A STUDY OF UNDERSTANDING THE IMPACT OF PHYSICAL ENVIRONMENT ON PERCEIVED SERVICE QUALITY IN THE HOTEL INDUSTRY

By

YUNKYONG KIM

Bachelor of Arts
in Literature and Library Information Science
Pusan National University
Busan, South Korea
1994

Master of Arts in Business Management
Dong-A University
Busan, South Korea
2001

Submitted to the Faculty of the
Graduate College of the
Oklahoma State University
in partial fulfillment of
the requirements for
the Degree of
DOCTOR OF PHILOSOPHY
May, 2007

A STUDY OF UNDERSTANDING THE IMPACT OF

PHYSICAL ENVIRONMENT ON PERCEIVED

SERVICE QUALITY IN THE HOTEL INDUSTRY

Dissertation Approved:

Dr. Bill Ryan
Dissertation Adviser

Dr. Hailin Qu

Dr. Jerrold Leong

Dr. William D. Warde

Dr. A. Gordon Emslie
Dean of the Graduate College

ACKNOWLEDGEMENTS

This dissertation is dedicated to my daughter, Jaehee and my husband J. Tark, and my mother, Hyoja Kim.

I would like to express my gratitude to the faculty and colleagues at OSU who have helped me in many different ways and enabled me to complete this dissertation.

I am very grateful to my advisor, Dr. Bill Ryan. He was the best advisor that anyone could ever have. He always encouraged and constantly motivated me in every stage of the dissertation process. I would like to express my special thanks to Dr. Hailin Qu, who is a member of my committee. He was my navigator in my academic life. Dr. Jerold Leong, and Dr. William Warde who are my committee members patiently listened and guided me through times that I found difficult. Dr. Jeon, Jungok who is my Korean advisor at Pukyong National University constantly motivated me to do better for my life and helped me get a good feel for academic research in general, and consumer research in particular.

There are many other faculty members and colleagues in the doctoral program from whom I have learned a great deal and I thank all of them for their support.

My Mother Hyoja Kim, my daughter Jaehee Lee, and My Husband James, Tark, played a vital role in helping me go through the dissertation process. They helped me keep things in the right perspective.

Especially, I thank to my daughter. She has been stayed away from me quite long times and finally, we met again in 2006. Without her lonely days which are without mom, nothing was happened to me. At this moment, I really thanks to my daughter again and I will promise to her we will never separate again forever.

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

Figure Page

CHAPTER I

INTRODUCTION

Overview

Hospitality customers usually purchase a service by simultaneously evaluating several criteria. A typical buying decision might take into account service quality, delivery speed, price, and any special buying incentives. It is imperative that hospitality business takes into account preferences and choices of customers when making decisions on products and service attributes. Managers need to know how customers integrate values and trade–off different products and service attributes. Information about customer demands and preferences must be incorporated into the design and service delivery process.

The event 9/11, the worsening economy and high oil prices forced the hotel industry to reduce costs including staffing cutbacks and reductions in services and amenities which add value to the guest experience. After 9/11, the combined effects of the Iraqi war, SARS, the weak economy and high oil prices further challenged the hotel industry. Customer satisfaction has recovered from the events of September 11, however, customer satisfaction has slowly climbed to the pre-9/11 level (Barsky and Nash, 2003). Hotel companies that invested in staffing and restored selected services and amenities led the industry through the recovery.

As a marketing concept, efforts to align marketing strategy with the goal of maximizing customer satisfaction have been pursued in earnest by product and service providers. Oberoi and Hales (1990) mentioned the current status of service quality conceptualization models and identified relevant attributes of the service product. A customer satisfaction theoretical framework is a way of measuring the perceived quality of service product.

Most hotels have continually seen considerable reconstructing and updating in the lodging industry. The U.S. lodging industry was perceived to spend $3 billion on renovations in 2004 (Hudson, 2003). There will also be increased investment in guest history, yield management enhancements and employee training. Development of new concepts and segments, and the increased merger and acquisition activities in lodging industry have been prominent growth areas in a number of new lodging companies (Quan et al., 2002). Dubé and Renaghan (2000) defined value in terms of customer's perceptions and studied how to effectively create customer value in lodging industry.

Statement of Problem

Service managers must balance a complex set of multiple processes and inputs that may have uncertain outputs. In the short term, service managers may focus on variable resources like recruiting, selection, training, compensating, motivating, and monitoring personnel service in hopes of producing superior service quality. The daily pressures of delivering intangible services may lead service managers to overlook or forego long term fixed investments in more tangible aspects of service quality, such as relocation or renovation of the physical facilities.

Dubé and Renaghan (2000) confirmed the importance of architecture and design as key value drivers for guests. Customers recognized room design and amenities as factors of their satisfaction through its evaluation of perceived quality. They also asked which hotel attributes determined their purchase decision. In response, customers ranked the physical appearance of the hotel exterior, the public space, and the guest room only slightly lower than the hotel's location and brand name. They ranked amenities and design above the service dimensions. Moreover, physical structure and interior design emerged at the top of the list when customers were asked what creates value and which attribute improves customer satisfaction and loyalty during their stay at the hotel. Customer satisfaction and loyalty increased significantly when the customer positively evaluated their perceived quality about their stay.

Booms and Bitner (1981) suggested seven Ps in service marketing system. Mittal and Baker (1998) translated these seven Ps for services: product, place, price, promotion, people, process, physical facilities. Product translated to service design, place translated to location and distribution which were explained as distance to service sites, home delivery, 24-hours availability and etc. Price and promotion translated to common meaning of goods and services, and people translated to service employees who produce and deliver the service. Process translated to the service production procedures and protocol, and physical facilities translated to the surroundings in which the service production is housed. Mittal and Baker (1998) stated the service encounter is the interface between the customer, the service delivery system, and where the service actually happens. So, the service encounter is useful to the customer and it is useful as part of the service marketing system. Bitner (1992) suggested a conceptual framework for

understanding environment and user relationships in service organizations and also typology of service organizations based on variations in form and usage of the servicescape.

The problem is neither managers nor owners have strongly focused on developing service quality programs related to design and architecture. Customer's evaluation and judgment of an service rely on extrinsic cues. Generally, the service is produced and consumed simultaneously. The customer uses total services within the firm's physical facility and the customer is naturally exposed to the place where the service is produced. This will influence on customer's perception and evaluation of the service experience (Bitner 1992, Shostack 1977, Zeithaml 1988). The Physical environment which related to the facility's image includes extrinsic cues which influence the customer's perception and satisfaction of the service (Bitner 1990; Harrell, Hutt, and Anderson 1980). Although the physical environment had an impact on the behavior and attitudes of customers, little research has been examined how the various component of physical environment affect attitudes and behaviors of customers and little empirical research has been done on the relationship between physical environment and key antecedents of perceived quality (Baker, Parasuraman, Grewal and Voss 2002; Baker, Levy, Grewal 1992; Bitner 1992). Hotel managers or owners need to know how customers will use and enjoy together the property and the manner in which specific architecture and design components contribute to creating distinctive value. If the physical environment of hotel's such as hotel exterior, layout, cleanness, electric equipment quality are key factors to get positive perceived service quality evaluation from customers, physical environment issues should be crucial for most hotel operators (Dubé and Renaghan, 2000; Hinkin and Tracey, 2003 a, b).

Hotel properties' elaborate physical surroundings require a large capital investment to create an impressive physical presence. Operators should consider whether those financial investments are truly worth the money.

The purpose of this study is to examine the impact of the physical environment on perceived service quality in the hotel industry.

The specific objectives of this study are to:

1. Combine and adopt Mittal and Baker's (1998) and Bitner's (1992) frameworks, which outline and illustrate the influence of the physical environment in customers' responses and subsequent behavioral intentions, and incorporate it within the traditional service quality framework in the hotel industry.
2. Examine the effect of intangible service variables theorized to influence perceived quality with the physical environment of the hotel industry.
3. Examine the effect of tangible service variables theorized to influence perceived quality with the physical environment of the hotel industry.
4. Examine the effect of perceived quality on customer loyalty.
5. Measure the differences between perceived service qualities influenced by intangible and tangible service factors
6. Measure the differences between customer loyalties influenced by perceived service quality of intangible service factor and perceived service quality of tangible service factor

Significance of the Study

Theoretical contribution

This study contributes to the theoretical advancement in the field of hotel industry by empirically testing a structured model to develop a concept of servicescape of hotel industry. Theories which are related to the role of the environment in the satisfaction process have been advanced (Mehrabian & Russell, 1974; Bitner, 1992; Lucas, 2003; Rosenbaum, 2005), but few studies have empirically tested these theories in the hospitality industry. Wakefield and Blodgett (1996) empirically examined the role of the physical environment on the satisfaction process for leisure service customers, including slot players. Lucas (2003) extends the work of Bitner (1992) and Wakefield and Blodgett (1996), narrow down the scope of the slot floor of a hotel casino. This current study adapts the combination framework of Baker's (1986) and Bitner's (1992) into the hotel industry.

Practical contribution

From a practical standpoint, the findings of this study will be useful to plan a strategic marketing program. Hotel owners, managers and operators would be able to use this research to set their marketing plan to exceed the needs of the hotel guest. An example of effective physical environment planning might involve a hotel renovation. Managers have access to a wide variety of specialized furniture, fixtures and equipment suppliers and they can get assistance from a designer who can create a truly distinctive experience for the guest. A well integrated understanding of customer's requirements and

use of the physical property will help managers to carefully consider operational possibilities and constraints. The managers can translate those requirements into innovative, esthetic, and functional designs. Finally this study will offer a diagnostic and decision–making tool for CEO and top managers of hotel companies that will help them maximize the value of their investment.

Organization of the Study

Chapter 1 presents an overview of the study and includes a background of the problem, and research objectives. In chapter 2, is an interdisciplinary review of the literature review of the concept of perceived service quality and physical environment. Chapter 3 provides a summary of methodology. Chapter 4 provides results of the data analysis. Chapter 5 presents a summary and discussion of findings as well as implications of results. Theoretical and practical implications of the findings followed by limitations of the study are discussed next. Finally, the chapter concludes with suggestions for future research and concluding comments.

CHAPTER II

REVIEW OF LITERATURE

Review of Service Quality Studies

Definition of service quality

There are several definitions of quality. Reeves and Bednar (1994) provide several definitions of quality. They defined quality as excellence, value, conformance to specifications and meeting or exceeding customers' expectations. Crosby (1979, 1985) define quality as "conformance to requirements." Juran (1989) defined quality as fitness for use. It means that the product meets the customer's needs and is free of deficiencies. Goetsch (1994 a, b) and Spencer (1994) defined quality as satisfying or delighting the customer.

Other researchers suggest that the quality needs may be defined by the customer (Parasuraman, Zeithaml and Berry, 1998; Gronroos, 1984, 1990; Parasuraman, Zeithaml and Berry, 1985; Schneider and Bowen, 1985). The customer's perception of quality has been the primary focus of service quality studies. In other words, service quality is based upon the customer's perception of quality.

Gronroos (1982) suggests that performance consists of functional and technical quality components in a service context. Gronroos (1982) adapts service quality model for service industry to the technical quality of the service encounter and relating to the functional quality of service performance. He suggests two dimensions: technical quality of the service encounter and the functional quality of service performance represents the variety of customer's performance perception and customer's evaluation of the overall level of service quality combining both aspects of service performance. Gronroos (1982) found that the functional quality dimension had a stronger impact on customer perceptions than the technical quality dimension. The more objective technical quality dimension has the more important role in the development of customer service quality perceptions.

The most popular definition of quality is the customer's perception of service excellence (Parasuraman, Zeithaml and Berry, 1990, 1998) and relative superiority of performance (Bitner and Hubbert, 1994; Gronroos, 1982). The definition of service quality is also understood as an attitude (Cronin and Taylor, 1992; Parasuraman, Zeithaml and Berry, 1988). Bitner and Hubbert (1994) define service quality as the customers' overall impression of the relative inferiority or superiority of the organization and its services.

Parasuraman et al. (1985) state that service quality is a degree and direction of discrepancy between customers' service perceptions and expectations. Berry et al. (1990) define service quality as the discrepancy between customers' expectations or desire and their perceptions. These definitions of service quality are based on a comparison of the service quality perception between the customer expectations before using the service

and the actual performance after using the service. (Gronroos, 1982 Parasuraman, Zeithaml and Berry, 1985; Zeithaml, Parasuraman and Berry, 1990).

Parasuraman, Zeithaml and Berry (1985) define characteristics of service as intangibility, heterogeneity and inseparability. Bateson (1978), Shostak (1977), Bateson (1979), Berry (1980), Lovelock (1983), and Zeithaml and Bitner (1996) found that services were intangible. Quality is therefore not counted, measured, inventoried, tested or verified. Service is a high labor content and heterogeneous characteristic. Service performances vary depending on the producer, customer, and situation (Parasuraman, Zeithaml and Berry, 1986). Customers' backgrounds are classified in terms of pluralistic expectations about the service (Lakhe and Mohanty, 1995). This character of service suggests that all services cannot fall into the same category. Carmen and Langeard (1980), Gronroos (1978), Regan (1963) and Upah (1980) claim that production and consumption of services are inseparable.

Defining quality by using the customer's expectations is the most complex way of defining the quality. Service is not a uniform concept because quality in the service sectors is highly involved with human contact. Customers' perception of service quality can depend on the type of service, and has been the main focus of service quality research.

Service quality measurement

Service quality has been measured from customers' perspective since the mid 1980's. Garvin (1983) measures quality by counting the number of internal and external failures. Internal failures are observed before a product leaves the factory and external

failures are incurred after a unit has been installed. Quality is conformance to the customers' not to companies' specifications.

Parasuraman, Zeithaml and Berry (1985) developed a conceptual model that define a service quality with customers' viewpoint and suggests ten factors: tangibles, reliability, responsiveness, competence, courtesy, credibility, security, accessibility, communication and understanding the customer. Parasuraman et al. (1988) modified ten dimensions of service quality into five dimensions, including 22 items that measure customer perceptions of service quality through empirical testing. Those five dimensions are tangibles (the appearance of physical facilities, equipment, personnel, and communication materials), reliability (the ability to perform the promised service accurately and dependably), responsiveness (the willingness to help customers and to provide prompt service), assurance (the knowledge and courtesy of employees and their ability to convey trust and confidence) and empathy (the caring, individualized attention provided to the customer).

In order to improve the SERVQUAL scale and to verify its applicability, Parasuraman et al. (1991a) argued that the key to providing superior service is understanding and responding to customer expectations. They conducted 16 focus group interviews with customers in six service sectors: automobile insurance, commercial property and casualty insurance, business equipment repair, truck and tractor rental and leasing, automobile repair and hotels. They used qualitative research to explore questions and quantitative research to test the relationships within the model. As a result of their study, Parasuraman, Zeithaml and Berry (1991a) eliminated the negatively expressed items, replaced two confusing items with non-redundant alternatives, and added

importance weights to the measurement process. But their study results failed to support the five factor structure of the SERVQUAL scale, and did not support the empirical usefulness of the expectation items. Therefore, they recommended measuring service quality only in terms of performance.

Cronin and Taylor (1992) argue that the disconfirmation paradigm is intended to measure satisfaction not service quality and tested the performance only scale (SERVPERF). They conclude that the performance-only SERVPERF measure of service quality outperformed the disconfirmation-based SERVQUAL measure. Cronin and Taylor (1992) examine Parasuraman, Zeithaml and Berry's approach (1991a) which added importance weights to the measurement process. But they found that SERVQUAL and SERVPERF which are not importance-weighted outperformed their importance-weighted counterparts. Zeithaml, Berry and Parasuraman (1996) argue that customer service quality perceptions consist of the perceived service performance (SERVPERF) and the perception of solving problems which may occur during the service encounter. They suggest that the gap between performance and expectations moderates the relationship between performance and behavioral outcomes. As the results, a positive relationship existed between the perceptions of service quality and behavioral outcomes as customer loyalty, reluctance to switch, willingness to pay, willingness to pay a premium and increased probability of purchase.

Bolton and Drew (1991b) developed a multistage model of customers' assessments of service quality and value which is based on the disconfirmation paradigm. They found that the customers' perceptions of service quality were directly affected by disconfirmation and indirectly affected by expectation and actual performance through

satisfaction or dissatisfaction. Although the SERVQUAL scale is a popular measurement tool, Gronroos (1984), Parasuraman, Zeithaml and Berry (1985, 1988) and Peter, Churchill, and Brown (1993) questioned using the disconfirmation paradigm in service quality research. Still the disconfirmation paradigm and SERVQUAL have been reviewed.

Gronroos (1984) developed the initial model of perceived quality based on the disconfirmation paradigm. McDougall and Levesque (1994) propose a conceptual model by adding a physical environment factor. That is the three factor model of service quality in which the three factors are service outcomes (Gronroos, 1994), service process (Gronroos, 1994) and physical environment (Bitner, 1992). They used confirmatory factor analysis to test the model by using the dimensions of SERVQUAL. The three factor model of service quality was supported by the result of their study. McDougall and Levesque (1994) concluded that the three factors could be important determinants of the customers' assessment of service quality.

Rust and Oliver (1994) developed a conceptual model of perceived quality which consists of three elements: service product, service delivery and service environment factors. In this model, service product refers to customers' cumulative perception of the service and any additional features which come from the services, including the service act (Rust and Oliver, 1994; Gronroos, 1984; McDougal and Levesque, 1994). Service delivery or process is how the service was delivered on a specific occasion. The physical environment refers to the internal environment such as the organizational culture and philosophy that management brings to the service delivery component and the external

environment is the ambience surroundings of the service setting. These factors affect the customers' subjective evaluation of service quality.

Johnson, Tsiros, and Lancioni (1995) applied the general system theory and discussed the contribution of service inputs, processes and outputs to overall quality perceptions. "Input factor" includes reputation, equipment, physical facilities, waiting area, furnishings, "process factor" includes interactions between provider and customer such as attention, responsiveness, courtesy, feeling and "output factor" includes fulfillment of customers' goal, and receiving expected service the first time. They conducted two empirical studies of full service restaurants, banks, and public transportation. Johnson et al. (1995) stated that the system theory has several characteristics of the service dimensions as discussed in earlier studies. The input dimension is similar to the dimensions of material quality, tangibles, corporate image, technical quality and physical support. The process dimension includes interactive quality, staff-customer interaction, functional quality, assurance, and responsiveness. The output dimension is represented in outcome and reliability.

Dabholkar, Thorpe and Rentz (1996) proposed a hierarchical structure for retail service quality. This model suggested that service quality is a multi-level and multi-dimensional construct. The level includes consumers' overall perception of service quality, a dimension which consists of five correlated, and distinct dimensions: physical aspects, reliability, personal interaction, problem solving, and policy. Physical aspects are appearance and convenience, reliability is keeping promises and doing the job properly, the personal interaction dimension is the ability to inspire confidence and to be courteous and helpful. They used qualitative and quantitative research method to test the validation

of the model. Dabholkar, Thorpe and Rentz (1996) found that the perceptions of performance levels and customers' personal characteristics are important in assessing value. This result supports the gap model proposed by Zeithaml, Berry and Parasuraman (1996).

Brady and Cronin (2001b) developed a combination model of Dabholkar et al. (1996), e.g., the multilevel model and Rusts and Olive's (1994) three component model. The primary dimensions of this combination model are interaction quality, outcome quality, and physical environment quality. Each dimension has three subdimensions. Interaction quality is attitude, behavior, and expertise, outcome quality is waiting time, tangibles and valence, and physical environment quality is ambience, design and social factors. Their research results can be used in amusement parks, the photo developing industry, dry cleaning and fast food restaurants.

This section reviews several studies measuring service quality measurement. The literature discussed the measurement of service quality constructs in retail stores and service industries. However, that research does not discuss hospitality industries and tangibles. In the next section, theoretical attempts in tangibles including physical environment of service quality study will reviewed.

