airport service quality. One possible explanation for the high influence of airport environment on overall service quality evaluation may be the familiarity that frequent flyers have with airport service offerings. This familiarity might lead them to make a biased judgment against most airport service offerings where the distinguishing factor separating one airport from another could only be found in the quality of its environment (cleanliness, ambiance, interior settings, and layout).

The t-statistic and p-value indicated the significance of relationships between each airport service quality dimension and overall airport service quality evaluation. The relationship between access and overall evaluation appeared to be significant at high

significant level ($p < 0.05$). Therefore, H₁ (there is a positive relationship between passengers' experience of the airport access quality and their overall perception of airport service quality) is supported. The relationship between airport restaurant services was also found to be positive at a high significant level ($p < 0.005$). Thus, H₃ (there is a positive relationship between passengers' experience of the airport restaurant/dining facilities quality and their overall perception of airport service quality) was also supported. Airport environment, which has the biggest influence on passengers' overall evaluation, was shown to have a positive relationship with overall evaluation at a high significant level ($p < 0.005$). H₆ (there is a positive relationship between passengers' experience of the airport environment quality and their overall perception of airport service quality) is supported. Finally, a significant relationship also appeared between airport immigration and overall evaluation with $p < 0.005$. H₇ (there is a positive relationship between passengers' experience of the airport immigration and custom services quality and their overall perception of airport service quality) is supported.

Out of seven airport service quality constructs used in the study, only four were found to have significant relationships with overall evaluation. Three airport service quality dimensions – services and facilities, shopping, service personnel and security – did not have a significant impact on overall evaluation ($p\text{-value} > 0.05$). Therefore, H₂, H₄, and H₅ were not supported by the regression analysis.

Summary of Hypothesis Testing

Table 8 presents summary of the hypothesis testing. Seven airport service quality dimensions with twenty-five service attributes were analyzed through multiple linear regression. Of the seven, only four of the dimensions (airport access, environment,

restaurant, and immigration) were found to have a significant impact on passengers' overall perception of airport service quality. The remaining three – services and facilities, service personnel and security, and shopping – appeared not to have any significance.

Table 8

Summary of Hypothesis Testing

- H1: There is a positive relationship between passengers' experience of the airport access quality and overall perception of airport service quality. **Hypothesis is supported.**
- H2: There is a positive relationship between passengers' experience of the airport service and facilities quality and overall perception of airport service quality. *Hypothesis is not supported.*
- H3: There is a positive relationship between passengers' experience of the airport restaurant/dining facilities quality and overall perception of airport service quality. **Hypothesis is supported.**
- H4: There is a positive relationship between airport shopping quality and overall perception of airport service quality. *Hypothesis is not supported*
- H5: There is a positive relationship between passengers' experience of the airport security and personnel quality and overall perception of airport service quality. *Hypothesis is not supported.*
- H6: There is a positive relationship between passengers' experience of the airport environment quality and overall perception of airport service quality. **Hypothesis is supported.**
- H7: There is a positive relationship between passengers' experience of the airport immigration and custom services quality and their overall perception of airport service quality. **Results: Hypothesis is supported.**
-

Airport environment was found to have the biggest effect in influence in overall perception of service quality with a beta coefficient (β) of 0.269 at a very high significant level of ($p < 0.001$). This is followed closely by airport restaurant/dining with a beta

coefficient (β) of 0.264. This implies those passengers who have positive perceptions of overall airport environment and dining services would present a more positive evaluation of the overall service quality of the airport. The regression also suggested that passenger' perceptions of service quality in access and immigration services would have a significant impact on their overall evaluation. Access has a beta coefficient of 0.192, while immigration and customs services have a beta coefficient of 0.128. Either variable is highly significant with $p < 0.005$. The multiple linear regression analysis supported four hypotheses (H_1, H_3, H_6, H_7), while it did not support the remaining three (H_2, H_4, H_5).

CHAPTER V

CONCLUSION

Chapter IV discussed the findings of the hypothesis testing. It provided demographic information about the respondents who took the survey and showed the correlation between the dependent variables tested (*Airport Access, Services and Facilities, Restaurant/ Dining, Shopping, Service Personnel and Security, Environment, and Immigration Services*) and the dependent variable (*Overall Passengers Evaluation*). This chapter begins by summarizing the results the findings of the study. The implications of the research findings and potential contributions are discussed. Limitations and recommendations for future study are also presented.