Tangible aspects (Physical environment)

Among service characteristics and attributes, tangibles are more attentive to customers as clue of service quality (Shostack, 1977; Berry, 1980; Zeithaml, 1981; Gronroos, 1984; Berry et al., 1985; Bitner 1990; Burton 1990; Turley and Fugate 1992; Ward et al., 1992, Johnson, Tsiros, and Lancioni, 1995; Dabholkar, Thorpe and Rentz,

1996; Brady and Cronin, 2001a; Hoffman, Kelly and Chung, 2003; Koernig, 2003). Ward et al. (1992) stated that customers' reactions to the environmental cues are much the same as they are to the package cues when customers evaluate and form their internal expectations about goods. Specific elements of the physical environment influence people's cognition, emotion, and behavior (Russell and Ward, 1982). Bateson (1985) described tangibles as an important factor in managing the service encounter and reducing a perceived risk. If service marketers convey the proper signal to their service environment, they will fulfill their prime responsibility (Shostack, 1997, 1985, 1987; Berry, 1980; Berry et al., 1985). The tangibles include physical facilities (Shostack, 1977; Berry, 1980; Zeithaml, 1981; Gronroos, 1984; Berry and Clack 1985; Berry et al., 1985; Bitner 1990, 1992; Burton 1990; Turley and Fugate 1992; Ward et al., 1992, Wakefield, Blodgett, 1994; Johnson, Tsiros, and Lancioni, 1995; Dabholkar, Thorpe and Rentz, 1996; Brady and Cronin, 2001a; Hoffman, Kelly and Chung, 2003; Koernig, 2003), appearance of the service provider (Shostack, 1977; Berry, 1980; Zeithaml, 1981; Berry et al., 1985; Flipo, 1988; Bitner 1990, 1992; Wakefield, Blodgett and Jeffrey, 1994; Johnson, Tsiros, and Lancioni, 1995; Dabholkar, Thorpe and Rentz, 1996; Brady and Cronin, 2001a; Hoffman, Kelly and Chung, 2003; Koernig, 2003), uniforms (Shostack, 1977; Dabholkar, Thorpe and Rentz, 1996; Brady and Cronin, 2001a), décor (Shostack, 1977; Flipo, 1988; Dabholkar, Thorpe and Rentz, 1996; Brady and Cronin, 2001a), devices or equipment (Berry et al., 1985; Flipo, 1988; Dabholkar, Thorpe and Rentz, 1996; Brady and Cronin, 2001a), logo (Berry, 1980; Berry et al., 1985; Flipo, 1988), and correspondence, letters and statements (Shostack, 1977; Dabholkar, Thorpe and Rentz, 1996; Brady and Cronin, 2001a).

This study focuses on the physical environment. Kotler (1973) suggests the causal chain connecting atmosphere and purchase probability model. Koteler (1973) refers to atmospherics as the effort to design environments to stimulate purchases. Kotler (1973)'s main dimensions consist of four parts. They are visual, aural, olfactory and tactile dimensions of atmosphere. The visual dimension includes color, brightness, size and shapes. The aural dimension includes volume and pitch. The olfactory dimension includes scent and freshness. The tactile dimension includes softness, smoothness and temperature. This model suggests that the sensory qualities of a purchase object are subjective and affect the buyer's perception of the quality of physical space. Kotler (1973) also suggests that architecture, interior design and window dressing play an important role in the customers' atmospheric realization.

Milliman (1982) found that background music affected the behavior of supermarket shoppers. An empirical test found that the tempo of instrumental background music can significantly influence both the pace of in-store traffic flow and the daily gross sales volume. Milliman (1986) examines the effect of background music on behavior of restaurant customers. The tempo of background music affects dining speed. But slow tempo music and fast tempo music did not affect the number of people who left the restaurant prior to being seated and the average sales amount. But, the slow tempo music makes people purchase more alcoholic beverages. Milliman's (1986) study replicates his 1982 study and that both studies extend the research to a different type of physical environment.

Baker (1986) suggests that tangible cues influence customers' perception, and classifies environmental variables from customers' viewpoint. Baker (1986) identifies the

environment, which consists of ambient, design and social factors (Steele, 1991). Baker (1986) also identifies four components which describe the behaviors in service environment based on Meharabian and Russell's (1974) model of approach-avoidance behavior. The approach – avoidance behaviors describe an increasing the probability of purchase and decreases the probability of purchase.

Bitner (1992) identifies the typology of service organizations based on variations in form and usage of the servicescape. Bitner (1992) defines a servicescape as a manmade environment. She suggests that the physical environment mentally influences customers' formation of service as an extrinsic cue. Bitner (1992) also states that emotional response to the environment can influence customers' behavior. This study facilitates servicescape utilization of service firms. Bitner (1992) suggests conditions as ambient factors, spatial layout as functionality factor and signs, symbols as artifacts factor. Bitner (1992) states that these three factors are major components of servicescape and are important to understanding customer behavior.

Sprangenberg, Crowley and Henderson (1996) review environmental psychology and olfaction research and propose the stimulus-organism-response (S-O-R) to demonstrate that ambient scent affects customer shopping behavior. Sprangenberg, Crowley and Henderson (1996) suggest that ambient scents affect approach-avoidance behavior, the customers' desire to stay in the store and their purchase intentions. The stimulus-organism-response (S-O-R) describes the environment as a stimulus (S) which affects customers' evaluations (O) then the evaluation will turn to approach/avoidance responses (R). Sprangenberg, Crowley and Henderson (1996) conducted an empirical study and found the effects of scent on the evaluations of a store, its products, or

customers' shopping behaviors. Finally, Sprangenberg, Crowley and Henderson (1996) suggest the managerial implications for retail and service outlets that are interested in the benefits of scenting their stores.

See Tables 1, 2, and 3 for a summary of the physical environment variables of previous research arranged by time.

Table 1 Summary of physical environment variables of previous research (1973-1986)

Researcher (Year)	Kotler (1973)	Baker (1986)	Baker (1986)
Used variables	**Visual dimension** -Color -Brightness -Size -Shape	**Ambient conditions** -temperature -lighting -Noise -Music -Scent	**Ambient factors** ►Air quality -temperature -humidity -circulation/ventilation ►Noise ►Scent ►cleanliness
	Aural dimension -Volume -Pitch	**Aesthetics** -Color -Style -Use of Materials -Art work -Etc	**Design factors** 1)Aesthetic ►Architecture ►Color ►Scale ►Materials ►Texture ►Shape ►Style ►Accessories 2)Functional ►layout ►comfort ►sinage
	Olfactory dimension -Scent -Freshness	**Privacy** -Use of enclosed offices versus open plan design	**Social factors** 1)audience ►number ►appearance ►behavior 2)personnel ►number ►appearance ►behavior
	Tactile dimension -Softness -Smoothness -Temperature	**Efficiency/convenience** -Transaction areas that are easy to find, directional signs. -Etc.	
	Visual dimension -Color -Brightness -Size -Shape	**Social conditions** -Customers and bank personnel	

Table 2 Summary of physical environment variables of previous research (1990-1996)

Researcher (Year)	Turley, Fugate and Milliman (1990)	Bitner (1992)	Baker and Cameron (1996)	Wakefield and Blodgett (1996)
Used variables	**Exterior variables** -Exterior signs -Entrances -Exterior windows -Height of building -Size of building -Surrounding stores -Address and location -Uniqueness -Surrounding area -Parking -Congestion and traffic	**Ambient conditions** -temperature -air quality -noise -music -odor -etc. **Space/function** -layout -equipment -furnishings -etc. **Signs, symbols & artifacts** -signage -personal artifacts -style of décor -etc.	**Ambience** -Lighting -Cleanliness **Design** -Layout -Total space -Architecture/style -Colors -Color combinations -Building materials -Textures/patterns -Accessories -Furnishings -Signage **Social** -Appropriateness	**Layout accessibility** -furnishings -equipment, -service areas. -passageways -entry and exit, -ancillary service area **Facility aesthetics** -architectural design -interior design -décor **Seating comfort** -the space between the seats **Electronic equipment/displays** -high quality projection -sound systems -type and quality of video -slot machines (at arcades or casinos) **Facility cleanliness** -maintain cleanliness -ongoing cleanup
	Layout and design variables -Space design -Configuration -Allocation -Waiting room -Degree of privacy -Service groupings -Placement of equipment -Traffic flow -Vertical transportation			
	General interior variables -Colors -Lighting -Scents -Sounds and music -Air quality -Temperature -Signs -Decoration and art -Awards -Degrees -Certificates -Desks and furniture -Dead areas -Cleanliness -Crowding -Flooring -Price displays -Personnel -Payment method			

Table 3 Summary of physical environment variables of previous research (1999-2003)

Researcher (Year)	Wakefield and Blodgett (1999)	Baker, Parasuraman, Grewal and Voss (2002)	Lucas (2003)
Used variables	**Building design and décor**: Attractive outside appearance Attractive interior design Easy layout to get around, Comfortable seats **Equipment**: electronic equipment is -high quality, -excellent, -modern-looking **Ambience**: -kept clean -comfortable temperature -Employee's neat appearing	**Design perceptions** Pleasing color scheme Attractive facilities Organized merchandise **Employee perceptions** Well-dressed employees Friendly employees Helpful employees **Music perceptions** Pleasant music Appropriate music Bothersome music **Time/effort cost** Perceptions shopping effort Time sacrifice Search effort **Psychic cost perceptions** Unpleasant atmosphere Displeasing atmosphere Uncomfortable atmosphere **Monetary price perceptions** Expensive gifts Too much money **Interpersonal service quality perceptions** Treated well Personal attention High-quality service Prompt service **Merchandise quality perceptions** High-quality gifts High workmanship **Merchandise value perceptions** Fair gift price Good value Economical gifts **Store patronage intentions** Willing to pay recommend Willing to buy Shopping likelihood	Seating comfort Ambient conditions Interior décor Cleanliness Layout/navigation (Casino navigation) Gaming value Staff friendliness Service promptness

Service quality study in the hospitality industry

SERVQUAL models have been used for many studies of the hospitality industry. Lehtinen and Lehtinen (1991) adopt two approaches to the analysis of service quality and its dimensions. They conducted two empirical studies in restaurants and found suitable quality dimensions for restaurant service analysis. Saleh and Ryan (1991) identify the gap between customers' perceptions of service attributes of a hotel and management perceptions of attributes of a hotel and the gap between customers' expectation of the service and perceived service quality. They argue these gaps will be a source of customers' dissatisfaction.

Johns (1992 a, b) identified gaps in the present knowledge and proposes some ideas for future research. He suggests three review articles. He defines quality and dimensions of quality in the first part and mentions sub quality and quality attributes. He adapts Khan (1982)'s study to identify factors which affect food habits and preferences and adapts Nightingale's (1985) study to identify the quality in the hotel industry. In the second part, he suggests approaches to quality management. It contributes to transfer quality management application from the manufacturing sector to hospitality industry focusing on the development of system and techniques in the hospitality industry. The third part identifies trends in the measurement and management of quality in the hospitality industry.

Saunders and Renaghan (1992) studied Total Quality Management (TQM) and differences between the manufacturing and service environments. This study highlights the potential difficulties of implementing TQM in the hospitality industry. This uses a case study of the guest service process at the Sheraton Brisbane Hotel and Towers.

Sweeney, Johnson and Armstrong (1992) studied cues used by customers in product assessment and selection. They conducted an empirical study in restaurants. This study suggests which cues are most important to customers and assesses both the expected level of service and the choice of a service. They also show how these cues are traded off against each other. Specifically, Sweeney, Johnson and Armstrong (1992) test whether the cues are used differently between the expected level of service and choice of a service. Their empirical study used a student sample and different types of restaurants in different locations.

Dube, Renaghan and Miller (1994) tested restaurant service quality with a series of scenarios. They used five dimensions to measure customer satisfaction with food service. They found relative importance of service attribute in repeat-purchase intention and tradeoff process.

Stevens, Knutson and Patton (1995) adapt SERVQUAL to the restaurant industry and named it "DINESERV". The instrument consists of 40 statements that apply to restaurants. They tested internal consistency, parallelism and coefficient alpha and used confirmatory factor analysis to use DINESERV to measure restaurant dimensions. Stevens, Knutson and Patton (1995) use DINESERV to determine how customers perceive the quality of restaurant service and called it "DINESERV.per." It is designed to continually assess customers' perceptions of restaurant using a 21point interview. DINESERV helps DINESERV.per's users determine whether a change in perceptions comes from a change of standard expectation or from a change in service quality.

Lee and Hing (1995) use SERVQUAL to measure and compare service quality in fine restaurants. This study shows that customers' expectation of service quality is higher

than their perception of service quality. Assurance and reliability are the two most important dimensions of service quality in the restaurant business. Khan (1996, 2003) also adopts SERVQUAL scale to test service quality expectations of ecotourists. They adapt and revise the original SERVQUAL (Parasuraman et al., 1988) for their study and call it ECOSERV. They divide tangible factors into tangibles and eco-tangibles. Eco-tangibles ranked first with ecotourists and were followed by assurance, reliability, responsiveness, empathy, and tangibles.

Motwani, J., Kumar, A. & Youssef, M. A. (1996) examine the implementation of quality management programs in the hospitality industry. They suggest a five-stage model: awareness and commitment, planning, programming, implementing and evaluation. This study summarizes the different approaches to implementing quality management programs by hospitality organizations such as Days Inn, Hampton Inn, Four Seasons, Hilton and Marriott,.

Cheung and Law (1998) discuss human resources and their relationships with service quality and total quality management in hotel settings. They introduce the improved service quality model (ISQM) which identifies the basic components of service quality. This model's strength is of its ability to capture information from both the customers and the employees. Ekinci and Riley (1999) describe the use of the Q-sort technique in the scale development process and take the dimensions from established models of service quality. To test Q-sort methodology, they take a sample which consists of only people who have stayed in a hotel in the last year.

Pun and Ho (2001) investigate the attributes of service quality and identify ten elements which may promote quality services. The study describes an excellent service

approach and the quality of service attributes and elements. These attributes and elements contribute to the organization-wide performance for sustainable long-term profitability. They suggest that creating an excellent fundamental environment includes the development of attractive service environment and the environment guides principles of quality strategies toward the service environment for restaurant operations. Lau, Akbar and Fie (2005) use a modified version of the SERVQUAL model to access the expectations and perceptions of service quality in Malaysia's four- and five-star hotels. They examine the relationship between overall satisfaction levels and the five service quality dimensions in luxury hotels.

Most service quality studies in the hospitality industry adapted the SERVQUAL scale to measure service. These studies found that SERVQUAL is useful and effective in measuring service quality in the hospitality industry. The cases of LODGSERV, DINESERV and ECOSERV also support SERVQUAL as a measure of service quality in the hospitality industry.

Tangibles in hospitality industry

Koteler (1973) defines "design environments" as stimuli to the buyer's decision to purchase. This model suggests that the sensory qualities of space around a purchase object are subjective to customer and affect the buyer's perception of physical space quality. He test his model in several types of industries not only retail stores but restaurants and the airport industry. Finally, he finds that architecture, interior design and window dressing are doing important aspects of customers' perceived quality.

Pranter and Martin (1991) found that customers shared the service facility's physical environment and that their satisfaction usually depends on their direct or indirect interactions. They conduct exploratory research and identify ten roles of a service provider. Those roles are Rifleman, Environmental Engineer, Legislator, Matchmaker, Teacher, Santa Claus, Police Officer, Cheerleader, Detective and Director. In 1992, Bitner referred to "a servicescape as a man-made environment. The three dimensions of Bitner's (1992) servicescape are ambient factor, functional factor and artifact factor. Bitner (1992) suggests golf courses, hotels, restaurants, airlines as physical elements of the servicescape.

Wakefield, Blodgett (1996) focus on the fixed elements of servicescape: its architecture, landscape, and site design. They tested it in three leisure service settings: college football, minor league baseball, and casinos. This study shows that servicescape significantly affects perceived quality of the leisure service setting. Wakefield, Blodgett (1996) also develop the "sportscape" to describe the relationship between visitors' perceptions of stadium quality, revisit intentions, and their desire to stay at the stadium. They describe the importance of physical environment in professional sport facility in their study.

Wakefield and Blodgett (1999) investigate the physical environment of service delivery settings which influence customers' evaluations of service experience and subsequent behavioral intentions. They combine environmental psychology and SERVQUAL to test the tangible aspects of service delivery. Their survey was conducted at professional hockey games, a large family recreation center and in movie theaters. Researchers designed this study to learn how impacted the tangible, physical environment

play an important role in determining customers' subsequent behavior intentions in leisure service settings and especially the customers who spend a moderate amount of time in these physical environments. This study results identified managerial implications that effective design and maintenance of a tangible service environment will be helpful to one way service providers.

As mentioned before, most service quality studies in the hospitality industry adapted the SERVQUAL scale to measure the service quality. Among those SERVQUAL factors, tangibles can be used as extrinsic cues and stimuli of perception and transfer into customer behavior and emotions (Russell and Ward 1982). Also, environmental psychology implies that customers react to tangible physical environment (Wakefield and Blodgett, 1999). This study will focus on tangible aspects of service environment

Service quality in hotel industry

Knutson, Stevens, Wullaert, Patton and Yokoyama (1990) adapted SERVQUAL and developed draft of LODGSERV to define and measure service quality for the lodging industry. The final version of LODGSERV includes 26 items and five dimensions, the same as SERVQUAL. They compare use of exploratory and confirmatory factor analysis in index testing and refinement. They studied economy, mid price and luxury hotels. Knutson, Stevens, Wullaert, Patton and Yokoyama (1990) translated LODGSERV into other languages and tested it in other cultures. They conclude that an instrument of measuring service quality has to comprise statements about perceptions and the higher perception of service quality so that customers will have a greater intention to return and to recommend the hotel to others.

Saleh and Ryan (1991) identified the gaps between customers' attributes and management perceptions of attributes of the hotel. They use a threefold categorization and state the physical qualities are its rooms, reception area. They argued that these gaps will be a source of customers' dissatisfaction.

Motwani, J., Kumar, A. & Youssef, M. A. (1996) examined the implementation of quality management programs in the hospitality industry. They suggest summarizing the literature through field study, questionnaires and case studies in the hospitality industry. Also, they showed different approaches to Days Inn, Hampton Inn, Four Seasons, Hilton and Marriott. Cheung and Law (1998) suggested and Improved Service Quality Model (ISQM). This model is applicable to all hotels and hotel employees, all operational and functional departments.

Amstrong et al. (1997) use a SERVQUAL to examine the impact of expectations on service quality perceptions in Hong Kong's hotel industry. They collected cross-cultural samples of hotel guests in three large hotels. They examine the dimensions of service quality and determine and the best predictable dimension of overall service quality in hospitality industry by applying a modified version of SERVQUAL (Parasuraman et al., 1988). They develop the HOLSERV scale to measure service quality in the hospitality industry. They distinguish revised SERVQUAL (Parasuraman et al., 1991) and customized version of SERVQUAL for this study. They named it as HOLSERV. They suggested additional qualitative research to supplement HOLSERV.

Lau, Akbar and Fie (2005) use a modified version of the SERVQUAL model to access the expectations and perception of service quality in Malaysia's four- and five-star hotels. They examine the relationship between satisfaction levels and the five service

quality dimensions. They test five service quality dimensions, which are reliability, responsiveness, assurance, empathy, and tangibility.

Tangibles in the Hotel Industry

LODGSERV developed by Knutson, Stevens, Wullaert, Patton and Yokoyama (1990) uses the same 26 items and five dimensions of SERVQUAL (Parasuraman et al., 1988). Among these dimensions, tangible factors included physical facilities, equipment and appearance of personnel.

Ekinci and Riley (1999) described the use of Q-sort technique in the scale development process and take SERVQUAL format and dimensions: reliability, responsiveness, assurance, empathy, and tangibility. In their findings, the tangible dimension is revealed as a significant predictor of overall service quality. This implies that managers of the hotels should ensure that their hotel is appealing and attractive with up-to-date, clean and comfortable equipment, fixture and fittings. Knutson, Stevens, et al (1992) suggest that the tangible aspect reflects the image and price range of the property.

According to Lau, Akbar and Fie (2005), the tangible factor is the most important factor of hotel service quality. They use neat appearance of staff, availability of modern looking equipment, the physical facilities are visually appealing, material associated with service are visually appealing, availability of adequate fire and first aid facilities and instructions, free internet access service for customers, health care facilities, easily accessible reservation, quick check in/out, clean and comfortable room, and a convenient hotel location to test a modified version of the SERVQUAL model in Malaysia's four

and five star hotels. Zeithaml and Bitner (2003) stated that tangibles must be strengthened in hospitality services to induce the customer return to a facility.

Perceived Service Quality

Parasuraman et al. (1985) proposed the ten dimensions which determine service quality. They identified the differences between perceived performance and expected performance of the ten dimensions which determine overall perceived service quality. Oliver's (1980) suggested that the disconfirmation of performance from expectation is satisfaction and the disconfirmation model gave a base to Parasuraman et al.'s (1985) measurement of service quality. Parasuraman et al. (1988) conceptualized perceived quality as overall judgment, or attitude which related to the superior service. Babakus and Boller (1992) used the dimensionality of service quality to measure the different type of services. They identified that the service perceptions were measured by complaint resolutions scores through their empirical study Parasuraman et al. (1994), Bolton and Drew (1991a, 1991b), and Parasuraman et al. (1991 a, b, c) used the service quality as the discrepancy between expectation and perceptions conceptually and empirically.