The purpose of the study was to investigate the impact of different airport service components on overall passenger evaluations of the airport. Seven independent variables, comprised of seven airport service dimensions (access, services and facilities, restaurant /dining, shopping, service personnel and security, environment, and immigration and services), were selected for this study. *Overall Evaluation* was used as a dependent variable, indicating the level of passengers' experiences and impressions of overall airport service quality.

Analysis of respondents' demographic information revealed that 75% of respondents belonged to the 25 – 56 age group. Of these respondents, 58% of them had earned a four year college degree or higher (58%), and many held jobs in professional occupation or managerial positions (43%). Caucasian/White dominated the ethnic

makeup of the survey respondents with 72% classifying themselves as such. Asian, African-American, and Hispanic respondents are equally represented in the survey, with each of these groups representing approximately 10% of all survey respondents. Most respondents resided in California (26%). In regards to their travel characteristic, most travelers surveyed in this study had flown three or more trips from their selected airport. Ten percent of the sample population had flown seven or more trips. Approximately sixty percent of travelers in the survey classified themselves as business travelers, while the remaining considered themselves either only leisure travelers or both (business and leisure travelers). Of the four airports available in this survey, Los Angeles International Airport had the highest number of respondents (n = 111), followed by Las Vegas McCarran International Airport (n = 103), and San Francisco International Airport (n = 46), and finally Seattle-Tacoma International Airport (n = 43).

Content analysis on responses to the open-ended question about the passengers' overall airport service experience resulted in ranking the top seven airport service quality concerns: 1. Service Personnel and Security, 2. Access, 3. Services and Facilities, 4. Environment, 5. Dining, 6. Shopping, 7. Immigration and Customs Services.

Multiple linear regression was employed to measure the impact of the seven airport service dimensions on passengers' overall evaluation of airport service quality. Regression analysis of the independent and dependent variables revealed the overall proposed regression model was significant. Further regression testing on all airport service dimension constructs found access, dining, environment, and immigration to have a significant and positive impact on overall evaluation of airport service quality by the passengers. However, no significant relationship was found or suggested between other

independent variables (airport services and facilities, shopping, and service personnel and security) and overall perception of airport service quality. Therefore, these findings supported four (H₁, H₃, H₆, H₇) out of seven hypotheses stated in this study.

Theoretical Implications

There has been a lack of literature and research on the analysis of airport services. While there have been many studies conducted on the internal service performance of the airport, passenger perceptions about airport services have rarely been studied by air transportation academics and professionals (Correia & Wirasinghe, 2004).

In 2007, Fodness and Murray proposed an operational framework of airport service quality for marketing academics and professionals. Their proposed framework and study argued that airport service quality derived from three important service factors: Servicescape, Service personnel, and Services. Regarding servicescape, Fodness and Murray (2007) suggested that the service location, layout and function were important attributes that shaped passengers overall perception of the quality of the airport's environment. The service personnel dimension focused on the attitude, behaviors, and expertise of service personnel as significant determinants of airport service quality. The airport services dimension categorized airport services based on their ability to meet the passengers' needs for productivity, maintenance, and leisure. The study followed a similar framework proposed by Fodness and Murray (2007) as well as other service academics that have conducted service studies within an airport environment setting (Caves & Pickard, 2001; Heatington & Jones, 1975; and Seneviratne & Mattle, 1991;). The results were seven airport service dimensions (Access, Services & Facilities, Dining, Shopping, Service Personnel and Security, Immigration, and Environment). All of which

should have covered all the main aspects of service a passenger might encounter in the airport. Those dimensions are access, services and facilities, dining, shopping, service personnel and security, environment, and immigration services.

The findings of the study accepted and rejected some of the claims made by Fodness and Murray (2007), Seneviratne and Mattle (1991), Heatington and Jones (1975), Lee and Kim (2003), Bitner (1992). The results of this study suggest that some airport service areas are more significant than others in determining overall airport service quality. Regression analysis of all seven independent variables and the dependent variable revealed that only four of the independent variables were significant and had a positive relationship with the passengers perception of overall service quality. Those four variables were access, environment, dining, and immigration services. These findings accepted some of the airport service quality factors proposed by Fodness and Murray (2007) and rejected others. The findings rejected their claim that helpfulness and courtesy of airport service personnel is an important service determinant in passengers' perceptions of overall airport service quality. On the other hand, the report supported the research claim that airport servicescape was an important airport service quality determinant, along with passenger's need for maintenance (i.e. eating).