Customer Loyalty

Research on loyalty has been studied as a part of consumer behavior since the 1920s (Copeland, 1927). Jacoby and Chestnut (1978) state loyalty research is one of the major interests in consumer behavior and marketing research during 1960s' and the 1970's. They found more than 300 articles employing 53 definitions of customer loyalty that have been published in the customer loyalty literature and they observed the three

approaches in loyalty research with the review. The first approach is to define and measure loyalty as a behavioral perspective (Kahn, Kalwani, and Morrison 1988), the second approach is an attitudinal perspective (Guest 1955), and the third is composite measures of combinations of behavioral measures and attitudinal components (Days, 1969).

Loyalty occurs in consumption situations. Customer loyalty has been described as the concept of repeat purchase behavior, which can be regarded as some degree of repetitive purchase of the same brand by the same buyer. Day (1969) views customer loyalty as a process which plays a special role in generating repeat patronage. Jacoby and Kyner(1973) define loyalty as a consistent and biased purchase behavior resulting from the psychological decision-making and evaluative processes. Bettencourt (1997) identifies loyalty as a customer's behavior indicator of repeat purchase and voluntary performance. Oliver (1999, p.34) described loyalty as "a deeply held commitment to re-buy or repatronize a preferred product/service consistently in the future, thereby causing repetitive same-brand or same brand-set purchasing, despite situational influences and marketing effort which having a potential to cause switching behavior". Jones & Sasser (1995) state customer loyalty measurements identify future buying intentions and secondary behavior such as customer referrals, endorsements, and spreading the word. Word of mouth advertising is a powerful marketing tools in the service industry.

Augustyn & Ho (1998) mention an old saying in the service industry. That is, if a customers like the service, they will tell "three people", but if they don't like the service, then they will tell 11 people. This shows why word of mouth is powerful in the service

industry and why customer satisfaction with service quality is important in the hospitality industry. In terms of a customer's future buying intentions, research has shown that service quality and customer satisfaction can improve customers' intentions to stay with a company. Cronin and Taylor (1992) suggested that customer satisfaction directly affects their intent to repurchase, but Bitner (1990) indicated that service quality directly affects consumers' intent to repurchase.

Conceptual Framework of the Study

The model of this study is proposed in Figure 1. This model tests the influence of service quality with the intangible aspects of service quality (i.e., reliability, responsiveness, assurance, empathy) and with the tangible aspects of physical environments (i.e., building design and décor, layout, ambience, furniture, fixture and equipment) as a direct influence on an individual's perception of service quality. This model is based on an adaptation of service quality studies in the hospitality industry which are adapted by Parasuraman et al.'s (1991) SERVQUAL measurement.

Intangible service factors are identified with reliability, responsiveness, assurance, empathy (Parasuraman, Zeithaml and Berry, 1991a, b, c). Parasuraman et al. (1991a, b) develop and test reliability as performable ability to do the promised service rightly. They measure responsiveness with willingness to help customers and provide prompt service and assurance with knowledgeable and courteous employees who can inspire customer's trust and confidence. Empathy is developed and tested by possibility of caring, individualized attention from the firm to their customers.

Jones (1984) recognize the service attributes such as number on duty, attentive, clean, smart, friendly, courteous, helpful;, efficient, attentive to details. Lewis (1985) presents service, staff attitude, and staff professionalism as intangible service quality attributes of the hotel. Especially, Lewis (1985) identifies service quality of staff as recognition of guest, friendly approach greeting, quick service relaxing and restful and ability to communicate.

As review of examples on prior research (Parasuraman, Zeithaml and Berry, 1988, 1991a, b, c; Jones, 1984; Lewis 1985), this study uses the following research questions and hypothesis:

Research question 1: Do intangible service factors have an effect on perceived intangible service quality?

H1-1: Reliability has an effect on perceived intangible service quality.

H1-2: Responsiveness has an effect on perceived intangible service quality.

H1-3: Assurance has an effect on perceived intangible service quality.

H1-4: Empathy has an effect on perceived intangible service quality.

Tangibles including physical environment and servicescape of service delivery settings influence customers' evaluations of service experience. The relationship between the physical environment and customers' perception of the environment is described by environmental psychology which physical environment influences people's cognition, emotion, and behavior (Mehrabian and Russell, 1974; Russell and Ward, 1982; Bitner, 1992).

Based on prior research (Parasuraman, Zeithaml and Berry, 1988; 1991a, b, c; Bitner, 1992; Wakefield & Blodgett, 1996) the following research question and hypotheses will be examined:

Research question 2: Do tangible service (physical environment) factors have an effect on perceived tangible service quality?

H2-5: Space and function have an effect on perceived tangible service quality.

H2-6: Ambient conditions have an effect on perceived tangible service quality.

H2-7: Signs, symbols, and artifacts have an effect on perceived tangible service quality.

Also based on previous intangible and tangible service quality research (Parasuraman, Zeithaml and Berry, 1988; 1991a, b, c; Bitner, 1992; Wakefield & Blodgett, 1996)) this study uses the following research question and hypotheses:

Research question 3: Does the perceived intangible and tangible service quality have a effect on overall perceived service quality?

H3-8: Perceived intangible service quality have an effect on overall perceived service quality.

H3-9: Perceived tangible service quality have an effect on overall perceived service quality.

Customer loyalty has been viewed as one the various behavioral consequences of service quality (Zeithaml 2000). Customer loyalty as a behavior intention after the performance of s service is related to perceptions of quality (Rust and Zahorik 1993). The significant impact of service quality on specific behavioral intentions has been examined through several studies: (1) consumer willingness to recommend the

company (Parasuraman, Zeithaml, and Berry 1991a, b, c; Parasuraman, Zeithaml and Berry 1988; Zeithaml, Berry and Parasuraman 1996) (2) repurchase intention (Boulding, et al. 1993; Zeithaml, Berry, and Parasuraman 1996) and (3) willingness to pay a price premium to the company (Zeithaml, Berry and Parasuraman 1996).

Based on prior research (Parasuraman, Zeithaml and Berry, 1988; 1991a, b, c; 1996; Rust and Zahorik 1993; Zeithaml 2000), the following research question and hypotheses are proposed:

Research question 4: Does the perceived service quality have an effect on customer loyalty?

H4-10: Perceived intangible service quality have an effect on customer loyalty.

H4-11: Perceived tangible service quality have an effect on customer loyalty.

Figure 1. The conceptual framework of this study

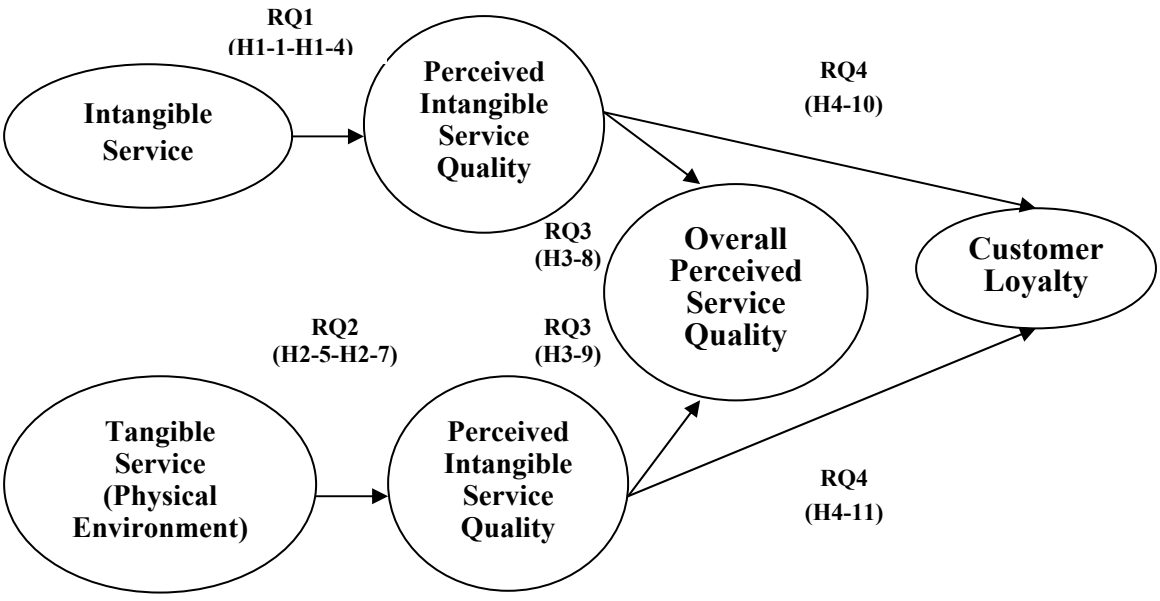
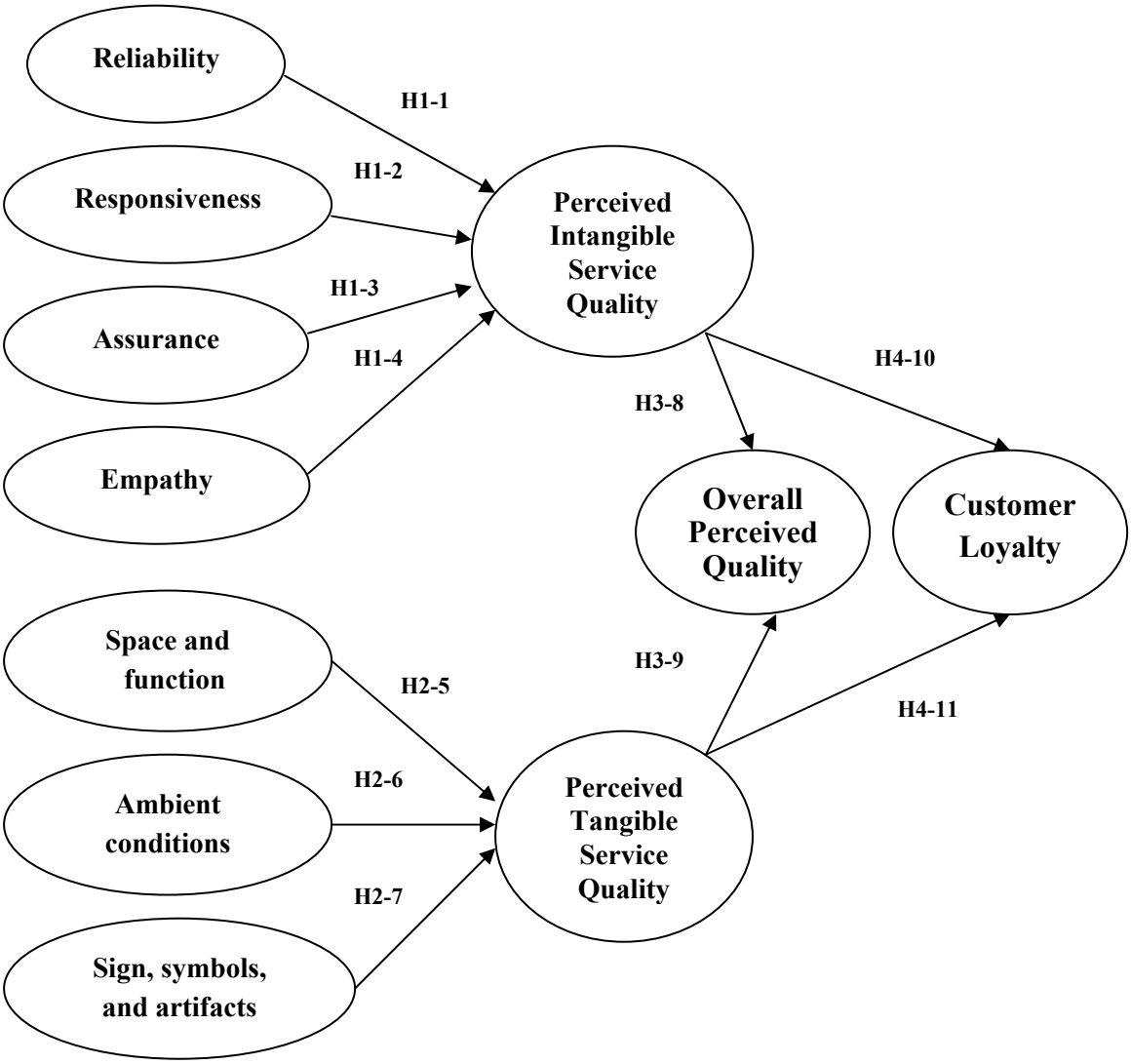


Figure 2. The research model of this study



CHAPTER III

METHODOLOGY

Research Design

The study tested the research model. The research questions and hypotheses which are suggested in Chapter 2 were examined to discuss the relationships among the components of the research framework. To achieve the stated objectives and to test hypotheses, a research analysis framework is designed.

The research framework is developed to ensure analysis of the conceptual framework of this study (see Figure 1). Previous studies of the components and characteristics of intangible service (Parasuraman, Zeithaml and Berry, 1988, 1991a, b, c) and tangible service (Wakefield & Blodgett, 1996; Bitner, 1992) form the theoretical basis for this study. A questionnaire will be based on these theories.

The Survey Instrument

A four-section self-administered questionnaire was developed. The first section of the questionnaire identifies the intangible and tangible service, including physical environment, in the public space of a hotel. Respondents were asked to express their opinion on the intangible and tangible service quality attributes on a seven-point Likert

scale, ranging from "strongly disagree-(1)" to "strongly agree-(7)." To create a list of intangible and tangible service quality attributes for the questionnaire, previous intangible and tangible service quality studies were reviewed. Frequently used attributes in intangible and tangible service quality studies (Parasuraman, Zeithaml and Berry, 1988, 1991a, b, c; Wakefield & Blodgett, 1996; Bitner, 1992) were referenced.

Similarly, the second section of the questionnaire identifies intangible and tangible service, including physical environment in a guest room. Again, respondents were asked to express their opinion on the tangible service quality attributes on a seven-point Likert scale ranging from "strongly disagree-(1)" to "strongly agree-(7)."

The third section of the questionnaire is designed to identify perceived overall service quality and customer loyalty. Respondents will be asked to express their opinion on the perceived service quality and customer loyalty attributes on a seven-point Likert scale ranging from "terrible-(1)" to "great-(7)," "Strongly disagree-(1)" to "Strongly agree-(7)". To create a list of perceived overall service quality and customer loyalty attributes for the questionnaire, previous perceived service quality studies were reviewed and frequently used attributes in perceived service quality and customer loyalty studies (Parasuraman, Zeithaml and Berry, 1988, 1991a, b, c; Wakefield & Blodgett, 1996; Bitner, 1992; Jones & Sasser, 1995) were referenced.

The fourth section of the questionnaire is designed to obtain personal information concerning the demographic characteristics of respondents including gender, place of residence, ethnic background, age, number of visits to hotels in the past year, annual household income, education completed, and marital status.

The English questionnaire was translated into Korean by the researcher. The Korean format questionnaire was then translates back to English to ensure consistency by a Korean professor. Both English and foreign versions of the questionnaire were distributed to the sample. They then had an option to choose the language of preference to complete the survey. See Appendix A for the English version of the cover letter, Appendix B for the English version of the questionnaire, and Appendix C for the Korean version of the letter and questionnaire.

Population and Sample Plan

Population

The research hypotheses need to be tested via surveys. The population for this study is guests who spent at least one night in "A" Hotel in Busan from June 1 to July 15, 2006. The name of the hotel can't be mentioned due to its privacy requirements.

"A" is a deluxe hotel in Busan, the second largest city in Korea. It was built in the late 1980's and is comprised of 10 floors with more than 300 guest rooms. The average number of guests checking out is approximately 200 a day. The average occupancy rate per year of the "A" Hotel in Busan is 70%.

Sample

This study used convenience sampling. An attempt was made to distribute the survey questionnaire to every guest when they checked in the hotel. Hotel guests were asked to return the questionnaires after completion in a locked box at the front desk when they checked out.

Sample size

Determining sample size is a very important because samples that are too large may waste time, resources and money, while samples that are too small may lead to inaccurate results.

According to Burns and Bush (1995), in order to calculate the proper sample size for a survey, the confidence interval approach should be used.

The formula is:

$$n=Z^2_{\text{c.l.}}\, pq/E^2$$

n = number of items in sample

$Z_{\text{c.l.}}$ = confidence interval in standard error units

P = estimated proportion of successes

q = (1- p), or estimated proportion of failures

E = maximum allowance for error between the true proportion and sample proportion

To calculate sample size, if a researcher believes a simple random sample will show that 50 percent of respondents (p) will answer the research survey, and the researcher wishes to estimate with 95 percent confidence, ($Z_{\text{c.l.}}$=1.96) that allowance for sampling error will not be greater than 5 percent(E). Substituting these values into the formula, the response size is 384

$$n=Z^2_{\text{c.l.}}\, pq/E^2 = (1.96)^2(0.5)(0.5)/(0.05)^2 = 384$$

To allow for about 80% refusal and wastage, in this study the sample size is determined to be 1920.

Data collection

The data collection team was led by the researcher, who had a meeting with the front desk employees of the "A" hotel to go over details on background of the survey and instructions for questionnaire distribution and collection. Data collection was done from June 1 to July 15, 2006.

Data collection was conducted at the front desk of "A" hotel where the hotel guests check in and out. Front-desk employees distributed the survey questionnaires to every guest and collected the completed surveys. Front desk employee provided a survey package which included both English and Korean versions of the questionnaire and a returning envelope. Hotel guests were asked to return the questionnaires after completion to a secured box at the front desk. For those who did not participate in a survey, front-desk employees encouraged them to pick up the questionnaire and complete it before leaving the hotel.

A total 10,740 survey packages were distributed by front-desk employees. Front desk employee provided a survey package to the 'A' hotel guests when they checked in. The average occupancy rate during the time from June 1 to July 15, 2006 was 80%. Seven hundred twenty three completed surveys were returned to researchers, representing response rate of 6.73% and 9 questionnaires were eliminated due to an excessive amount

of missing data. After elimination, seven hundred fourteen surveys were used for final analysis (6.65%).

Measurement and Instrument

Kotler, Bowen & Makens, (1998) stated that hotel managers need to think about four levels of hotel products. Those are the core product, the facilitating product, the supporting product, and the augmented product. Core product is the core benefit to the customer and is regarded as the most basic product of the hotel. Facilitating products are services or goods that are presented when the hotel customers use the core product of the hotel. Supporting products are extra products which are not required by core products. They only add value to the core product and differentiate it from the competition.

The Augmented products are accessibility, atmosphere, customer interaction with the service organization, customer participation, and customers' interaction with each other. Augmented products are provided by combination with the core, facilitating, and supporting products.

This study focuses on core products and facilitating products. The reasons are that supporting products are not required by core products, and augmented products are melded in the core products and facilitating products because they are provided by combination with the core and facilitating products. Kotler, Bowen & Makens, (1998) suggested the core product could be a focused business. This means the core product could be the reason for being a hotel for the hotel management. Also, facilitating products are essential to provide the core product to the target market.

Services, facilitating products, may vary in number in a first class corporate hotel. They include guest room check-in and check out service, telephones, a restaurant, and valet service, for instance. But facilitating products are limited in an economy hotel, such as no more than check-in and check-out service and public phones on the property.

Based on Kotler, Bowen & Makens, (1998)'s idea of core products and facilitating products of the hotel management; he instrument used in this study focused on the hotel guest room and hotel public space. Regardless of the hotel grade, the two spaces; hotel guest room and hotel public space are essential parts of the hotel business.

In this study, perception of tangible and intangible service quality and customer loyalty were measured by the survey instrument. The design of the questionnaire was based on multiple-item measurement scales that had been used in previous research. A multi-item approach was chosen to measure tangible, intangible and customer loyalty constructs. One item was used to measure perceived tangible and intangible service quality and overall perceived service quality. Seventy eight measures were used to capture the various latent constructs. The items in all scales were measured on a 7-point, Likert–type scale anchored from 1 (strongly disagree or terrible) to 7 (strongly agree or great).

Based on the review of the literature, twenty nine items were developed to measure the tangible service of hotel public spaces. Those questions are

Q1. The overall lighting level in this hotel environment is appropriate.

Q2. The temperature in this hotel is comfortable.

Q3. The aroma in this hotel makes me feel good.

Q4. The background music played overhead makes this hotel a more enjoyable place.

Q5. This hotel's architecture gives it an attractive character.

Q6. This hotel is decorated in an attractive fashion.

Q7. This is an attractive hotel.

Q8. The use of color in the décor scheme adds excitement to this hotel's environment.

Q9. The bright and colorful electric signs add excitement to this hotel's environment.

Q10. The wall treatments of this hotel's environment are attractive (curtain, paper, paint, etc.).

Q11. The floor treatments of this hotel's environment are attractive (tile, wood, carpeting, etc.).

Q12. The interior décor of this hotel is attractive.

Q13. Employee's uniforms are attractive.

Q14. The layout of this hotel public space's floor allows a person to easily see across it.

Q15. I enjoy spending time at this hotel.

Q16. In this hotel, the aisles between the furniture are wide enough to pass through easily.

Q17. The signs in this hotel's environment provide adequate direction.

Q18. It is easy to walk around this hotel public space's environment and find what you are looking for.

Q19. The amount of furniture does not make this hotel public space's environment difficult to navigate.

Q20. This hotel public space's layout makes it easy to get the service you want.

Q21. This hotel public space's layout makes it easy to get to your room.

Q22. This hotel's layout makes it easy to get to another place.

Q23. Overall, this hotel public space's layout makes it possible to get to a desired place.

Q24. The audio/video machines in public space make this hotel interesting.

Q25. This hotel has high quality audio/video machines.

Q26. This hotel maintains clean public restrooms.

Q27. This hotel maintains clean public customer service areas.

Q28. This hotel maintains clean walkways and exits.

Q29. This hotel public space's environment is clean.

The four questions which were developed to measure the intangible service of hotel public spaces are

Q30. Employees in this hotel's public environment are polite and courteous.

Q31. Employees in this hotel display personal warmth in their behavior.

Q32. Employees respond to customer requests quickly.

Q33. Prompt service is important to employees at this hotel.

Twenty seven items were developed to measure the tangible service of hotel guest room. The questions are

Q34. The overall lighting level in your hotel guest room is appropriate.

Q35. The temperature in your hotel guest room is comfortable.

Q36. The aroma in your hotel guest room makes me feel good.

Q37. Your hotel guest room is decorated in an attractive fashion.

Q38. You are attracted to your hotel guest room.

Q39. The use of color in the décor scheme adds excitement to your hotel guest room's environment.

Q40. The bright and colorful electric signs add excitement to your hotel guest room's environment.

Q41. The wall treatments of your hotel guest room are attractive (curtain, paper, paint, etc.).

Q42. The floor treatments of your hotel guest room are attractive (tile, wood, carpeting, etc.).

Q43. The interior décor of your hotel guest room is attractive.

Q44. Employee's uniforms are attractive (House keeper, Room service man, etc.).

Q45. In your hotel guest room, the aisles between the guest rooms are wide enough to pass through easily.

Q46. The amount of furniture in your hotel guest room does not make it difficult to navigate.

Q47. Your hotel guest room's layout makes it easy to get the service you want.

Q48. Your hotel guest room's layout makes it easy to get to another place.

Q49. Overall, your hotel guest room's layout makes it possible to get to a desired place.

Q50. The audio/video machines make your hotel guest room interesting.

Q51. The audio/video machines add excitement to the place.

Q52. The audio/video machines are entertaining to watch.

Q53. Your hotel guest room has high quality audio/video machines.

Q54. The furniture in your hotel guest room is comfortable.

Q55. The electric equipment in your hotel guest room is convenient.

Q56. The arrangement of furniture, fixtures and electric equipment in your hotel guest room provides plenty of space.

Q57. Your hotel maintains clean guest room.

Q58. Your hotel guest room maintains clean customer service areas (mini bar, guest laundry room, vending machines including ice machine area).

Q59. Your hotel guest room maintains clean walkways, entrances, and balcony

Q60. Your hotel guest room's environment is clean.

Four items were developed to measure the intangible service of hotel guest room. The questions are

Q61. Employees in this hotel guest room's environment are polite and courteous.

Q62. Employees in this hotel guest room display personal warmth in their behavior.

Q63. Employees respond to customer requests quickly.

Q64. Prompt service is important to employees at this hotel guest room

All the items which related to hotel public spaces and hotel guest rooms are measured on a 7-point, Likert–type scale anchored from 1 (strongly disagree) to 7 (strongly agree).

To measure perceived tangible and intangible service quality, the questions of 'how about the tangible service quality of this hotel?' and 'how about the intangible service quality of this hotel?' is asked to respondents. The question of 'how about the overall

quality of this hotel?' also asked to all respondents to measure the overall perceived service quality. These items were also measured by a 7-point, Likert–type scale anchored from 1 (terrible) to 7 (great).

Eleven items were developed to measure the customer loyalty. The questions are

Q68. I say positive things about this hotel to other people.

Q69. I would to recommend this hotel to the other people

Q70. I intend to continue doing business with this hotel over the next few years.

Q71. I encourage friends and relatives to do business with this hotel.

Q72. I really like doing business with this hotel.

Q73. I try to use this hotel every time I need hotel services.

Q74. I consider this hotel to be my first choice when I need hotel.

Q75. If I have chance, I want to stay this hotel again

Q76. I consider my self to be a loyal customer of this hotel.

Q77. Overall, I am very loyal to this hotel.

Q78. I recommend this hotel whenever anyone seeks my advice.

Data Analysis

Collected data were coded in a formal coding sheet. Data were entered into the statistical package for social sciences (SPSS) 10.0 program and all the analyses were performed with the SPSS program. To achieve the stated objectives and to test the hypotheses, descriptive statistics, factor analysis, and regression analysis were used.

Descriptive statistics were used to determine mean and standard deviation scores on perceived service quality attributes. A frequency analysis was conducted for all the

questions to examine the distribution of the responses. In addition, hotel guests' demographic information was analyzed. Factor analysis and regression were also used to test research hypotheses in this study.

Descriptive statistics

Descriptive statistics are used to consolidate the data to determine mean and standard deviation of the attributes of intangible service, tangible service, perceived service quality and customer loyalty. A frequency analysis is conducted to examine the distribution of respondents' demographic profiles.

Factor analysis

Factor analysis is an independence multivariate analysis method to reduce a large number of variables and to find a small number of factors which are explained by their common interrelation. The main assumption of factor analysis is that there are underlying patterns of a few relationships among a large set of variables. Its main purpose is to gather this large set of variables into homogeneous composites of all the important variables in the larger set, so that each composite variable represents a number of other variables. The operating principle is that a number of variables mean the same thing to a respondent along one underlying dimension (Lewis 1984). Common factor analysis (CFA) and principal component analysis (PCA) are methods of extracting factors (Hair et al., 1998). Common factor analysis (CFA) is used to identify underlying factors using only the shared or common variance and also regarding communalities. Principal component analysis (PCA) is used to summarize most of the variance in a minimum

number of factors for prediction purposes. And it is also used to consider the total variance. By comparing these two methods, principal component analysis (PCA) is chosen to summarize most of the variance in a minimum number of factors for prediction purposes.

Kaiser-Meyer-Olkin (KMO) and Bartlett' test of sphericity are used for the validity proof of factor analysis. In addition, the measurement of KMO MSA (measure of sampling adequacy) is used to test the appropriateness of selected variables as a factor for analysis. The accepted value for KMO MSA should be above 0.50, which means it gives a good indication that reliability the relationships between pairs of correlations and would produce multiple underlying dimensions.

The data matrix has sufficient correlations to justify the application of factor analysis. In this study, factor analysis is implemented to discover the underlying dimensions of tangible service attributes in hotel public space and hotel guest room, and customer loyalty. The principal-component method and varimax rotation are used. The appropriateness of factor analysis will be assessed by correlation, measures of sampling adequacy (MSA), and Cronbach's reliability alpha. Rotation of factors could be either orthogonal (if factors are uncorrelated), or oblique (if factors are correlated). The criteria for the number of factors to be extracted are based on eigenvalue, percentage of variance explained, and significance of factor loading. When a factor loading is equal to or greater than 0.4, the variable is considered to be practically significant and included in a factor (Hair et al., 1998). According to Hair et al. (1998), summated scales are preferred to factor scores for subsequent measurement error. The major difference of summated scales and factor scores is that the factor score is computed based on the factor loadings of all

variables on the factor, whereas the summated scale is calculated by combining only selected variables.

Regression analysis

Simple and multiple regression analysis are employed to determine the relative impact of intangible service factors and tangible service factors on perceived service quality, and perceived intangible service quality and perceived tangible service quality on customer loyalty. Regression analysis is a statistical technique to analyze the relationship between a dependent variable and a set of independent variables. Unlike correlation analysis, regression analysis also describes the nature of the relationship. Regression analysis provides measurements of the accuracy of the predictors, based on the explained variance, and measures the importance of the predictor variables that is, independent variables in explaining the variance in the criterion variable that is, dependent variable.

Assumptions in multiple regression analysis include linear relationship, constant variance of the error terms (homoscedasticity), independence of the error terms (uncorrelated), and normality of the error term distribution. These assumptions are detected by residual plots, Levene's test, and Kolmogorov –Smirnov test.

According to Hair et al (1998), multiple R and R square are used to assess overall model fit. Multiple R is the correlation coefficient for the simple regression of X and the dependent variable Y. R-square is the correlation coefficient squared, also referred to as the coefficient of determination. This value indicates the percentage of total variation of Y which explained by X. Another measure of the accuracy of predictions is the standard error of the estimate which is the square root of the sum of the squared errors divided by

the degrees of freedom. It represents an estimate of the standard deviation of the actual dependent values around the regression line.

According to Hair et al. (1998), several measures need to be defined for each variable in the equation. Those are the regression coefficient, the standard error of the coefficient, and the t value of variables in the equation. The beta value is the value calculated from standardized data. The beta value allows us to compare the effect of one independent variable on Y to the effect on Y of other independent variables at each stage. The standard error of the coefficient is the standard error of the estimate of b value. It is an estimate of how much the regression coefficient will vary between samples of the same size taken from the same population. The t-value of variables in the equation, measures the significance of the correlation of the variable reflected in the regression coefficient. Correlation and t values are available to assess their potential contribution as for variables which are not in the equation (Hair et al., 1998).

In this study, two items such as perceived service quality and customer loyalty were used as dependent variables in the regression models.

The regression model is proposed as follows:

$$\hat{Y}_i = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \cdots + \beta_n X_n$$

Where,

$\hat{Y}_i$ dependent variables (Y_1: perceived service quality, Y_2: customer loyalty)

β_0 constant (coefficient of intercept)

$\beta_1 \cdots \beta_n$ regression coefficients of the latent factors

$X_1 \cdots X_n$ latent factors

The variance inflation factor (VIF), and condition index are used assess variable collinearity. These values indicate the degree to which each independent variable is explained by the other independent variables. Tolerance is the amount of variability of the selected independent variable not explained by the other independent variables. Thus very small tolerance values and large VIF values denote high collinearity. The degree of variable collinearity is considered acceptable with the variance inflation (VIF) less than 10, and the condition indices less than 30 (Belsley, 1994).

IRB approval

Oklahoma State University (OSU) guided all OSU faculty, staff or students who conducted all human subject research activities must be reviewed and approved by the OSU Institutional Review Board (IRB). The completed application which including original signatures of all PI's and advisors, proposal, questionnaire, and Informed consent/assent forms was submitted to the office in May 3, 2006 and finally approved in May 25, 2006 (Appendix D).

CHAPTER IV

RESULTS OF DATA ANALYSIS

This chapter describes the results of the data analysis. It describes the demographic information, statistics pertaining to the research questions, and hypotheses tests corresponding to each research question.

Characteristics of the Responses

The respondents consisted of 362 male respondents (50.7%) and 352 female respondents (49.3%). Rankings in age groups, 29.8% of the respondents were 38-47 followed by 27% of 18-27, 21% of 48-57, and 14.6% of 28-37. Asian group led the ethnic group with 90.5%, followed by 3.5% - South America, 2.2% - Europe, and 1.8% - North America. Concerning the annual household income, 26.5 % were within the range of $35,001 to $50,000 followed by 20.6% - $65,001 to $80,000, 19.6% - $50,001 to $65,000 and 18.5% - under $35,000. In education, 38.2% had completed post-graduate, 24.5% - college/university graduate and 13.7% - some college or trade school degree. The purpose of visitation/travel, 76.3% were on leisure and business related

Table 4-1 Demographic characteristics of respondents

Characteristics	Categories	N	%
Gender	Male	362	50.7
	Female	352	49.3
Current residency	North America	13	1.8
	South America	25	3.5
	Europe	16	2.2
	Australia	4	0.6
	Asia	646	90.5
	Others	10	1.4
Age	18-27	193	27.0
	28-37	104	14.6
	38-47	213	29.8
	48-57	150	21.0
	58-67	48	6.7
	Over 68	6	0.8
Visiting a hotel per year	1-2	303	42.5
	3-4	203	28.5
	5-6	108	15.1
	7-8	48	6.7
	9-10	27	3.8
	Over 10	24	3.4
Annual Household income	Under $35,000	132	18.5
	$35,000-$50,00	189	26.5
	$50,001-$65,000	140	19.6
	$65,001-$80,000	147	20.6
	$80,001-$100,000	69	9.7
	Over $100,000	36	5.0
Education	Grade school or less	7	1.0
	Some high school	1	0.1
	High school graduate	71	9.9
	Some college or trade school	98	13.7
	College/univ. graduate	175	24.5
	Post-graduate work	273	38.2
	Prefer not to answer	89	12.5
Marital status	Single	247	34.6
	Married	422	59.1
	Divorced	25	3.5
	Widowed	7	1.0
	Separated	13	1.8
Purpose of this travel	For business	188	26.3
	For leisure	214	30.0
	For leisure and business	143	20.0
	To join a convention	16	2.2
	Visit relatives	13	1.8
	Others	140	19.6

Factor analysis

To assess the validity and reliability of each constructed dimension of tangible, intangible service and customer loyalty, factor analysis and reliability tests were initially used. Exploratory factor analysis was used to determine how many factors were appropriate and which items belonged together. The results of the factor analysis produced a clean factor structure with high reliability loading on the factors. Most variables loaded heavily on one factor and this confirmed that there was minimal overlap among factors and that all factors independently structured. Cronbach's measure reliability coefficient was first calculated for the items of each construct. When it reached 0.70, the cutoff level of reliability recommended for theory testing research (Nunnally, 1967), the items that did not significantly contribute to the reliability were eliminated for parsimony purpose.

Prior to using the regression analysis, the 29 determinants of tangible service factors in hotel public space, 27 determinants of tangible service factors in hotel guest room and 11 determinants of customer loyalty of the hotel were factor analyzed using principal component analysis with orthogonal varimax rotation in order to identify the structure of tangible service factors in hotel public space, guest room, and customer loyalty.

Table 4-2, 4-3 and 4-4 presents results of which determinants were important to explain the total variances in all the variables and the relevant key word to the questions in the questionnaire. As a result, 27 items were retained for the tangible service construct in public space of the hotel. Three factors were retained for tangible service in public spaces, and for guest rooms, and the factor names for each were developed based on the

constructs in previous research (Bitner, 1992; Baker and Cameron, 1996; Wakefield and Blodgett, 1996; Wakefield and Blodgett; 1999). Fifteen items were retained in one factor and named as facility signs, symbols and artifacts, 8 items were retained in one factor and named as facility space / function, and 4 items were retained in one factor and named as facility ambient condition. They were retained as tangible service factors about the hotel public spaces. See table 4-2 for details.

Table 4-2 Result of factor analysis and reliability for the tangible service construct of public space of the hotel

Factor Name	Attributes	Factor Loading	Commu -nality	EV	% Of Variance	Cronbach's Alpha(α)
Facility Signs, Symbols &Artifacts	Q6 Attractive Decoration	.721	0.629	7.33	27.13	.9413
	Q7 Attractiveness	.712	0.612			
	Q3 Aroma	.702	0.603			
	Q8 Color	.699	0.577			
	Q9 Colorful Electronic Signs	.678	0.555			
	Q5 Attractive Architecture	.677	0.559			
	Q10 Wall Treatment	.652	0.586			
	Q11 Floor Treatment	.615	0.552			
	Q15 Enjoy Spending Time	.614	0.601			
	Q2 Temperature	.611	0.469			
	Q4 Music	.610	0.569			
	Q12 Interior Décor	.606	0.572			
	Q1 Lighting	.568	0.544			
	Q14 Layout to Easily See	.566	0.586			
	Q13 Attractive Uniform	.524	0.491			
Facility Space /Function	Q23 Overall Layout	.707	0.693	5.38	19.92	.9060
	Q22 Layout to Get to Another Place	.693	0.696			
	Q21 Layout to Get to Your Room	.683	0.645			
	Q18 Easy to Walk to Find	.638	0.564			
	Q19 The Amount of Furniture	.625	0.588			
	Q20 Layout to Get the Service	.597	0.564			
	Q17 Signs to Provide Direction	.561	0.537			
	Q16 The Wide Enough Aisles	.541	0.562			
Facility Ambient Condition	Q26 Clean Restrooms	.824	0.843	3.91	14.49	.9301
	Q28 Clean Walkways	.815	0.814			
	Q27 Clean Service Areas	.796	0.824			
	Q29 Clean Environment	.744	0.781			

23 items were retained for the tangible service construct in hotel guest room. 12 items were retained in one factor and named as room signs, symbols &artifacts, 7 items were retained in one factor and named as room space/function, and 4 items were retained in one factor and named as room ambient condition. They were retained as tangible service factors about the hotel guest room. See table 4-3 for details.

Table 4-3 Result of factor analysis and reliability for the tangible service construct of hotel guest room

Factor Name	Attributes	Factor Loading	Commu -nality	EV	% Of Variance	Cronbach's Alpha(α)
Room Signs, Symbols &Artifacts	Q43 Floor Treatment	.742	0.680	6.85	29.79	.9424
	Q44 Interior Décor	.726	0.661			
	Q41 Colorful Electronic Signs	.713	0.671			
	Q38 Attractive Decoration	.707	0.667			
	Q40 Color	.690	0.652			
	Q39 Attractiveness	.675	0.666			
	Q42 Wall Treatment	.665	0.635			
	Q37 Aroma	.651	0.637			
	Q35 Lighting	.583	0.549			
	Q45 Attractive Uniform	.522	0.522			
	Q47 The Amount of Furniture	.486	0.587			
	Q46 The Wide Enough Aisles	.473	0.558			
Room Space /Function	Q53 Machines are Entertaining	.774	0.736	3.84	16.68	.7993
	Q52 Machines Add Excitement	.746	0.721			
	Q51 Machines Make Interesting	.627	0.398			
	Q54 High Quality Machines	.578	0.630			
	Q49 Layout to Get Another Place	.483	0.609			
	Q50 Overall Layout	.461	0.579			
	Q48 Layout to Get a Service	.455	0.534			
Room Ambient Condition	Q59 Clean Service Area	.824	0.845	4.22	18.37	.9268
	Q61 Clean Environment	.765	0.802			
	Q58 Clean Maintains	.757	0.784			
	Q60 Clean Walkways, Entrance, Balcony	.753	0.791			

To test research question two, facility space / function factor, and room space / function factor were used together to test hypothesis 2-5 'Space and function have an effect on perceived tangible quality' and named space / function factor. Facility ambient condition and room ambient condition were used together to test hypothesis 2-6 'Ambient conditions have an effect on perceived tangible quality' and named ambient condition factor. Facility signs, symbols and artifacts factor and room signs, symbols & artifacts factor were used together to test hypothesis 2-7 'Signs, symbols, and artifacts have an effect on perceived tangible quality' and named signs, symbols and artifacts factor. See table 4-4 for details. Eleven items were retained for the customer loyalty. See table 4-5 for details.

Table 4-4 Result of factor analysis for the tangible service construct of the hotel

Category	Factor Name
Signs, Symbols &Artifacts	Facility Signs, Symbols &Artifacts
	Room Signs, Symbols &Artifacts
Space / Function	Facility Space / Function
	Room Space / Function
Ambient Condition	Facility Ambient Condition
	Room Ambient Condition

Table 4-5 Result of factor analysis and reliability for customer loyalty

	Attributes	Factor Loading	Commu -nality	EV	% Of Variance	Cronbach's Alpha(α)
Customer Loyalty	Q72 Really Like Doing Business	.860	0.739	7.463	67.849	.9517
	Q69 Recommendation	.855	0.731			
	Q71 Encourage Friends and Relatives	.849	0.721			
	Q78 Recommendation to Anyone	.848	0.719			
	Q70 Continue to Doing Business	.835	0.698			
	Q73 Try to Use Every time	.835	0.697			
	Q75 Stay Again	.834	0.696			
	Q74 Consider First	.825	0.681			
	Q76 Consider Myself As a Loyal Customer	.778	0.606			
	Q77 Overall Very Loyal	.770	0.593			
	Q68 Say Positive Thing	.764	0.583			

The results of factor analysis are presented in table 4-2, 4-3, and 4-5. The validity of factor analysis for the 27 tangible service attributes of hotel public space, the test statistic for sphericity is also large (14238.078) which is statistically significant at 0.001. The Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy of tangible factors of hotel public space is .948. Thus, it is acceptable. For the 23 tangible service attributes of hotel guest room, the test statistic for sphericity is also large (12531.768) which is statistically significant at 0.001. The Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy of tangible factors of hotel public space is .954. Thus, it is acceptable. Table 4-6 shows the validity of factor analysis

Table 4-6 Validity of factor analysis

Dimension	Factors	KMO MSA (Kaiser-Meyer-Olkin measure of sampling adequacy)	Bartlett' test of sphericity	Sig
			Approx. Chi-Square	
Tangible Factors of Hotel Public Space	Facility Signs, Symbols &Artifacts	.948	14238.078	.000
	Facility Space/Function			
	Facility Ambient Condition			
Tangible Factors of Hotel Guest Room	Room Signs, Symbols &Artifacts	.954	12531.768	.000
	Room Space/Function			
	Room Ambient Condition			

Research Question One Testing

A summary of the results of all the hypothesis tests is presented in Table 4-18.