Some of the findings from air transportation academics about passengers' perception of airport services were supported in this study. The study supported the finding that cleanliness, signs, flight information displays (Lee & Kim, 2003; Seneviratne & Martel, 1991), physical comfort, and convenience (Brink & Maddison, 1975; Heatington and Jones, 1975) were significant determinants of passengers' airport service experience. However, it rejected the finding that waiting times (Caves & Pickard, 2001),

availability of seats (Seneviratne & Martel, 1991), or processing time at check-in (Brink & Maddison, 1975) were significant determinants of airport service experience.

The results of this study concurred with Bitner's argument in favor of the importance of servicescape to a customer's experience. Bitner (1992) suggested that servicescape acts as a package which conveys the potential usage and relative quality of the overall service. Second, he suggested that servicescape can assume a facilitator role by either aiding or hindering the ability of customers and employees to carry out their respective activities. Finally, the physical environment can serve as a differentiator in signaling the intended market segment, positioning the organization, and conveying distinctiveness from competitors. These claims were found to be true according to this study, as passengers viewed the environment as the most influential and distinctive factor affecting their perception of the overall airport service quality.

Findings of this study have a significant impact in terms of how airport authorities should interpret its framework of airport service quality. It is possible that such theories as the one proposed by Fodness and Murray (2007) may no longer be fully relevant. One possible explanation for this is that human behaviors and responses to the surrounding stimulus are always changing, thus creating new expectations and judgment biases for what passengers consider to be important and not important, good or bad.

Practical Implications

This study determined that airport access, service and facilities, dining, shopping, service personnel and security, environment, and immigration were important service dimensions that influenced passengers' overall perception of service quality. However, upon further analysis of the relationship of each dimension to the overall passenger

evaluation, it was revealed that only four dimensions were significant in influencing passengers' perceptions of airport service quality. Those dimensions were environment, restaurant/dining facilities, access, and immigration services.

With regard to airport environment, regression analysis showed that quality of service factors relating to this dimension produce a very influential overall perception of airport service quality. Bitner (1992) suggests that airport environment acts as a service facilitator and differentiator to a customer's experience. Airport services tend to be highly self-operational. This means that passengers have to operate the service available by themselves in order to gain satisfactory reward from those services. Thus, airport environments play a vital role in the passengers' mind by conveying the potential usage and relative quality of the airport's overall services. Airport administrators and managers must pay close attention to maintaining an excellent quality of service in the airport through overall cleanliness, ambiance, interior setting, and layout. Especially in the planning phase of airport expansion or renovation, airport administrators must focus their efforts on ensuring that their airport's ambiance, interior setting, and layout meet the expectations of their passengers, since these features are both costly to implement and very influential in shaping passengers overall judgment of airport service quality. It can be very difficult to test the effectiveness of an airport's ambiance or interior settings before the environment is built. One alternative is to draw comparisons from other similar airports, which have received high marks for the quality of their environment from their passengers who share similar demographic profiles. By comparing with similar airports, airport administrators can try to understand the different expectations that passengers might have about their ideal airport environment.

Airport dining was also found to be very significant in influencing passengers' perception of airport service quality. Recently, increasing costs of in-flight food service and various financial pressures to the airline companies have prompted major domestic U.S. airlines to remove meal services from their flights. Therefore, an airport's ability to meet the passenger's need for eating is now perceived by passengers as a distinctive factor which differentiates one airport from another. For the passengers who were selected for this study, the availability of nationally recognized U.S. restaurant chains, variety of local restaurants, quality of the food, and cleanliness of the restaurant outlet were deemed to be significant service factors of their overall airport dining experience.