Research Question One proposes that intangible service factors have an effect on perceived intangible service quality. To get the answer for research question one, four hypotheses were developed based on the previous research. To test four kinds of hypotheses, regression analysis was used to determine the impact of intangible service factors on the perceived intangible service quality.

The intangible service factors are reliability, responsiveness, assurance and empathy (Parasuraman et al., 1988). Parasuraman et al. (1988) proposed 'reliability' is the ability to perform the promised service accurately and dependently and 'responsiveness' is the willingness to help customers and to provide prompt service. They also proposed 'assurance' is the knowledge and courtesy of employees and their ability to convey trust and confidence, and 'empathy' is the caring, individualized attention

provided to the customer. Based on previous research, for research question one, the reliability factor was measured using the question are "employees in this hotel public spaces and guest rooms respond to customer requests quickly". The Responsiveness factor was measured using the question "prompt service is important to employees at this hotel public space and guest room". The assurance factor was measured using question "employees in this hotel public space and guest room's environment are polite and courteous. The empathy factor was measured using the question "employees in this hotel public space and guest room display personal warmth in their behavior".

The independent variable was seven point of scale of the intangible service factors of the hotel. The scales are as follows: "strongly disagree" is coded as "1" and "strongly agree" is coded as "7". The dependent variable was the seven point scale of the perceived intangible service quality of the hotel. The scales are as follows: "terrible" is coded as "1" and "great" is coded as "7".

The four tested hypotheses are

H1-1: Reliability has an effect on perceived intangible quality.

H1-2: Responsiveness has an effect on perceived intangible quality.

H1-3: Assurance has an effect on perceived intangible quality.

H1-4: Empathy has an effect on perceived intangible quality

Hypothesis one – one testing

H_0 1-1: Reliability has no effect on perceived intangible quality.

H_a 1-1: Reliability has an effect on perceived intangible quality.

To test hypothesis 1-1, multiple regression was used. The results of the regression of independent variable "reliability" with the dependent variable "perceived intangible service quality" are listed in table 4 - 7. The regression equation of "perceived intangible service quality which effected by "reliability" indicated an adjusted R^2 of .376. This indicates that almost thirty eight percent of the variation in "perceived intangible service quality which effected by reliability" was explained by this equation. The F- ratio of 214.475 was significant (p=.000), indicating that the results of the equation hardly could have occurred by chance. All of the tests were satisfied and there was no significant violation of the assumptions and outliers found in the model. The degree of variable collinearity is considered acceptable with the variance inflation (VIF) less than 10, and the condition indices less than 30 (Belsley, 1984). Indications show that there was no variable collinearity in the model

The result of the regression analysis of reliability affecting perceived intangible service quality showed that reliability was associated with perceived intangible service quality in the hotel. B is meaningful to interpret the regression coefficient. B is used to interpret the units of the measures used and it is the means of the variables involved β. β is the hypothesized regression coefficient. When using standardized data, the regression coefficients (B) are known as beta (β) coefficient which allows comparing directly the relative effect of each independent variable on the dependent variable and standardized regression coefficient allows for direct comparison between coefficients as to their relative explanatory power of the dependent variable. The standardized β coefficient corresponds to a significance of a B in a multiple regression equation. The standardized

coefficient β was used to indicate the impact. The results predicted the probability of perceived intangible service quality in hotel according to reliability.

Table 4 - 7 shows the regression result of reliability effect on the perceived intangible service quality.

Table 4 - 7 regression results of reliability effect on perceived intangible service quality (N=714)

I. V.	measurement	D. V	B	β	T	Sig.	VIF	C.I
Reliability	Reliability in hotel public space	perceived intangible service quality	.233	.278	7.776	.00	1.46	10.29
	Reliability in hotel guest room		.336	.414	11.568	.00	1.46	11.3
R^2 = .378 Adjusted R^2=.376 D.F.=712 F=245.475 significant at .000								

I. V.: Independent variables D. V.: Dependent variable C.I: Condition index

P<.05

Based on these results, the null hypothesis 1 –1 is rejected. Then, it is concluded that reliability has an effect on perceived intangible quality.

Hypothesis one – two testing

H_0 1-2: Responsiveness has a no effect on perceived intangible quality.

H_a 1-2: Responsiveness has an effect on perceived intangible quality.

To test hypothesis 1-2, multiple regression was used. The results of the regression of independent variable "responsiveness" with the dependent variable "perceived intangible service quality" are listed in table 4 - 8. The regression equation of "perceived intangible service quality which effected by "responsiveness" indicated an adjusted R^2

of .321. This indicates that almost thirty two percent of the variation in "perceived intangible service quality which effected by responsiveness" was explained by this equation. The F- ratio of 169.042 was significant (p=.000), indicating that the results of the equation hardly could have occurred by chance. All of the tests were satisfied and there was no significant violation of the assumptions and outliers found in the model. The degree of variable collinearity is considered acceptable with the variance inflation (VIF) less than 10, and the condition indices less than 30 (Belsley, 1984). Indications show that there was no variable collinearity in the model

The result of the regression analysis of responsiveness affecting perceived intangible service quality showed that responsiveness was associated with perceived intangible service quality in the hotel. B is meaningful to interpret the regression coefficient. B is used to interpret the units of the measures used and it is the means of the variables involved β. β is the hypothesized regression coefficient. When using standardized data, the regression coefficients (B) are known as beta (β) coefficient which allows comparing directly the relative effect of each independent variable on the dependent variable and standardized regression coefficient allows for direct comparison between coefficients as to their relative explanatory power of the dependent variable. The standardized β coefficient corresponds to a significance of a B in a multiple regression equation. The standardized coefficient β was used to indicate the impact. The results predicted the probability of perceived intangible service quality in hotel according to responsiveness.

Table 4 - 8 shows the regression result of responsiveness effect on the perceived intangible service quality.

Table 4 - 8 regression results of responsiveness effect on perceived intangible service quality (N=714)

I. V.	measurement	D. V	B	β	T	Sig.	VIF	C.I
Responsiveness	Responsiveness in hotel public space	perceived intangible service quality	.133	.143	4.268	.00	1.18	9.24
	Responsiveness in hotel guest room		.385	.496	14.79	.00	1.18	10.56
R^2 = .323 Adjusted R^2=.321 D.F.=712 F=169.042 significant at .000								

I. V.: Independent variables D. V.: Dependent variable C.I: Condition index

P<.05

Based on these results, the null hypothesis 1–2 is rejected. Then, it is concluded that responsiveness has an effect on perceived intangible quality.

Hypothesis one – three testing

H_0 1-3: Assurance has a no effect on perceived intangible quality.

H_a 1-3: Assurance has an effect on perceived intangible quality.

To test hypothesis 1-3, multiple regression was used. The results of the regression of independent variable "assurance" with the dependent variable "perceived intangible service quality" are listed in table 4 - 9. The regression equation of "perceived intangible service quality which effected by "assurance" indicated an adjusted R^2 of .359. This indicates that almost thirty six percent of the variation in "perceived intangible service quality which effected by assurance was explained by this equation. The F- ratio of 200.441 was significant (p=.000), indicating that the results of the equation hardly could have occurred by chance. All of the tests were satisfied and there was no significant violation of the assumptions and outliers found in the model. The degree of variable

collinearity is considered acceptable with the variance inflation (VIF) less than 10, and the condition indices less than 30 (Belsley, 1984). Indications show that there was no variable collinearity in the model

The result of the regression analysis of assurance affecting perceived intangible service quality showed that assurance was associated with perceived intangible service quality in the hotel. B is meaningful to interpret the regression coefficient. B is used to interpret the units of the measures used and it is the means of the variables involved β. β is the hypothesized regression coefficient. When using standardized data, the regression coefficients (B) are known as beta (β) coefficient which allows comparing directly the relative effect of each independent variable on the dependent variable and standardized regression coefficient allows for direct comparison between coefficients as to their relative explanatory power of the dependent variable. The standardized β coefficient corresponds to a significance of a B in a multiple regression equation. The standardized coefficient β was used to indicate the impact. The results predicted the probability of perceived intangible service quality in hotel according to assurance.

Table 4 - 9 shows the regression result of assurance effect on the perceived intangible service quality.

Table 4 - 9 regression results of assurance effect on perceived intangible service quality (N=714)

I. V.	measurement	D. V	B	β	T	Sig.	VIF	C.I
Assurance	Assurance in hotel public space	perceived intangible service quality	.260	.306	8.625	.00	1.4	9.76
	Assurance in hotel guest room		.342	.379	10.71	.00	1.4	10.62
R^2 = .361 Adjusted R^2=.359 D.F.=712 F=200.441 significant at .000								

I. V.: Independent variables D. V.: Dependent variable C.I: Condition index

P<.05

Based on these results, the null hypothesis 1–3 is rejected. Then, it is concluded that assurance has an effect on perceived intangible quality.

Hypothesis one – four testing

H_0 1- 4: Empathy has a no effect on perceived intangible quality.

H_a 1- 4: Empathy has an effect on perceived intangible quality.

To test hypothesis 1- 4, multiple regression was used. The results of the regression of independent variable "empathy" with the dependent variable "perceived intangible service quality" are listed in table 4 - 10. The regression equation of "perceived intangible service quality which effected by "empathy" indicated an adjusted R^2 of .265. This indicates that almost twenty seven percent of the variation in "perceived intangible service quality which effected by empathy was explained by this equation. The F- ratio of 129.343 was significant (p=.000), indicating that the results of the equation hardly could have occurred by chance. All of the tests were satisfied and there was no significant violation of the assumptions and outliers found in the model. The degree of variable

collinearity is considered acceptable with the variance inflation (VIF) less than 10, and the condition indices less than 30 (Belsley, 1984). Indications show that there was no variable collinearity in the model

The result of the regression analysis of empathy affecting perceived intangible service quality showed that empathy was associated with perceived intangible service quality in the hotel. B is meaningful to interpret the regression coefficient. B is used to interpret the units of the measures used and it is the means of the variables involved β. β is the hypothesized regression coefficient. When using standardized data, the regression coefficients (B) are known as beta (β) coefficient which allows comparing directly the relative effect of each independent variable on the dependent variable and standardized regression coefficient allows for direct comparison between coefficients as to their relative explanatory power of the dependent variable. The standardized β coefficient corresponds to a significance of a B in a multiple regression equation. The standardized coefficient β was used to indicate the impact. The results predicted the probability of perceived intangible service quality in hotel according to empathy.

Table 4 - 10 shows the regression result of empathy effect on the perceived intangible service quality.

Table 4 – 10 regression results of empathy effect on perceived intangible service quality (N=714)

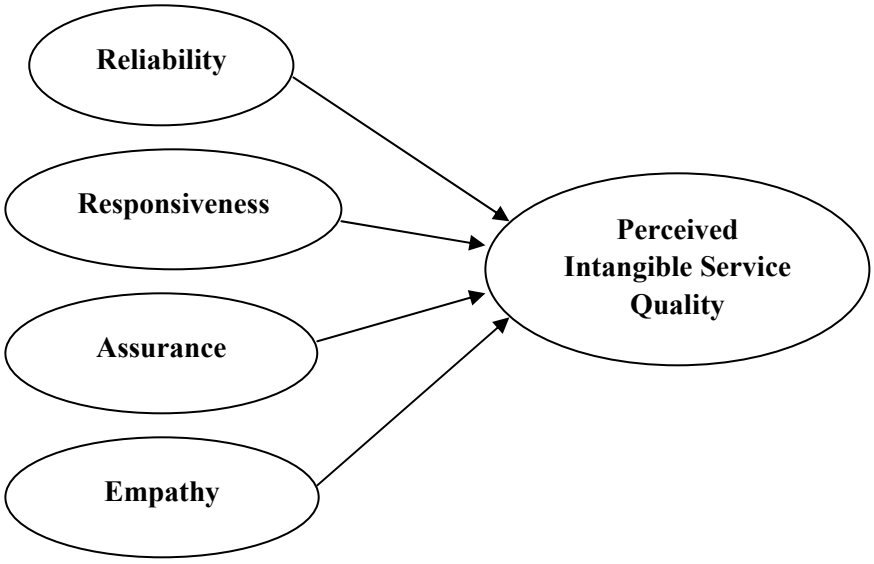
I. V.	measurement	D. V	B	β	T	Sig.	VIF	C.I
Empathy	Empathy in hotel public space	perceived intangible service quality	.164	.203	5.812	.00	1.18	8.55
	Empathy in hotel guest room		.366	.403	11.56	.00	1.18	10.25
R^2 = .267 Adjusted R^2=.265 D.F.=712 F=129.343 significant at .000								

I. V.: Independent variables D. V.: Dependent variable C.I: Condition index

P<.05

Based on these results, the null hypothesis 1–4 is rejected. Then, it is concluded that empathy has an effect on perceived intangible quality.

Figure 3. The intangible service quality research model for perceived intangible service quality



Research Question Two Testing

A summary of the results of all the hypothesis tests is presented in Table 4-18.

Research question two proposes that tangible service factors have an effect on perceived tangible service quality. To answer of research question two, three hypotheses were developed based on previous research. To test three kinds of hypotheses, regression analysis was used to determine the impact of tangible service factors on the perceived tangible service quality.

The independent variable was seven point of scale of the tangible service factors of the hotel. The scales are as follows: “strongly disagree” is coded as “1” and “strongly agree” is coded as “7”. The tangible service factors are ‘signs, symbols and artifacts’, ‘space and function’, and ‘ambient condition’ (Bitner, 1992). Bitner (1992) proposed ‘signs, symbols and artifacts’ related to temperature, air quality, noise, music, odor and etc. and ‘space and function are layout, equipment, furnishing and etc.. Bitner (1992) also mentioned ‘signs, symbols and artifacts’ are signage, personal artifacts, style of décor and etc.. Baker and Cameron (1996) mentioned ambience are lighting and cleanliness and design are layout, total space, architecture style, colors, color combinations, building materials, textures, patterns, accessories, furnishings, and signage. They also proposed social factors as appropriateness. Wakefield and Blodgett (1996) proposed five factors of physical environment variable. They are layout accessibility, facility aesthetics, seating comfort, electronic equipment and display, and facility cleanliness. Layout accessibility are furnishings, equipment, service areas, passageways, entry and exit, and ancillary service area. Facility aesthetics are including architectural design, interior design and décor. Seating comfort is the space between the seats and electronic equipment and

display are high quality projection, sound systems, type and quality of video and slot machines. Facility cleanliness is mentioned as maintain cleanliness and ongoing cleanup. Wakefield and Blodgett (1999) showed three physical environment factors in their study. They are 'building design and décor 'which including attractive outside, appearance, attractive interior design, easy layout to get around, and comfortable seats, 'equipment' which include electronic equipment of high quality, excellent and modern-looking, and 'ambience' which include keeping clean, comfortable temperature, and employee's neat appearing. Based on these researches, three tangible variables were used in this study. Detailed measurement items are seen in the table 4-2 and 4-3.

The dependent variable was the seven point scale of the perceived tangible service quality of the hotel. The scales are as follows: "terrible" is coded as "1" and "great" is coded as "7".

The three tested hypotheses are

H2-5: Space and function have an effect on perceived tangible quality.

H2-6: Ambient conditions have an effect on perceived tangible quality.

H2-7: Signs, symbols, and artifacts have an effect on perceived tangible quality.

Hypothesis two – five testing

H_0 2 - 5: Space and function has a no effect on perceived tangible quality.

H_a 2 - 5: Space and function has an effect on perceived tangible quality.

To test hypothesis 2 - 5, multiple regression was used. The results of the regression of independent variable "space and function" with the dependent variable "perceived

tangible service quality" are listed in table 4 - 11. The regression equation of "perceived tangible service quality which effected by "space and function" indicated an adjusted R^2 of .159. This indicates that almost sixteen percent of the variation in "perceived tangible service quality which effected by space and function was explained by this equation. The F- ratio of 68.547 was significant (p=.000), indicating that the results of the equation hardly could have occurred by chance. All of the tests were satisfied and there was no significant violation of the assumptions and outliers found in the model. The degree of variable collinearity is considered acceptable with the variance inflation (VIF) less than 10, and the condition indices less than 30 (Belsley, 1984). Indications show that there was no variable collinearity in the model

The result of the regression analysis of space and function affecting perceived tangible service quality showed that space and function was associated with perceived tangible service quality in the hotel. B is meaningful to interpret the regression coefficient. B is used to interpret the units of the measures used and it is the means of the variables involved β. β is the hypothesized regression coefficient. When using standardized data, the regression coefficients (B) are known as beta (β) coefficient which allows comparing directly the relative effect of each independent variable on the dependent variable and standardized regression coefficient allows for direct comparison between coefficients as to their relative explanatory power of the dependent variable. The standardized β coefficient corresponds to a significance of a B in a multiple regression equation. The standardized coefficient β was used to indicate the impact. The results predicted the probability of perceived tangible service quality in hotel according to space and function.

Table 4 - 11 shows the regression result of space and function effect on the perceived tangible service quality.

Table 4 – 11 regression results of space and function effect on perceived tangible service quality (N=714)

I. V.	measurement	D. V	B	β	T	Sig.	VIF	C.I
Space and function	Space and function in hotel public space	perceived tangible service quality	.205	.203	5.501	.00	1.16	1.17
	Space and function in hotel guest room		.281	.280	7.572	.00	1.16	1.47
R^2 = .162 Adjusted R^2=.159 D.F.=712 F=68.547 significant at .000								

I. V.: Independent variables D. V.: Dependent variable C.I: Condition index

P<.05

Based on these results, the null hypothesis 2-5 is rejected. Then, it is concluded that space and function has an effect on perceived tangible quality.

Hypothesis two – six testing

H_0 2 - 6: Ambient conditions have a no effect on perceived tangible quality.

H_a 2 - 6: Ambient conditions have an effect on perceived tangible quality.

To test hypothesis 2 - 6, multiple regression was used. The results of the regression of independent variable "ambient conditions" with the dependent variable "perceived tangible service quality" are listed in table 4 - 12. The regression equation of "perceived tangible service quality which effected by "ambient conditions" indicated an adjusted R^2 of .191. This indicates that almost nineteen percent of the variation in "perceived tangible service quality which effected by ambient conditions was explained by this equation. The F- ratio of 85.122 was significant (p=.000), indicating that the results of the equation

hardly could have occurred by chance. All of the tests were satisfied and there was no significant violation of the assumptions and outliers found in the model. The degree of variable collinearity is considered acceptable with the variance inflation (VIF) less than 10, and the condition indices less than 30 (Belsley, 1984). Indications show that there was no variable collinearity in the model

The result of the regression analysis of ambient conditions affecting perceived tangible service quality showed that ambient conditions was associated with perceived tangible service quality in the hotel. B is meaningful to interpret the regression coefficient. B is used to interpret the units of the measures used and it is the means of the variables involved β. β is the hypothesized regression coefficient. When using standardized data, the regression coefficients (B) are known as beta (β) coefficient which allows comparing directly the relative effect of each independent variable on the dependent variable and standardized regression coefficient allows for direct comparison between coefficients as to their relative explanatory power of the dependent variable. The standardized β coefficient corresponds to a significance of a B in a multiple regression equation. The standardized coefficient β was used to indicate the impact. The results predicted the probability of perceived tangible service quality in hotel according to ambient conditions. Table 4 - 12 shows the regression result of ambient conditions effect on the perceived tangible service quality.

Table 4 – 12 regression results of ambient conditions effect on perceived tangible service quality (N=714)

I. V.	measurement	D. V	B	β	T	Sig.	VIF	C.I
Ambient conditions	Ambient conditions in hotel public space	perceived tangible service quality	.347	.346	7.700	.000	1.77	1.29
	Ambient conditions in hotel guest room		.127	.127	2.825	.005	1.77	2.21
R^2 = .193 Adjusted R^2=.191 D.F.=712 F=85.122 significant at .000								

I. V.: Independent variables D. V.: Dependent variable C.I: Condition index

P<.05

Based on these results, the null hypothesis 2-6 is rejected. Then, it is concluded that ambient conditions have an effect on perceived tangible quality.

Hypothesis two – seven testing

H_0 2 - 7: Signs, symbols, and artifacts have a no effect on perceived tangible quality.

H_a 2 - 7: Signs, symbols, and artifacts have an effect on perceived tangible quality.

To test hypothesis 2 - 7, multiple regression was used. The results of the regression of independent variable "signs, symbols, and artifacts" with the dependent variable "perceived tangible service quality" are listed in table 4 - 13. The regression equation of "perceived tangible service quality which effected by "signs, symbols, and artifacts" indicated an adjusted R^2 of .208. This indicates that almost twenty one percent of the variation in "perceived tangible service quality which effected by signs, symbols, and artifacts was explained by this equation. The F- ratio of 94.706 was significant (p=.000),

indicating that the results of the equation hardly could have occurred by chance. All of the tests were satisfied and there was no significant violation of the assumptions and outliers found in the model. The degree of variable collinearity is considered acceptable with the variance inflation (VIF) less than 10, and the condition indices less than 30 (Belsley, 1984). Indications show that there was no variable collinearity in the model

The result of the regression analysis of signs, symbols, and artifacts affecting perceived tangible service quality showed that signs, symbols, and artifacts was associated with perceived tangible service quality in the hotel. B is meaningful to interpret the regression coefficient. B is used to interpret the units of the measures used and it is the means of the variables involved β. β is the hypothesized regression coefficient. When using standardized data, the regression coefficients (B) are known as beta (β) coefficient which allows comparing directly the relative effect of each independent variable on the dependent variable and standardized regression coefficient allows for direct comparison between coefficients as to their relative explanatory power of the dependent variable. The standardized β coefficient corresponds to a significance of a B in a multiple regression equation. The standardized coefficient β was used to indicate the impact. The results predicted the probability of perceived tangible service quality in hotel according to signs, symbols, and artifacts.

Table 4 - 13 shows the regression result of signs, symbols, and artifacts effect on the perceived tangible service quality.

Table 4 – 13 regression results of signs, symbols, and artifacts effect on perceived tangible service quality (N=714)

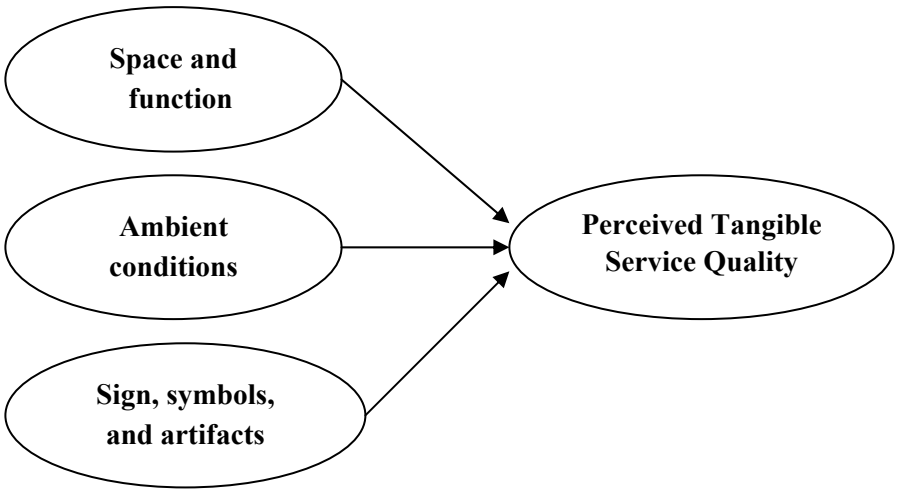
I. V.	measurement	D. V	B	β	T	Sig.	VIF	C.I
Signs, symbols, and artifacts	Signs, symbols, and artifacts in hotel public space	perceived tangible service quality	.296	.294	7.202	.000	1.5	1.26
	Signs, symbols, and artifacts in hotel guest room		.223	.221	5.426	.005	1.5	1.93
R^2 = .211 Adjusted R^2=.208 D.F.=712 F=94.706 significant at .000								

I. V.: Independent variables D. V.: Dependent variable C.I: Condition index

P<.05

Based on these results, the null hypothesis 2-7 is rejected. Then, it is concluded that signs, symbols, and artifacts have an effect on perceived tangible quality.

Figure 4. The tangible service quality research model for perceived tangible service quality



Research Question Three Testing

A summary of the results of all the hypothesis tests is presented in Table 4-18.

Research question three proposes that perceived intangible and tangible service quality have an effect on overall perceived service quality. To address research question three, two hypotheses were developed. To test these hypotheses, regression analysis was used to determine hypotheses of perceived tangible and intangible service qualities have an effect on overall perceived service quality.

Two hypotheses are

H3-8: Perceived intangible service quality have an effect on overall perceived service quality.

H3-9: Perceived tangible service quality have an effect on overall perceived service quality

The independent variables were seven point of scale of perceived intangible service quality and perceived tangible service quality of the hotel. The dependent variable was the seven point scale of the overall perceived service quality of the hotel. The scales of these variables are as follows: “terrible” is coded as “1” and “great” is coded as “7”.

Hypothesis three – eight testing

H_0 3 - 8: Perceived intangible service quality have a no effect on overall perceived service quality.

H_a 3 - 8: Perceived intangible service quality have an effect on overall perceived service quality.

To test hypothesis 3 - 8, simple regression was used. The results of the regression of independent variable "perceived intangible service quality" with the dependent variable "overall perceived service quality" are listed in table 4 - 14.

The regression equation of "overall perceived service quality which effected by "perceived intangible service quality" indicated an adjusted R^2 of .500. This indicates that almost fifty percent of the variation in "overall perceived service quality which effected by perceived intangible service quality was explained by this equation. The F- ratio of 711.025 was significant (p=.000), indicating that the results of the equation hardly could have occurred by chance. All of the tests were satisfied and there was no significant violation of the assumptions and outliers found in the model. The degree of variable collinearity is considered acceptable with the variance inflation (VIF) less than 10, and the condition indices less than 30 (Belsley, 1984). Indications show that there was no variable collinearity in the model

The result of the regression analysis of perceived intangible service quality affecting overall perceived service quality showed that perceived intangible service quality was associated with overall perceived service quality in the hotel. B is meaningful to interpret the regression coefficient. B is used to interpret the units of the measures used and it is the means of the variables involved β. β is the hypothesized regression coefficient. When using standardized data, the regression coefficients (B) are known as beta (β) coefficient which allows comparing directly the relative effect of each independent variable on the dependent variable and standardized regression coefficient allows for direct comparison between coefficients as to their relative explanatory power of the dependent variable. The standardized β coefficient corresponds to a significance of

a B in a multiple regression equation. The standardized coefficient β was used to indicate the impact. The results predicted the probability of overall perceived service quality in hotel according to perceived intangible service quality.

Table 4 - 14 shows the regression result of perceived intangible service quality effect on the overall perceived service quality.

Table 4 – 14 regression results of perceived intangible service quality effect on overall perceived service quality (N=714)

Independent variables	Dependent variable	B	β	T	Sig.	VIF	Condition index
Perceived Intangible Service Quality	Overall Perceived Service Quality	.737	.707	26.665	.000	1.000	9.66
R^2 = .500 Adjusted R^2=.499 D.F.=712 F=711.025 significant at .000							

P<.05

Based on these results, the null hypothesis 3-8 is rejected. Then, it is concluded that perceived intangible service quality have an effect on overall perceived service quality.

Hypothesis three – nine testing

H_0 3 - 9: Perceived tangible service quality have a no effect on overall perceived service quality

H_a 3 - 9: Perceived tangible service quality have an effect on overall perceived service quality

To test hypothesis 3 - 9, simple regression was used. The results of the regression of independent variable "perceived tangible service quality" with the dependent variable "overall perceived service quality" are listed in table 4 - 15.

The regression equation of "overall perceived service quality which effected by "perceived tangible service quality" indicated an adjusted R^2 of .510. This indicates that almost fifty one percent of the variation in "overall perceived service quality which effected by perceived tangible service quality was explained by this equation. The F-ratio of 741.853 was significant (p=.000), indicating that the results of the equation hardly could have occurred by chance. All of the tests were satisfied and there was no significant violation of the assumptions and outliers found in the model. The degree of variable collinearity is considered acceptable with the variance inflation (VIF) less than 10, and the condition indices less than 30 (Belsley, 1984). Indications show that there was no variable collinearity in the model

The result of the regression analysis of perceived tangible service quality affecting overall perceived service quality showed that perceived tangible service quality was associated with overall perceived service quality in the hotel. B is meaningful to interpret the regression coefficient. B is used to interpret the units of the measures used and it is the means of the variables involved β. β is the hypothesized regression coefficient. When using standardized data, the regression coefficients (B) are known as beta (β) coefficient which allows comparing directly the relative effect of each independent variable on the dependent variable and standardized regression coefficient allows for direct comparison between coefficients as to their relative explanatory power of the dependent variable. The standardized β coefficient corresponds to a significance of a B in a multiple regression

equation. The standardized coefficient β was used to indicate the impact. The results predicted the probability of overall perceived service quality in hotel according to perceived tangible service quality.

Table 4 - 15 shows the regression result of perceived tangible service quality effect on the overall perceived service quality.

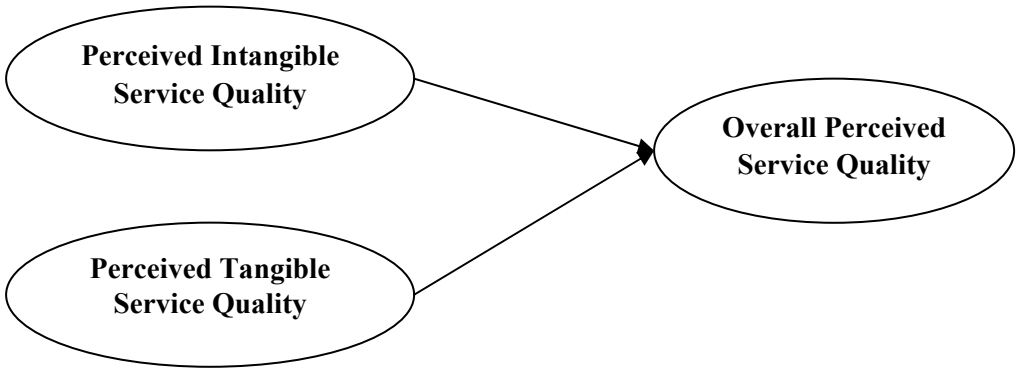
Table 4 – 15 regression results of perceived tangible service quality effect on overall perceived service quality (N=714)

Independent variables	Dependent variable	B	β	T	Sig.	VIF	Condition index
Perceived tangible Service Quality	Overall Perceived Service Quality	.761	.715	27.237	.000	1.000	9.998
R^2 = .511 Adjusted R^2=.510 D.F.=712 F=741.853 significant at .000							

P<.05

Based on these results, the null hypothesis 3-9 is rejected. Then, it is concluded that perceived tangible service quality have an effect on overall perceived service quality.

Figure 5. The research model for perceived service quality



Research Question Four Testing

A summary of the results of all the hypothesis tests is presented in Table 4-18.

Research question four proposes that perceived tangible and intangible service qualities have an effect on customer loyalty. To test research question four, two hypotheses were developed. To test two kinds of hypotheses, simple regression analysis was used to determine that the perceived tangible and intangible service qualities have an effect on customer loyalty.

Two hypotheses are

H4-10: Perceived service quality of intangible service have an effect on customer loyalty.

H4-11: Perceived service quality of tangible service have an effect on customer loyalty.

The dependent variable was the seven point scale of the customer loyalty of the hotel. The scales are as follows: “strongly disagree” is coded as “1” and “strongly agree” is coded as “7”. Independent variable was the perceived intangible service quality and perceived tangible service quality. The scales of independent variables are as follows: “terrible” is coded as “1” and “great” is coded as “7”.

Hypothesis four – ten testing

H_0 4 - 10: Perceived intangible service quality have a no effect on customer loyalty

H_a 4 - 10: Perceived intangible service quality have an effect on customer loyalty

To test hypothesis 4 - 10, simple regression was used. The results of the regression of independent variable "perceived intangible service quality" with the dependent variable "customer loyalty" are listed in table 4 - 16.

The regression equation of "customer loyalty" which effected by "perceived intangible service quality" indicated an adjusted R^2 of .404. This indicates that almost forty percent of the variation in "customer loyalty which effected by perceived intangible service quality was explained by this equation. The F- ratio of 484.332 was significant (p=.000), indicating that the results of the equation hardly could have occurred by chance. All of the tests were satisfied and there was no significant violation of the assumptions and outliers found in the model. The degree of variable collinearity is considered acceptable with the variance inflation (VIF) less than 10, and the condition indices less than 30 (Belsley, 1984). Indications show that there was no variable collinearity in the model

The result of the regression analysis of perceived intangible service quality affecting customer loyalty showed that perceived intangible service quality was associated with customer loyalty in the hotel. B is meaningful to interpret the regression coefficient. B is used to interpret the units of the measures used and it is the means of the variables involved β. β is the hypothesized regression coefficient. When using standardized data, the regression coefficients (B) are known as beta (β) coefficient which allows comparing directly the relative effect of each independent variable on the dependent variable and standardized regression coefficient allows for direct comparison between coefficients as to their relative explanatory power of the dependent variable. The standardized β coefficient corresponds to a significance of a B in a multiple regression

equation. The standardized coefficient β was used to indicate the impact. The results predicted the probability of customer loyalty in hotel according to perceived intangible service quality.

Table 4 - 16 shows the regression result of perceived intangible service quality effect on the customer loyalty.

Table 4 – 16 regression results of perceived intangible service quality effect on customer loyalty (N=714)

Independent variables	Dependent variable	B	β	T	Sig.	VIF	Condition index
Perceived intangible Service Quality	Customer loyalty	.646	.637	22.008	.000	1.000	9.998
R^2 = .405 Adjusted R^2=.404 D.F.=712 F=484.332 significant at .000							

P<.05

Based on these results, the null hypothesis 4-10 is rejected. Then, it is concluded that perceived intangible service quality have an effect on customer loyalty.

Hypothesis four – eleven testing

H_0 4 - 11: Perceived tangible service quality have a no effect on customer loyalty

H_a 4 - 11: Perceived tangible service quality have an effect on customer loyalty

To test hypothesis 4 - 11, simple regression was used. The results of the regression of independent variable "perceived tangible service quality" with the dependent variable "customer loyalty" are listed in table 4 - 17.

The regression equation of "customer loyalty" which effected by "perceived tangible service quality" indicated an adjusted R^2 of .399. This indicates that almost forty percent of the variation in "customer loyalty which effected by perceived tangible service quality was explained by this equation. The F- ratio of 473.54 was significant (p=.000), indicating that the results of the equation hardly could have occurred by chance. All of the tests were satisfied and there was no significant violation of the assumptions and outliers found in the model. The degree of variable collinearity is considered acceptable with the variance inflation (VIF) less than 10, and the condition indices less than 30 (Belsley, 1984). Indications show that there was no variable collinearity in the model

The result of the regression analysis of perceived tangible service quality affecting customer loyalty showed that perceived tangible service quality was associated with customer loyalty in the hotel. B is meaningful to interpret the regression coefficient. B is used to interpret the units of the measures used and it is the means of the variables involved β. β is the hypothesized regression coefficient. When using standardized data, the regression coefficients (B) are known as beta (β) coefficient which allows comparing directly the relative effect of each independent variable on the dependent variable and standardized regression coefficient allows for direct comparison between coefficients as to their relative explanatory power of the dependent variable. The standardized β coefficient corresponds to a significance of a B in a multiple regression equation. The

standardized coefficient β was used to indicate the impact. The results predicted the probability of customer loyalty in hotel according to perceived tangible service quality. Table 4 - 17 shows the regression result of perceived tangible service quality effect on the customer loyalty.

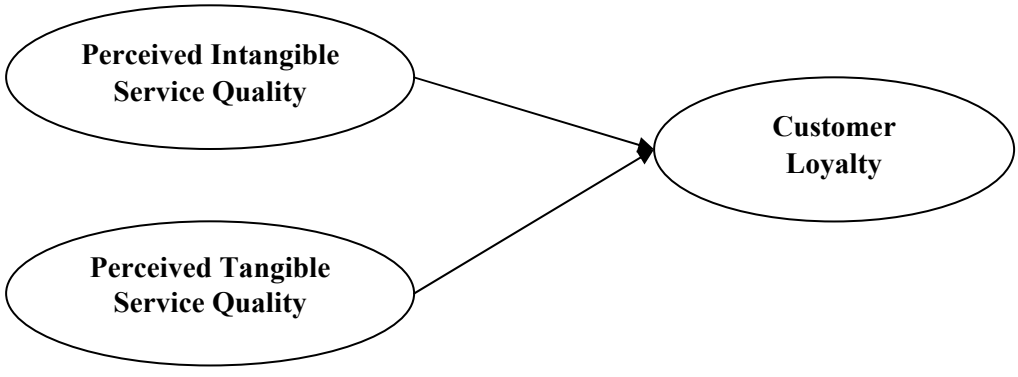
Table 4 – 17 regression results of perceived tangible service quality effect on customer loyalty (N=714)

Independent variables	Dependent variable	B	β	T	Sig.	VIF	Condition index
Perceived tangible Service Quality	Customer loyalty	.629	.632	21.761	.000	1.000	9.66
R^2 = .399 Adjusted R^2=.399 D.F.=712 F=473.540 significant at .000							

P<.05

Based on these results, the null hypothesis 4-11 is rejected. Then, it is concluded that perceived tangible service quality have an effect on customer loyalty.

Figure 6. The research model for customer loyalty



Summary of Hypothesis Tests

Table 4-18 presents a summary of the results of the hypothesis tests. Each of the hypotheses was supported.

Table 4-18 Summaries of hypotheses, used analyses and the results

Hypotheses	Used Analyses	Results
Research question 1: ***Do intangible service factors have an effect on perceived service quality?***		
H1-1: Reliability has an effect on perceived quality.	Regression	Support
H1-2: Responsiveness has an effect on perceived quality.	Regression	Support
H1-3: Assurance has an effect on perceived quality.	Regression	Support
H1-4: Empathy has an effect on perceived quality.	Regression	Support
Research question 2: ***Do tangible service (physical environment) factors have an effect on perceived service quality?***		
H2-5: Space and function have an effect on perceived quality.	Regression	Support
H2-6: Ambient conditions have an effect on perceived quality.	Regression	Support
H2-7: Signs, symbols, and artifacts have an effect on perceived quality.	Regression	Support
Research question 3: ***Does the perceived intangible and tangible service quality have an effect on overall perceived service quality?***		
H3-8: Perceived intangible service quality have an effect on overall perceived service quality.	Regression	Support
H3-9: Perceived tangible service quality have an effect on overall perceived service quality.	Regression	Support
Research question 4: ***Does the perceived service quality have an effect on customer loyalty?***		
H4-10: perceived intangible service quality have an effect on customer loyalty.	Regression	Support
H4-11: perceived tangible service quality have an effect on customer loyalty.	Regression	Support

CHAPTER V

DISCUSSION AND CONCLUSIONS

The purpose of this study on the impact of physical environment on perceived service quality in the hotel industry was to examine the contribution of physical environment to service quality and more specifically focus on the impact of the physical environment in the hotel industry on perceived quality of service.

The six specific objectives of this study were to:

1. Combine and adapt Mittal and Baker's (1998) and Bitner's (1992) frameworks, which outlined and illustrated the influence of physical environment on customer response and subsequent behavioral intentions, and then incorporate those frameworks within the traditional service quality framework that exists in the hotel industry.
2. Examine the effect of intangible service variables that are theorized to influence perceived quality on the physical environment of the hotel industry.
3. Examine the effect of tangible service variables that are theorized to influence perceived quality pm the physical environment of the hotel industry.
4. Examine the effect of perceived quality on customer loyalty.

5. Measure the difference between perceived service qualities influenced by intangible and those influenced by tangible service factors
6. Measure the difference between customer loyalties influenced by perceived service quality of intangible service factors and customer loyalties influenced by perceived service quality of tangible service factors

This chapter offers a summary of the current study and conclusions related to the four research questions, Practical recommendations derived from study results will be discussed in the first part. The chapter will conclude with a discussion of the limitation sand implications of this study for managers in the hotel industry and suggestions for future research.

Descriptive Results from Respondents

The sample consisted of 362 male respondents (50.7%) and 352 female respondents (49.3%). Rankings in age groups were as follows: 29.8% of the respondents were 38-47, followed by 27% at 18-27, 21% at 48-57, and 14.6% at 28-37. Asian groups led the ethnic groupings with 90.5%, followed by 3.5% for South America, 2.2% -for Europe, and 1.8% for North America. For annual household income, 26.5 % of respondents were within the range of $35,001 to $50,000, followed by 20.6% in the range of $65,001 to $80,000, 19.6% between $50,001 and $65,000, and 18.5% under $35,000. In terms of education, 38.2% had completed post-graduate, 24.5% were college/university graduate and 13.7% had some college or trade school degree. Regarding the purpose of the visit/travel, 30% of respondents had visited Busan, Korea,

for leisure, 26.3% of respondents traveled to Busan, Korea, for business, and 143 respondents, 20.0% visited Busan, Korea, for business and leisure together. A rest of 19.6% of the respondents had other traveling purposes than, including business, leisure, convention and visiting relative.