Airport access entails service factors such as ground transportation to and from the airport, walking distance to the gates, clarity of airport terminal signs and symbols, and convenience of flight information displays. Airport administrators must ensure easy access for passengers traveling to and from the airport by having a sufficient range of ground transportation availability. Comments from the open-ended response indicated that a large part of passengers' frustration over airport accessibility comes from a lack of clarity in airport terminal signs and symbols. The layout of the airport could be very confusing, especially for first-time passengers. The purpose of having clear signs and symbols inside the airport terminal is to ease the navigating experience passengers undergo in order to reach their desired destination or service location. Thus, it is important for airport administrators to have clear signs and symbols at strategic places where passengers can see and read them. Airport administrators must also make sure that the Flight Information Display System (FIDS) is conveniently located throughout the airport. Flight information displays serve two purposes. First, they inform passengers of

specific information about their flight. Second, they points passengers to the departure gate where they embark. To improve convenience, airport administrators need to place FIDS at high traffic areas in the departure and arrival sections of the airport. Placing flight information displays near the gates is also very important, especially for transfer passengers who are pressed for time to arrive promptly at their next flight. Another important service factor in terms of airport access is passengers' walking distance to the gate. To reduce walking distance, airports could install moving walks between concourses or have electric cart service available for the disabled.

Airport immigration and customs services were also found to be very significant in overall passengers' experience, because they can have a determinant effect on passengers' arrival experience when disembarking from international flights. Specific issues in airport immigration and custom services relate to the processing time and service treatment. Immigration and custom services could take a lot of time to properly process a passenger. One of the possible causes of the long delay in this process is a lack of document preparation on the part of passengers before meeting with the immigration officer. Airport administrators could cooperate with TSA administrators by informing incoming international passengers of the documents they need to prepare specific to their purpose of travel prior to entering the immigration queue. This could be accomplished through information displayed on airport television screens or by having an immigration officer address these specific issues prior to the queue. Rudeness of immigration officers was one of the complaints that the participants voiced in the survey. To reduce this, airport administrators could communicate with the TSA administrators on the importance of having a scripted dialogue for passenger interactions. Scripted dialogue could ensure

uniformity in service interaction between the officers and the passengers, thereby reducing the likelihood of negative passenger perceptions of the overall airport experience.

Limitations and Future Research

There are several limitations of this study. First, the results are limited to the airport service quality dimensions included in the study. This study used only seven dimensions to evaluate the impact of service quality rating on these dimensions to overall perception of service quality. Second, the sampling method, using Qualtrics panel members, did not permit an effective implementation of random sampling. Since the recruitment of this study was contracted out to Qualtrics, the survey administrator or manager at Qualtrics had ultimate discretion in implementing random sampling in selecting participants for this study. Third, non-response bias was not checked. Participants in the survey were limited to Qualtrics panel members. No responses were collected from non-panel members who would have met the qualifications for the survey. Finally, the results are limited to the major airports included in the study. The study only considered four major international airports in the West Coast region (Las Vegas McCarran International, Los Angeles International, San-Francisco International, and Seattle-Tacoma International). No considerations were made to include other similar airports in terms of size and passenger traffic from other regions in the United States. Therefore, the findings may not be generalizable over the population.

With the limitations and findings presented in this study, future research should first consider applying the seven airport dimensions to other major international airports

within the U.S. This study was the first to apply the seven airport dimensions to four major international airports in the West Coast region. In order to add support to the findings presented in the study, future research could perform the same study at different international airports using the same methodology. This will help to examine whether the findings of this study are consistent across other major international airports in the United States. Future research also might want to explore factors related to passenger perception of airport environment. Airport environment has been shown to be very influential in shaping passengers' perception of overall airport service quality. Additional research on the interaction between passengers and the airport environment will be beneficial in giving empirical support for this finding, but most importantly it will help airport administrators to understand the passengers' thought process with regard how they perceive their overall environment.

APPENDIX

APPENDIX A



**Social/Behavioral IRB – Exempt Review
Deemed Exempt**

DATE: October 16, 2012

TO: **Dr. Seyhmus Baloglu**, Hotel Administration

FROM: Office of Research Integrity – Human Subjects

RE: Notification of IRB Action
Protocol Title: **Investigating the Impact of Airport Service Quality
Components to Overall Passengers' Experience**
Protocol # 1209-4270

This memorandum is notification that the project referenced above has been reviewed as indicated in Federal regulatory statutes 45CFR46 and deemed exempt under 45 CFR 46.101(b)2.

PLEASE NOTE:

Upon Approval, the research team is responsible for conducting the research as stated in the exempt application reviewed by the ORI – HS and/or the IRB that shall include using the most recently submitted Informed Consent/Assent Forms (Information Sheet) and recruitment materials. The official versions of these forms are indicated by footer, which contains the date exempted.

Any changes to the application may cause this project to require a different level of IRB review. Should any changes need to be made, please submit a **Modification Form**. When the above-referenced project has been completed, please submit a **Continuing Review/Progress Completion report** to notify ORI – HS of its closure.

If you have questions or require any assistance, please contact the Office of Research Integrity - Human Subjects at IRB@unlv.edu or call 895-2794.

APPENDIX B

Survey Questionnaire

Dear Prospective Participant,

You are being invited to participate in a research study. The purpose of this study is to investigate the impact of service experience of different airport service components to passengers overall experience with the airport.

Your input is very important to contribute to the knowledge base of the airport service quality and to help airport managers in improving their airport experience. If you decide not to participate, there will be no effects on any services you currently receive at the airport.

This study involves the completion of an online questionnaire, which will take about 15-30 minutes. If you are willing to participate, please click the next button " >> " on the bottom right of this page to proceed with the survey.

If you have any questions or concerns, you may contact Dr.Seyhmus Baloglu at seyhmus.baloglu@unlv.edu or Redha Widarsyah at widarsya@unlv.nevada.edu.
Thank you

INFORMED CONSENT
Department of Hotel Administration

TITLE OF STUDY: Impact of airport service components to overall passengers experience

INVESTIGATOR(S): PI : Seyhmus Baloglu, Ph.D, SI: Redha Widarsyah

For questions or concerns about the study, you may contact Dr. Seyhmus Baloglu at seyhmus.baloglu@unlv.edu or Redha Widarsyah at widarsya@unlv.nevada.edu.

For questions regarding the rights of research subjects, any complaints or comments regarding the manner in which the study is being conducted, contact the UNLV Office of Research Integrity – Human Subjects at 702-895-2794, toll free at 877-895-2794 or via email at IRB@unlv.edu.

Purpose of the Study

You are invited to participate in a research study. The purpose of this study is to investigate the impact of different airport service components to passengers overall experience with the airport.

Participants

You are being asked to participate in the study because you fit this criteria: 18 years old or older, taken four or more round-trip flights in the past 12 months, a member of a frequent flyer program (U.S. or Non-U.S. Based Airline), and has traveled through any of the following airports : Las Vegas McCarran International (LAS),Seattle-Tacome International (SEA), Los Angeles International Airport (LAX), San Francisco International (SFO)

Procedures

If you volunteer to participate in this study, you will be asked to do the following:

- You will be asked to evaluate your airport experience with one of the four selected airports.
- Furthermore, you will be asked to provide your feedback either positive or negative on your overall experience with your chosen airport
- At the end of the survey, you will be asked to provide demographic information about yourself and your traveling habits.

Benefits of Participation

There are no direct benefits to you as a participant in this study. However, we hope to learn about the significance of different airport service components in determining your overall experience and impression about the airport.

Risks of Participation

There are no anticipated risks associated with participating in this study.

Cost /Compensation

There will be no financial cost to you to participate in this study. The study will take approximately 15 minutes of your time.

Confidentiality

All information gathered in this study will be kept as confidential as possible. No reference will be made in written or oral materials that could link you to this study. All records will be stored in a locked facility at UNLV for 6 months after completion of the study. After the storage time the information gathered will be destroyed permanently..

Voluntary Participation

Your participation in this study is voluntary. You may refuse to participate in this study or in any part of this study. You may withdraw at any time . You are encouraged to ask questions about this study at the beginning or any time during the research study.

Participant Consent

- Yes, I have read the informed consent and agree to participate in this study. I am at least 18 years of age.
- No, I do not want to participate this time.

Pre-Qualifying Questions

We are supposed to interview people who are 18 years old or older. Are you 18 years old or older ?

- Yes - Please continue with the survey (1)
- No - Do not continue with the survey (2)

If No - Do not continue with t... Is Selected, Then Skip To End of Survey

Have you taken four or more flights in the past 12 months ?

- Yes - Please continue with the survey (1)
- No - Do not continue (2)

If No - Do not continue Is Selected, Then Skip To End of Survey

Have you traveled to and from the following airport within the last six months ? (Check all the applies)

- Las Vegas McCarran International Airport (1)
- Los Angeles International Airport (2)
- Seattle Tacoma International Airport (3)
- San Francisco International Airport (4)
- I have not traveled to or from any of the above airports (5)

If I have not traveled to or f... Is Selected, Then Skip To End of Survey

AIRPORT SERVICES

Please evaluate *your airport of choice* for the following service attributes. By using the Likert scale below, select the answer which best represents your recent experience with each service attribute. If you did not use the service, please answer "Did Not Use".