Exploratory factor analysis was used to examine the initial reliability and validity of those attributes that were grouped together. Exploratory factor analysis was used to identify the dimensions of attributes of tangible service quality in hotel public spaces and hotel guest rooms, and customer loyalty of hotel guests.

It was determined that 27 tangible service quality items of hotel public space and 23 tangible service quality items of hotel guest room were applied, and three dimensions for each area were extracted from the exploratory factor analysis. Those three dimensions were signs, symbols and artifacts; space/function; and ambient condition. Specifically, three dimensions of hotel public space were named as facility signs, symbols and artifacts, facility space/function, and facility ambient condition. Three dimensions of hotel guest rooms were named as room signs, symbols and artifacts, room space/function, and room ambient condition.

The factor of facility signs, symbols, and artifacts included decoration items and attractiveness, which related to the style of décor factor as conceptualized in the study of Bitner(1992). Bitner (1992) included odor, temperature, air quality, noise, and music items in ambient conditions. However, different items of aroma, temperature, music, lighting and attractive uniform were included in the factor of facility signs, symbols and artifacts in this study, following the concept of general interior variables that is in the study of Turley, Fugate (1992) and Turley and Milliman (2000) included color, lighting,

scents, sounds and music, air quality, temperature, and decoration and art to their general interior variables. The facility space/function factor included layout, equipment, and furnishings items same as with the study of Bitner (1992). In this study results, only hotel public space cleanliness items were included in the facility ambient condition. Baker and Cameron (1996) and Wakefield and Blodgett (1999) conceptualized cleanliness items into the ambience factor. The same conceptualization of hotel public space tangible service factors was adapted to conceptualize the factor of hotel guest room. The room signs, symbols and artifacts factor included not only decoration items and attractiveness items, but also aroma, temperature, music, lighting and attractive uniform. The room space/function factor included layout, equipment, and furnishings items. The room ambient condition factor included only cleanliness of items in the hotel guest room.

Reliability, responsiveness, assurance, and empathy variables of intangible service quality in hotel public space were measured by polite and courteous, personal warmth in employee behavior, not seeming to be bothered by customers' requests, and prompt service items. Also, intangible service quality in hotel guest room was measured by polite and courteous, personal warmth in employee behavior, happily serving the customer, and prompt service items.

To measure the perceived service quality variable, tangible service quality, intangible service quality and overall service quality items were used. Also, 11 items of customer loyalty were identified by one dimension through utilizing exploratory factor analysis. The customer loyalty factor included recommendation, encouraging, consideration, and revisit items.

Multiple regression analysis was used to identify the relationship between intangible and tangible service quality factors and perceived intangible and tangible service quality. To measure the relationship between perceived intangible and tangible service quality and customer loyalty, multiple regression analysis was used and then compared with the standardized coefficients (Beta weight, β) of each relation to learn which perceived intangible and tangible service quality affected customer loyalty the most. Simple regression analysis was used to examine the relationship between overall perceived service quality and customer loyalty.

Discussions of the Research Questions

Research Question 1: Do intangible service factors have an effect on perceived service quality?

This study tested the relationships between perceived service quality and intangible aspects of service quality in hotel. Based on the test results of hypothesis one-one, one-two, one- three, and one-four, intangible aspects such as reliability, responsiveness, assurance, and empathy had a direct influence on an individual's perception of service quality in hotel.

In hotel public space, empathy variable had a greater influence on the intangible perceived service quality. In hotel guest room, responsiveness variable had a greater influence on the intangible perceived service quality.

Research Question 2: Do tangible service (physical environment) factors have an effect on perceived service quality?

This study also tested the relationship between the perceived service quality and tangible aspects of service quality in hotel. Tangible service items were reduced to three factors, namely, signs, symbols and artifacts; space and function; and ambient factors based on constructs in previous research. According to the test results of hypothesis two-five, two-six, and two- seven, signs, symbols and artifacts; space and function; and ambient factors had a direct influence on an individual's perception of service quality in hotel.

In hotel public space, Ambient conditions factor had the strongest influence on perceived service quality among the three factors (β= .346). The other two factors had a less influence on perceived service quality relatively. In hotel guest room, space and function factor had the strongest influence on perceived service quality among the three factors (β= .280). The signs, symbols and artifacts factor (β= .221) also had stronger effect than ambient conditions for hotel guest room. These results indicate that customers are influenced differently by service quality depending on the area even within the same building.

Research Question 3: Does the perceived intangible and tangible service quality have an effect on overall perceived service quality?

With this research question, the study examined the relationships between perceived intangible service quality and overall perceived service quality and also/then between perceived tangible service quality and overall perceived service quality. The results of hypothesis three-eight and three-nine indicated overall perceived service quality influenced by perceived intangible and tangible service quality. The perceived intangible

service quality (β= .433) had a little stronger influence than did perceived tangible service quality (β= .409).

Research Question 4: Does perceived service quality has an effect on customer loyalty?

The 11 customer loyalty items were reduced to one factor and named 'customer loyalty factor'. Customer loyalty factor was used to test the relationship between perceived intangible and tangible service quality and customer loyalty. The results of hypothesis four-ten and four-eleven indicated that customer loyalty influenced by perceived intangible and tangible service quality. This results also showed that perceived intangible service quality (β= .383) had a stronger influence than did perceived tangible service quality (β= .367).

Discussion and Implications of the Study

This study empirically tested a servicescape model which was developed by a literature review of the hotel industry. The study results showed that physical environment influences the perceived service quality that relate to customer satisfaction as other theories have found, namely that the environment does play a role in the satisfaction process (Mehrabian & Russell, 1974; Bitner, 1992; Lucas, 2003; Rosenbaum, 2005). This study adapted the combination framework of Baker's (1986) and Bitner's (1992) to the hotel industry. Wakefield & Blodgett (1996) empirically examined the role of the physical environment on the satisfaction process for leisure service customers, including slot players. Lucas (2003) extended the work of Bitner (1992) and Wakefield &

Blodgett (1996) to narrow down the scope of the slot floor of a hotel casino. This study helps managers to see hotel service operations from the guest's perspective and determine what guests want and need and how to provide it. The study result here indicated that intangible service quality had more of an effect on overall perceived service quality; but the difference between intangible and tangible service quality influenced by overall perceived service quality was small. The findings mean that hotel owners, managers, and operators need to reconsider the physical environment of their properties. Marketing strategies today have become more consumer-oriented, so most producers of goods and services can use consumer-oriented marketing.

A hotel sells rooms and services, a process that is called hospitality. Marketing services and marketing products have significant differences. When a product is demonstrated or shown, guests can assess its value rather easily. Successful satisfaction starts from meeting the expectations of the guests and the property's mission, which is to attract and satisfy guests. Marketing service is regarded as more difficult because it is intangible; a product is tangible. Lattin (1998) addressed hospitality as the property's personality and its development should start with the attitude of owners and managers. Hospitality service includes all hospitable services that are provided by all the employees. A person's personality is shown in an employee's behavior and style, such as fashion, walking, and conversation. Style also is influenced by one's image (Ferguson, 1982). Gronroos (1988) identified six criteria of good perceived service quality, including attitudes, internal relations, consumer contact, accessibility, behavior, service-mindedness, and appearance. These attributes were closely related to functionality and influenced corporate image.

The results of this study support the concept that a property's personality is shown not only by intangible marketing service, but also that tangible marketing service is shown by physical environment. Tangible physical environment plays the important role of stimuli in the consumer's service evaluation process. The successful style of a hotel property contributes to confidence, creativity, energy, experience, curiosity, and competitiveness (Ferguson, 1982).

Hotel management has long been regarded as a people business. That concept means not only that hotel exists to serve people, but they require the services of people to exist. These services are crucial for the well-being of guests and entirely dependent on the hotel staff. However, human behavior has no perfect standardization in a free society. So, hotel managers have invested a big portion of their budget into constant supervision, attention, and training. One of the greatest problems in recent years during the rapid development of the hotel industries has been the lack of an adequate labor supply. The imbalance of labor demand and supply has resulted in a low quality of labor. This poor quality of labor will have an adverse effect on business, and be the cause of incurring unexpected costs to properly train staff. Gray and Liguori (1994) outlined the element of cost that included the overall figure for cost per room and an average first –class hotel in the United States. Those items were land; construction; interest during construction; furniture, fixture and equipment; operating equipment; inventories; pre-opening expenses, and working capital. Except for pre-opening expenses, all other items were related to the tangible aspects of the hotel property.

Service quality control in the hotel industry looks crucial for successful customer satisfaction that can positively influence customer loyalty. The results of this study

emphasize that it is important to reconsider the tangible aspect oft he hotel industry regarding two difficulties. First, it is hard to standardize human behavior and second, there can unexpected costs for training. Tangible service quality control can not be ignored in trying to meet hotel guest expectations. It is the first step for guests when the assess hotel services and will be basis to attract and satisfy the guest and the successful customer satisfaction that becomes customer loyalty.

Future Research

This study has four limitations. First, this study used convenience sampling, so the sample may not represent a population. This problem causes the results of this study to have a limitation for generalization of its findings. However, since this study used exploratory research, this research can provide a fundamental base for further research.

Second, the investigation of hotel intangible and tangible services of this study conducted for only two spaces: Hotel public spaces and guest rooms. Most hotels have not only a lobby and guest rooms; they have more convenient facilities, such as restaurant and bars, and sport facilities. Also some hotels emphasize their particular function, for example, a business hotel in downtown emphasizes a convenient business environment a spa hotel focuses on their bathrooms and spa facilities; and a resort hotel tries to show the beautiful surrounding environment of the hotel and available comfortable services. To measure perceived service quality more exactly, any future research needs to group hotel categories first by function, such as resort hotel, convention hotel, business hotel, spa hotel, etc .,and then grade, such as luxury hotel, up-scale hotel, mid-scale hotel, etc. This

categorization will be necessary in order to use convenience or random sampling successfully. The result of the study reflected a more exact real perception of hotel service quality and measured correct customer expectations.

The third, the response rate is too low. The questionnaire package sets of this study were distributed by front desk employee when hotel customers checked in and the customers were asked to leave completed questionnaire in the locked box at the front desk when they checked out. This collection method may be a cause of the low response rate. When the customer used express check out system, they may have lost the initiative to leave the completed questionnaire in the locked box at the front desk. If the completed questionnaire was asked to leave in the guest room, and then house keeping employees delivered the complete questionnaire to locked box at the front desk. Their response rate may be higher than 6.73%, the response rate of this study.

The fourth limitation is in measurement of intangible service quality. The intangible service quality includes four factors. Each factor is measured by one item. If we use more than one measurement to identify intangible factors in the future research, it will be helpful to understand and identify the traits or characteristics of the intangible factors.

Based on this research, future research can measure more detailed relationship between perceived intangible and tangible service quality customer loyalty. Customer loyalty in this study adapted combination behavioral and attitudinal measurement. In the future research, the customer loyalty can be divided into behavioral customer loyalty and attitudinal customer loyalty. Then the research result will show how perceived intangible and tangible service quality will influence to customer loyalty behavior and attitude.

Those results will more useful to hotel managers and operators to develop their marketing plan.

U.S. travel expenditures hit $600 billion for the first time in 2004. And that number became a powerful stimulus for the building boom in new and remodeled hotels (Yee, 2005). Style and service, comfort and luxury, personal and authentic, creative and intriguing are what the modern guest demands from a hotel (Henry, 2001). The high competition in the hotel industry makes customer expectation more important. Knowing accurate customer expectations is a basis of successful customer satisfaction and link to customer loyalty. Future research needs to examine the service quality of the hotel industry more precisely to improve customer-oriented marketing strategies and provide strong tool to survive the current high competition in the hotel industry.

REFERENCES

Armstrong, R. W., Mok, C., Go, F. M. & Chan, A. (1997). The importance of cross-cultural expectations in the measurement of service quality perceptions in the hotel industry. *International Journal of Hospitality Management, 16* (2), 181–190.

Augustyn, M. & Ho., S. K. (1998). Service quality and tourism. *Journal of Travel Research, 37* (1), 71-75.

Babakus, E. & Boller, G. W. (1992). An empirical assessment of the SERVQUAL scale. *Journal of Business Research, 24* (3), 253-269.

Baker, J. (1986). The role of environment in marketing services: The consumer perspective. In J. A .Cepeil, et al. (Eds.), *The Services Challenge: Integrating for Competitive Advantage* (pp. 79-84). Chicago, IL: American Marketing Association.

Baker, M. J. (1986). The theory and practice of marketing. *Food Marketing, 2* (3), 3-15.

Baker, J. & Cameron, M. (1996). The effects of the service environment on affect and consumer perception of waiting time: An integrative review and research propositions. *Academy of Marketing Science Journal, 24* (4), 338-349.

Baker, J., Levy, M., & Grewal, D. (1992). An experimental approach to making retail store environmental decisions. *Journal of Retailing, 68* (4), 445-460.

Baker, J., Parasuraman, A., Grewal, D. & Voss, G. B. (2002). The influence of multiple store environment cues on perceived merchandise value and patronage intentions. *Journal of Marketing, 66* (2), 120-141.

Barsky, J. & Nash, L. (2003). Customer satisfaction: Applying concepts to industry-wide measures. *Cornell Hotel and Restaurant Administration Quarterly, 44* (5), 173-183.

Bateson, J. E. G. (1985). Self-service consumer: An exploratory study. *Journal of Retailing, 61* (3), 49-54.

Bateson, J. E. G. (1979). Why we need service marketing. In O.C. Farrell, S.W. Brown, and C.W. Lamb, Jr. (Eds.), *Conceptual and theoretical developments in marketing*, (pp. 131-146). Chicago, IL: American Marketing Association.

Bateson, J. E.G. (1978). Play and paradigm. In M.A. Salter (ed.), Play: Anthropological perspectives (pp.7-16). West Point, N.Y.: Leisure Press.

Berry, L. L. (1980). Services marketing is different. *Business, 30* (3), 24-36.

Berry, L. L., Zeithaml, V. A. & Parasuraman, A. (1985). Quality counts in services, too. *Business Horizons*, *28* (3), 44-53.

Berry, L. L., Zeithaml, V. A. & Parasuraman, A. (1990). Five imperatives for improving service quality. *Sloan Management Review, 31* (4), 29-38.

Besley, D.A. (1984). Collinearity and forecasting. *Journal of Forecasting , 3* (2), 183–197.

Bettencourt, L. A. (1997). Customer voluntary performance: Customers as partners in service delivery. *Journal of Retailing, 73* (3), 383-406.

Bitner, M. J. (1992). Servicescapes: The impact of physical surroundings on customers and employees, *Journal of Marketing, 56* (2), 57-67.

Bitner, M. J. (1990). Evaluating service encounters: The effects of physical surrounding. *Journal of Marketing, 54* (2), 69-79.

Bitner, M. J. & Hubbert, A. R. (1994). Encounter satisfaction versus overall satisfaction versus quality. In Rust, R. & Oliver, R. (Eds.), *Service Quality* (pp. 72-94). Thousand Oaks, CA: Sage Publications.

Bolton, R. N. & Drew, J. H. (1991a). A longitudinal analysis of the impact of service changes on. *Journal of Marketing, 55*(1), 1-18.

Bolton, R. N. & Drew, J. H. (1991b). A multistage model of customers' assessments of service quality and value. *Journal of Consumer Research, 17* (4), 375-387.

Booms, B. H. & Bitner, M. J. (1981). Marketing strategies and organizational structures for service firms. In Donnelly, J. H. and George, W. R. (Eds.), *Marketing of Services* (pp. 47-51). Chicago, IL: American Marketing Association.

Boulding, W., Kalra, A., Staelin, R. & Zeithaml, V. A. (1993). A dynamic process model of service quality: From expectations to behavioral intentions. *Journal of Marketing Research, 30* (1), 7-23.

Brady, M. K. & Cronin J. J. Jr. (2001a). Customer orientation: Effects on customer service perceptions and outcome behaviors. *Journal of Service Research, 3* (3), 241-251.

Brady, M. K. & Cronin, J. J. Jr. (2001b). Some new thoughts on conceptualizing perceived service quality: A hierarchical approach. *Journal of Marketing, 65*(3), 34-49.

Burns, A. C. & Bush, R. F. (1995). *Marketing research*. New Jersey: Prentice-Hall Inc.

Burton, S. (1990). The Framing of Purchase for Services. *The Journal of Services Marketing, 4* (4), 55-71.

Carman, J. M. & Langeard, E. (1980). Growth Strategies for Service Firms. *Strategic Management Journal, 1* (1), 7-22.

Cheung, C. & Law, R. (1998). Hospitality service quality and the role of performance appraisal. *Managing Service Quality, 8* (6), 402-415.

Copeland, F. (1927). As the sixty-ninth closes. *Nation's Business, 15* (3), 48-61.

Cronin, J. J. Jr. & Taylor, S. A. (1992). Measuring service quality: A reexamination and extension. *Journal of Marketing, 56* (3), 55-68.

Crosby, J. R. (1979). Fork failure-it can be avoided. *Industrial Engineering, 11* (6), 40-53.

Crosby, J. R. (1985). Developing local nationals in a multinational. *The Journal of Management Development, 4* (1), 36-49.

Dabholkar, P. A., Thorpe, D. I. & Rentz, J. O. (1996). A measure of service quality for retail stores: Scale development and validation. *Academy of Marketing Science. Journal, 24* (1), 3-23.

Day, R. L. (1969). Position bias in paired product tests. *Journal of Marketing Research, 6* (1), 98-101

Dube, L. & Renaghan, L. M. (2000). Creating visible customer value, *Cornell Hotel and Restaurant Administration Quarterly, 41* (1), 62-72.

Dube, L., Renaghan, L. M. & Miller, J. M. (1994). Measuring customer satisfaction for strategic management. *Cornell Hotel and Restaurant Administration Quarterly, 35* (1), 39-51.

Ekinci, Y. & Riley, M. (1999). Measuring hotel quality: back to basics. *International Journal of Contemporary Hospitality Management, 11* (6), 287-294.

Ferguson, J. M. (1982). Comments on "the impact of advertising on the price of consumer products". *Journal of Marketing, 46* (1), 102-117.

Flipo, J. P. (1988). On The Intangibility of Services. *The Service Industries Journal, 8* (3), 286-297.

Garvin, D. A. (1983). Quality on the Line. *Harvard Business Review, 61* (5), 65-79.

Goetsch, H. (1994 a). Are marketing plans passe? Does the sun rise? *Marketing News, 28* (25), 4-7.

Goetsch, H. (1994 b). Centralized marketing is still OK. *Marketing News, 28* (20), 4-6.

Gray, W. S. & Liguori, S. C. (1994). *Hotel and motel management and operations*. Princeton, N.J.: Upper Saddle River.

Gronroos, C. (1994). From marketing mix to relationship marketing: Towards a paradigm shift in marketing. *Management Decision, 32* (2), 4-13.

Gronroos, C. (1990). Relationship approach to marketing in service contexts: The marketing and organizational behavior interface. *Journal of Business Research, 20* (1), 3-12.

Gronroos, C. (1988). Service quality: the six criteria of good perceived service. *Review of Business, 9* (3), 10-21.

Gronroos, C. (1984). A service quality model and its marketing implications. *European Journal of Marketing, 18* (4), 36-44.

Gronroos, C. (1982). *Strategic management and marketing in the service sector*, Helsingfors: Swedish School of Economics and Business Administration

Gronroos, C. (1978). A service-oriented approach to marketing of services. *European Journal of Marketing, 12* (8), 588-603.

Guest, G. H. (1955). How to find and train tomorrow's bosses. *Business Quarterly, 20* (3), 168-180.

Hair, J. F., Anderson, R. E., Tatham, R. L., & Black, W. C. (1998). *Multivariate data analysis with Readings.* New Jersey: Prentice-Hall Inc.

Harrell, G. D., Hutt, M. D., & Anderson, J. C. (1980). Path analysis of buyer behavior under conditions of crowding. *Journal of Marketing Research, 17* (1), 45-61.

Henry, W. (2001). Tunica gets first black casino owner. *Tri - State Defender, 50* (50), 1A.

Hinkin, T. R. & Tracey, J. B. (2003a). The service imperative: Factors driving meeting effectiveness, *Cornell Hotel and Restaurant Administration Quarterly, 44,* 17-26.

Hinkin, T. R. & Tracey, J. B. (2003b). Continued relevance of factors driving meeting effectiveness, *Cornell Hotel and Restaurant Administration Quarterly, 44,* 27-30.

Hoffman, K D., Kelley, S. W. & Chung, B. C. (2003). A CIT investigation of servicescape failure and associated recovery strategies. *The Journal of Services Marketing, 17* (4), 322-340.