Airport Access

	Poor	Fair	Average	Good	Excellent	Did Not Use
Ground transportation access to and from the airport	<input type="radio"/>					
Walking distance to the gates	<input type="radio"/>					
Clarity of airport terminal signs and symbols	<input type="radio"/>					
Convenience of Flight Information Display	<input type="radio"/>					

Airport Services and Facilities

	Poor	Fair	Average	Good	Excellent	Did Not Use
Processing time at check-in	<input type="radio"/>					
Internet/ Wi-Fi accessibility	<input type="radio"/>					
Comforts of seatings in the gate waiting area	<input type="radio"/>					
Variety of concession outlets	<input type="radio"/>					
Waiting time at baggage claim	<input type="radio"/>					

Airport Restaurants / Dining Facilities

	Poor	Fair	Average	Good	Excellent	Did Not Use
Availability of nationally recognized U.S. restaurants chain	<input type="radio"/>					
Variety of local restaurants	<input type="radio"/>					
Quality of the food	<input type="radio"/>					
Cleanliness of the restaurant outlet	<input type="radio"/>					

Airport Shopping Facilities

	Poor	Fair	Average	Good	Excellent	Did Not Use
Availability of nationally known retail outlets	<input type="radio"/>					
Variety of retail outlets	<input type="radio"/>					
Value of price of goods or services at the retail outlets	<input type="radio"/>					

Airport Service Personnel and Security

	Poor	Fair	Average	Good	Excellent	Did Not Use
Courtesy / Helpfulness of airport staffs	<input type="radio"/>					
Waiting/Processing time at security checkpoint	<input type="radio"/>					

Airport Environment

	Poor	Fair	Average	Good	Excellent	Did Not Use
Overall cleanliness of the airport	<input type="radio"/>					
Overall ambiance of the airport	<input type="radio"/>					
Overall interior settings and layout of the airport	<input type="radio"/>					

If you have arrived internationally to and from *your airport of choice*, please answer the following questions about the airport's immigration and customs service attributes. Otherwise, you can skip this question.

Airport Immigration and Customs Services

	Poor	Fair	Average	Good	Excellent	Did Not Use
Waiting/ processing time at Immigration control	<input type="radio"/>					
Waiting / Processing time at customs clearance	<input type="radio"/>					

Compared to your expectations, how would you rate *your airport of choice*?

- Much Worse than Expected (1)
- Worse than Expected (2)
- Same as Expected (3)
- Better than Expected (4)
- Much Better than Expected (5)
- Don't Know (6)

Overall, how would you rate your recent experience with *your airport of choice*?

- Poor (1)
- Fair (2)
- Average (3)
- Good (4)
- Excellent (5)

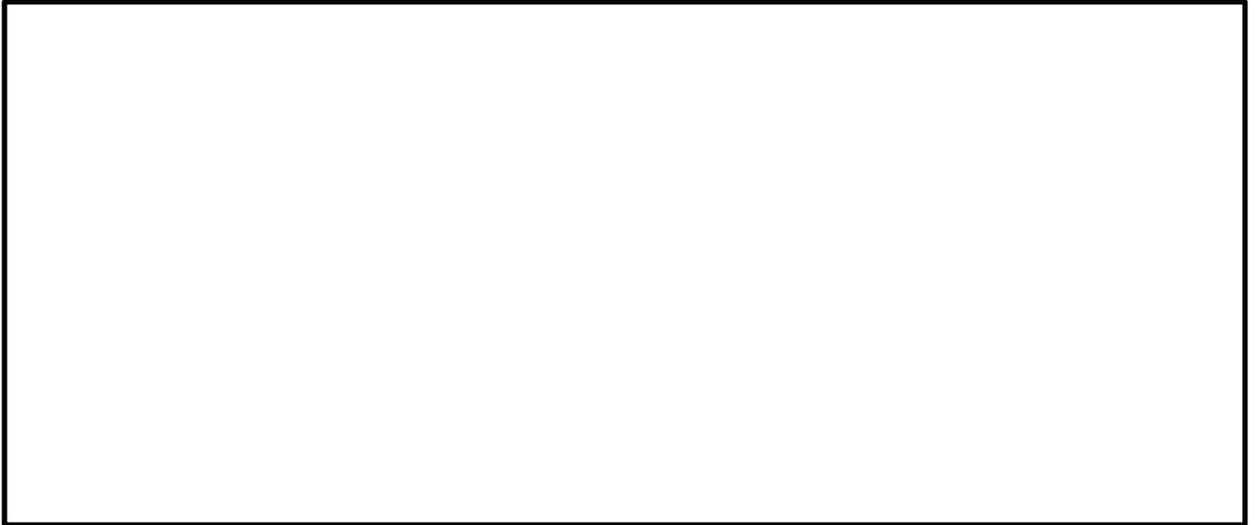
Overall how impressed are you with the offerings of *your airport of choice* ?

- Very Negative (1)
- Negative (2)
- Neutral (3)
- Positive (4)
- Very Positive (5)

Compared to other international airports, especially those you consider 'Best', how would you rate *your airport of choice*?

- Much Worse (1)
- Worse (2)
- About the Same (3)
- Better (4)
- Much Better (5)
- Don't Know (6)

In the space provided below, please provide some feedback regarding your experience *with your airport of choice*. You can share anything positive and/or negative , as they will help the airport administration to serve your better. Please be specific as possible.

A large, empty rectangular box with a black border, intended for the user to provide feedback regarding their airport experience.

DEMOGRAPHIC INFORMATION

The following questions will ask about your demographic characteristics. The purpose of these questions is for data classification only.

How many trips have you taken in the past 12 months from *your airport of choice* ?

- 1-2
- 3-4
- 5-6
- 7-8
- 9-10
- 11 or more

Do you consider yourself mostly as a leisure ,a business traveler, or both ?

- Leisure Traveler
- Business Traveler
- Both

What is your gender ?

- Male
- Female

Which category below includes your age ?

- 18-24
- 25-34
- 35-45
- 46-56
- 57-67
- 68 or older

What is your race?

- White/Caucasian
- African American
- Hispanic
- Asian
- Native American
- Pacific Islander
- Other
- I choose not to answer

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 category best represents your most recent or current occupation ?

- Homemaker
- Professional
- Middle Management
- Sales / Marketing
- Clerical Services
- Skilled / Technical
- Self Employed / Business Owner
- Student
- Retired
- Unemployed
- Other (please specify) _____

What is your annual salary (including bonuses and commissions) in U.S. dollars?

- \$0 - \$25,000
- \$25,001 - \$50,000
- \$50,001 - \$75,000
- \$75,001 - \$100,000
- \$100,001 - \$125,000
- \$125,001 - \$150,000
- \$150,001 - \$175,000
- \$175,001 - \$200,000
- \$200,001+

In which state do you currently reside?

- Alabama
- Alaska
- Arizona
- Arkansas
- California
- Colorado
- Connecticut
- Delaware
- District of Columbia
- Florida
- Georgia
- Hawaii
- Idaho
- Illinois
- Indiana
- Iowa
- Kansas
- Kentucky
- Louisiana
- Maine
- Maryland
- Massachusetts
- Michigan
- Minnesota
- Mississippi
- Missouri
- Montana
- Nebraska
- Nevada
- New Hampshire
- New Jersey
- New Mexico
- New York
- North Carolina
- North Dakota
- Ohio
- Oklahoma
- Oregon
- Pennsylvania
- Puerto Rico
- Rhode Island
- South Carolina
- South Dakota
- Tennessee
- Texas

- Utah
- Vermont
- Virginia
- Washington
- West Virginia
- Wisconsin
- Wyoming
- I do not reside in the United States

END OF SURVEY

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VITA

Graduate College
University of Nevada Las Vegas

Redha Widarsyah

Address:

4515 Grotto Court
North Las Vegas, NV 89031

Degrees:

Bachelor of Science, Hospitality Management, 2009
University of Nevada Las Vegas

Thesis Title: The Impact of Airport Service Dimensions on Overall Airport
Experience and Impression

Thesis Examination Committee:

Chairperson, Dr.Seyhmus Baloglu, Ph.D.
Committee Member, Dr.David Christianson, Ph.D.
Committee Member, Dr. Tony Henthorne, Ph.D.
Graduate Faculty Representative, Dr. Hualiang Teng, Ph.D.