Hudson, E. D. (2003). Spokane, wash. *Mediaweek, 13* (45), 12-17.

Jacoby J., Chestnut, R. W. Fisher, W. A. (1978). A behavioral process approach to information acquisition in nondurable purchasing. *Journal of Marketing Research, 15* (4), 532.

Jacoby J., Kyner D. B. (1973). Brand loyalty vs. repeat purchasing behavior. *Journal of Marketing Research, 10* (1), 1.

Johns, N. (1992 a). Quality management in the hospitality industry: Part 1 - definition and specification. *International Journal of Contemporary Hospitality Management, 4* (3), 14-21.

Johns, N. (1992 b). Quality management in the hospitality industry: Part 2. applications, systems and techniques. *International Journal of Contemporary Hospitality Management, 4* (4), 3-12.

Johnson, R. L, Tsiros, M. & Lancioni, R. A. (1995). Measuring service quality: A systems approach. *The Journal of Services Marketing, 9* (5), 6-21.

Jones, J. P. (1984). Universal diminishing returns - True or false. *International Journal of Advertising, 3* (1), 27-43.

Jones, T. O, Sasser, W E. Jr. (1995). Why satisfied customers defect. *Harvard Business Review, 73* (6), 88-103.

Juran, J. M. (1989, May). Universal approach to managing for quality. *Executive Excellence, 6* (5), 15-27.

Khan, M. (2003). ECOSERV: Ecotourists' quality expectations. *Annals of Tourism Research, 30* (1), 109 - 124.

Khan, M.A. (1982). Factors affecting consumer food preferences and their utilization in hospitality management, in Pizam, A. et al. (Eds), *The Practice of Hospitality Management*, AVI Publishing Co., 1982, pp. 455-64

Khan, M. M. (1996). ECOSERV: An examination of service quality expectations of the ecotourists. *ProQuest Dissertations and Theses, 0338* (0247), 227. (UMI No. 9712736)

Kahn, B. E., Kalwani, M. U. & Morrison, D. G. (1988). Niching versus change-of-pace brands: using purchase frequencies and penetration rates to infer brand positionings. *Journal of Marketing Research, 25* (4), 384-399.

Koernig, S. K. (2003). E-scapes: The electronic physical environment and service tangibility. *Psychology & Marketing, 20* (2), 151-167.

Kotler, P. (1973). Buying is marketing too! *Journal of Marketing, 37* (1), 54-67.

Kotler, P., Bowen, J. & Makens, J. (1998). *Marketing for hospitality and tourism* (2ed ed.) Upper Saddle River, NJ: Prentice Hall.

Lakhe, R. R. & Mohanty, R. P. (1995). Understanding TQM in service systems. *The International Journal of Quality & Reliability Management, 12* (9), 139-151.

Lattin, G. W. (1998). *The lodging and food service industry* (4th ed.). Lansing, MI: Educational Institute of the American Hotel & Motel Association.

Lau, P. M., Akbar, A., Khatibi, F. & Gun, D. Y. (2005). Service quality: A study of the luxury hotels in Malaysia. *Journal of American Academy of Business, Cambridge, 7* (2), 46-55.

Lee, Y. L. & Hing, N. (1995). Measuring quality in restaurant operations: an application of the SERVQUAL instrument. International Journal of Hospitality Management, 14 (3-4), 293-305.

Lehtinen, U. & Lehtinen, J. R. (1991). Two approaches to service quality dimensions. *The Service Industries Journal, 11* (3), 287-298.

Lewis, R.C. (1985). The market position: Mapping guests' perceptions of hotel operations. *Cornell hotel and restaurant administration quarterly*, August, 86-99.

Lewis, R.C. (1984). The basis of Hotel Selection. *Cornell hotel and restaurant administration quarterly*, May, 54-69.

Lovelock, C. H. (1983). Classifying services to gain strategic marketing insights. *Journal of Marketing, 47* (3), 9-21.

Lucas, A. F. (2003). The determinants and effects of slot servicescape satisfaction in a Las vegas hotel casino. *UNLV Gaming Research & Review Journal, 7* (1), 1-17.

McDougall, G. H. G. & Levesque, T. J. (1994). A revised view of service quality dimensions: An empirical investigation. *Journal of Professional Services Marketing, 11* (1), 189-204.

Mehrabian, A. & Russell, J. A. (1974). An approach to environmental psychology. Cambrige: MIT Press.

Milliman, R. E. (1986). The influence of background music on the behavior of restaurant patrons. *Journal of Consumer Research, 13* (2), 286 - 289.

Milliman, R. E. (1982). Using background music to affect the behavior of supermarket shoppers. *Journal of Marketing, 46* (3), 86 - 91.

Mittal, B. & Baker, J. (1998). The services marketing system and customer psychology. *Psychology & Marketing, 15* (8), 727-733.

Motwani, J., Kumar, A. & Youssef, M. A. (1996). Implementing quality management in the hospitality industry Current efforts and future research directions. *Benchmarking for Quality Management & Technology, 3* (4), 4-19.

Nightingale, K. (1985). Eight weapons of a market leader. *Industrial Marketing Digest, 10* (1), 91-108.

Nunnally, J. C. (1967). *Psychometric theory*. New York: McGrew-Hill.

Oberoi, U. & Hales, C. (1990). Assessing the quality of the conference hotel service product: Towards an empirically based model. *The Service Industries Journal, 10* (4), 700-718.

Oliver, R. L. (1999). Whence consumer loyalty? *Journal of Marketing, 63*, 33-44.

Oliver, R. L. (1980). A cognitive model of the antecedents and consequences of satisfaction decisions. *Journal of Marketing Research, 17* (4), 460-476.

Parasuraman A. (1998). Customer service in business-to-business markets: an agenda for research. *The Journal of Business & Industrial Marketing, 13* (4), 309-321.

Parasuraman, A. (1985). A conceptual model of service quality and its implications for future research. *Journal of Marketing , 49* (4), 41-50.

Parasuraman, A., Berry, L. L. & Zeithaml, V. A. (1993). Research note: More on improving quality measurement. *Journal of Retailing, 69* (1), 140-148.

Parasuraman, A., Berry, L. L. & Zeithaml, V. A. (1991a). Perceived service quality as a customer-based performance measure: An empirical examination of

organizational barriers using an extended service quality model. *Human Resource Management, 30* (3), 335-343.

Parasuraman, A., Berry, L. L. & Zeithaml, V. A. (1991b). Refinement and reassessment of the SERVQUAL scale. *Journal of Retailing, 67* (4), 420-450.

Parasuraman, A., Berry, L. L. & Zeithaml, V. A. (1991c). Understanding customer expectations of service. *Sloan Management Review, 32* (3), 39-49.

Parasuraman, A., Berry L.L. & Zeithamal V. A. (1988). SERVQUAL: A multi-item scale for measuring consumer perceptions of service quality, *Journal of Retailing, 64* (1), 12-40.

Parasuraman, A., Zeithaml, V. A. & Berry, L. L. (1994). Reassessment of expectations as a comparison standard in measuring service quality: Implications for further research. *Journal of Marketing, 58* (1), 111-127.

Parasuraman, A., Zeithaml, V. A. & Berry, L. L. (1986). Reassessment of expectations as a comparison standard in measuring service quality: Implications for further research. *Journal of Marketing, 58* (1), 111-125.

Parasuraman, A., Zeithaml, V. A. & Berry, L. L. (1986). *SERVEQUAL, a multiple-item scale for measuring customer perceptions of service quality.* Cambridge, Mass.: Marketing Science Institute.

Parasuraman, A., Zeithaml, V. A. & Berry, L. L. (1985). A conceptual model of service quality and its implications for future research. *Journal of Marketing, 49* (4), 41-51.

Peter, J. P., Churchill, G. A. Jr. & Brown, T. J. (1993). Caution in the use of difference scores in consumer research. *Journal of Consumer Research, 19* (4), 655-670.

Pranter, C. A. & Martin, C. L. (1991). Compatibility management: roles in service performers. *The Journal of Services Marketing, 5*(2), 43-58.

Pun, K.-F. & Ho, K. Y. (2001). Identification of service quality attributes for restaurant operations: A Hong Kong case. *Managing Service Quality, 11* (4), 233-240.

Quan, D. C., Li, J. & Sehgal, A. (2002). The performance of lodging properties in an investment portfolio, *The Cornell Hotel and Restaurant Administration Quarterly, 43* (6), 81-90.

Reeves, C. A & Bednar, D. A. (1994). Defining quality: Alternatives and implications. Academy of Management. *The Academy of Management Review, 19* (3), 419-424.

Regan, W. J. (1963). The service revolution. *Journal of Marketing, 27* (3), 57-72.

Rosenbaum, M. D. (2005). Hyatt finds its place. Meetings & Conventions, Supplement, 5-7.

Russell, J. A. & Ward, L. M. (1982). Environmental psychology. *Annual Review of Psychology, 33*, 51-71.

Rust, R. T. & Oliver, R. W. (1994). Video dial tone. *The Journal of Services Marketing, 8* (3), 5-16.

Rust, R. T. & Zahorik, A. J. (1993). Customer satisfaction, customer retention, and market share. *Journal of Retailing, 69* (2), 193-208.

Saleh, F. & Ryan, C. (1991). Analyzing service quality in the hospitality industry using. *The Service Industries Journal, 11* (3), 324-339.

Saunders, H. A. & Renaghan, L. M. (1992). Southeast Asia: A new model for hotel development. *Cornell Hotel and Restaurant Administration Quarterly, 33* (5), 16-34.

Schneider, B. & Bowen, D. E. (1985). Employee and customer perceptions of service in banks: replication and extension. *Journal of Applied Psychology, 70* (3), 423-439.

Shostack, G. L. (1977). Banks sell services - Not things. *The Bankers Magazine, 160* (1), 40-43.

Spangenberg, E. R., Crowley, A. E. &, Henderson, P.W. (1996). Improving the store environment: Do olfactory cues affect evaluations and behaviors? *Journal of Marketing, 60* (2), 67-79.

Spencer, B. A. (1994). Models of organization and total quality management: A comparison and critical evaluation. Academy of Management. *The Academy of Management Review, 19* (3), 446-461.

Steele, L. W. (1991). Needed: new paradigms for R&D. *Research Technology Management, 34* (4), 13-27.

Stevens, P., Knutson, B. & Patton, M. (1995). DINESERV: A tool for measuring service quality in restaurant. *Cornell Hotel and Restaurant Administration Quarterly, 36* (2), 56 - 60.

Sweeney, J. C., Johnson, L. W.& Armstrong, R. W. (1992). The effect of cues on service quality expectations and service selection in a restaurant setting. *The Journal of Services Marketing, 6* (4), 15-31.

Turley, L. W. & Fugate, D. L. (1992). The multidimensional nature of service facilities: viewpoints and recommendations. *The Journal of Services Marketing, 6* (3), 37-53.

Turley, L. W., & Milliman, R. E. (2000). Atmospheric effect on shopping behavior: A review of the experimental evidence. *Journal of Business Research, 49* (2), 193-211.

Upah, G. D. (1980). Mass marketing in service retailing: A review and synthesis of major methods. *Journal of Retailing, 56* (3), 59-75.

Wakefield, K. L, Blodgett, J. G. (1999). Customer response to intangible and tangible service factors. *Psychology & Marketing, 16* (1), 51-65.

Wakefield, K. L., Blodgett, J. G. (1996). The effect of the servicescape on customers' behavioral intentions in leisure service settings. *The Journal of Services Marketing, 10* (6), 45-62.

Wakefield, K. L, Blodgett, J. G. (1994). The importance of servicescapes in leisure service settings. *The Journal of Services Marketing, 8* (3), 66 - 76.

Ward, J. C., Bitner, M. J. & Barnes, J. (1992). Measuring the prototypicality and meaning of retail environments. *Journal of Retailing, 68* (2), 194-209.

Yee, R. (2005). *Hotel and restaurant Design*. New York: visual reference publications.

Zeithaml, V. A. (2000). Service quality, profitability, and the economic worth of customers: What we know and what we need to learn. *Academy of Marketing Science Journal, 28* (1), 67-85.

Zeithaml, V. A. (1988). Consumer perceptions of price, quality, and value: a means-end model and synthesis of evidence. *Journal of Marketing, 52* (3), 2-19.

Zeithaml, V. A. (1981). How consumer evaluation processes differ between goods and services. In Donnelly, J. H. & George, W. R. (Eds.), *Marketing of Services* (pp. 186-190). Chicago, IL: American Marketing Association.

Zeithaml, V. A. & Bitner, M. J. (2003). Services marketing: Integrating customer focus across the firm. Boston: McGraw-Hill/Irwin.

Zeithaml, V. A. & Bitner, M. J. (1996). Service marketing. New York: MaGraw-Hill.

Zeithaml, V. A, Berry, L. L. & Parasuraman, A. (1996). The behavioral consequences of service quality. *Journal of Marketing, 60* (2), 31- 46.

Zeithaml, V. A., Berry, L. L. & Parasuraman, A. (1994). Alternative scales for measuring service quality: A comparative assessment based on psychometric and diagnostic criteria. *Journal of Retailing, 70* (3), 201-231.

Zeithaml, V. A., Berry, L. L. & Parasuraman, A. (1993). The nature and determinants of customer expectations of service. *Academy of Marketing Science Journal, 21* (1), 1-13.

Zeithaml, V. A., Varadarajan, P. & Zeithaml, C. P. (1988 a). The contingency approach: Its foundations and relevance to theory building and research in marketing. *European Journal of Marketing, 22* (7), 37-55.

Zeithaml, V. A., Berry, L. L. & Parasuraman, A. (1988 b). Communcation and control processes in the delivery of service. *Journal of Marketing, 52* (2), 35-49.

Zeithaml, V. A., Parasuraman, A. & Berry, L. L. (1985). Problems and strategies in services marketing. *Journal of Marketing, 49* (2), 33-47.

APPENDICES

Appendix A Cover Letter

Cover Letter

May, 2006

Greetings:

I am a doctoral candidate in the School of Hotel and Restaurant Administration at Oklahoma State University and I am currently working on my dissertation. The main purpose of my dissertation is to understand the perceived quality of physical environment in hotels. You are invited to participate in this study by completing the accompanying survey. The questionnaire should take approximately ten to fifteen minutes to complete. Your participation and opinions are very critical to the success of my study.

There are no right or wrong answers to any questions. We are just interested in your views and experiences in the hotel. You indicate your voluntary agreement to participate by completing and returning this questionnaire. You may discontinue participation at any time without penalty.

Data is being collected for academic purposes only. All responses will remain strictly confidential, and results will be presented only in summary form. Only the principal investigators will have access to the data. The completed questionnaires will be stored in a locked cabinet, and coded data will be stored in password protected computers in a room that regularly locked. After 10 years, the electronic data and completed questionnaires will be destroyed. If you are interested in obtaining a summary of my findings, please send me an e-mail requesting results.

There are potential benefits to your participation in this study. Completed questionnaires will help the researchers be able to better understand physical environment of hotel industry and hotel managers will be able to more efficiently and effectively invest their budget to provide the best quality physical environment. Therefore the hotel guests including you may benefit in the hotel industry from the application of the results of the study.

The OSU IRB has the Authority to inspect consent records and data files to assure compliance with approved procedures.

If you have any questions about this project, please contact Yunkyong Kim by regular mail: before September, 2006- 2001 N. Perkins Rd. Apt N-163 Stillwater, OK 74075 U.S.A. Phone:405-334-8364, or e-mail: yunkyong.kim@okstate.edu/ after September, 2006- the mail address: 22 Olive Ave. #1002 North York ON. M2N7G CANADA Phone: 416-803-6362, or e-mail:juliakyk@yahoo.ca. A copy of the results of the study will be provided to you upon request. If you would like a copy of the summarized results, please supply your name and address on the attached pre-addressed & pre-stamped postcard and send. You may also contact Dr. Dr. Bill Ryan by regular mail: School of Hotel and Restaurant Administration at Oklahoma State University, 210 HESW Stillwater, OK U.S.A. 74078, phone: 405-744-8485, fax: 405-744-6299, or e-mail: b.ryan@okstate.edu. In case you have questions or concerns about your rights as a research participant, please feel free to contact Dr. Sue Jacobs, Oklahoma State University's chair of Institutional Review Board by phone: 1-405-744-1676, e-mail: irb@okstate.edu, or regular mail: 415 Whitehurst, Stillwater OK U.S.A. 74078. Your participation is greatly appreciated.

Thank you for your cooperation.

Yunkyong Kim, Doctoral Candidate
School of Hotel and Restaurant Administration,
Oklahoma State University
2001 N. Perkins Rd. Apt.N-163
Stillwater OK. U.S.A. 74075
Phone: (405)-334-8364
E-mail:yunkyong.kim@okstate.edu

Dr. Bill Ryan, Associate Professor and Associate Director of HRAD

School of Hotel and Restaurant Administration,
Oklahoma State University
210 HESW Stillwater, OK U.S.A. 74078
Phone: (405)-744-8485
Fax: 405-744-6299
E-mail:b.ryan@kstate.edu

Appendix B The Questionnaire –English

A Study of Understanding the Impact of Physical Environment on Perceived Service Quality in the Hotel Industry

Introduction

Please take the time to respond to the following questions carefully. The purpose of this survey is to investigate your perceived quality of the physical environment in the hotel industry. Think about your experience at the "A" hotel and answer the following questions. Please answer all questions, as there are no right or wrong answers; just your opinions. The results of this survey will only be used to conduct a statistical analysis. Your participation is greatly appreciated and helpful.

Please rate the following questions using the point scale below when thinking about what is important to your perceived quality of the physical environment service at "A" hotel:

① Strongly disagree ② Disagree ③ Moderately disagree ④ Neither agree nor disagree
⑤ Moderately agree ⑥ Agree ⑦ Strongly agree

I. The following questions are about factors of a public space of the hotel where you have visited. The scale ranges from 1 to 7, how much you "Strongly Disagree" to "Strongly Agree." Please circle only one number on the scale per statement.

Questions	Strongly disagree						Strongly agree
The overall lighting level in this hotel environment is appropriate.	①	②	③	④	⑤	⑥	⑦
The temperature in this hotel is comfortable.	①	②	③	④	⑤	⑥	⑦
The aroma in this hotel makes me feel good.	①	②	③	④	⑤	⑥	⑦
The background music played overhead makes this hotel a more enjoyable place.	①	②	③	④	⑤	⑥	⑦
This hotel's architecture gives it an attractive character.	①	②	③	④	⑤	⑥	⑦
This hotel is decorated in an attractive fashion.	①	②	③	④	⑤	⑥	⑦
This is an attractive hotel.	①	②	③	④	⑤	⑥	⑦
The use of color in the décor scheme adds excitement to this hotel's environment.	①	②	③	④	⑤	⑥	⑦
The bright and colorful electric signs add excitement to this hotel's environment.	①	②	③	④	⑤	⑥	⑦
The wall treatments of this hotel's environment are attractive (curtain, paper, paint, etc.).	①	②	③	④	⑤	⑥	⑦
The floor treatments of this hotel's environment are attractive (tile, wood, carpeting, etc.).	①	②	③	④	⑤	⑥	⑦
The interior décor of this hotel is attractive.	①	②	③	④	⑤	⑥	⑦
Employee's uniforms are attractive.	①	②	③	④	⑤	⑥	⑦
The layout of this hotel public space's floor allows a person to easily see across it.	①	②	③	④	⑤	⑥	⑦
I enjoy spending time at this hotel.	①	②	③	④	⑤	⑥	⑦
In this hotel, the aisles between the furniture are wide enough to pass through easily.	①	②	③	④	⑤	⑥	⑦
The signs in this hotel's environment provide adequate direction.	①	②	③	④	⑤	⑥	⑦
It is easy to walk around this hotel public space's environment and find what you are looking for.	①	②	③	④	⑤	⑥	⑦
The amount of furniture does not make this hotel public space's environment difficult to navigate.	①	②	③	④	⑤	⑥	⑦
This hotel public space's layout makes it easy to get the service you want.	①	②	③	④	⑤	⑥	⑦
This hotel public space's layout makes it easy to get to your room.	①	②	③	④	⑤	⑥	⑦
This hotel's layout makes it easy to get to another place.	①	②	③	④	⑤	⑥	⑦
Overall, this hotel public space's layout makes it possible to get to a desired place.	①	②	③	④	⑤	⑥	⑦
The audio/video machines in public space make this hotel interesting.	①	②	③	④	⑤	⑥	⑦

I. The following questions are about factors of a public space of the hotel where you have visited. The scale ranges from 1 to 7, how much you "Strongly Disagree" to "Strongly Agree." Please circle only one number on the scale per statement (Cont.).

Questions	Strongly disagree						Strongly agree
This hotel has high quality audio/video machines.	①	②	③	④	⑤	⑥	⑦
This hotel maintains clean public restrooms.	①	②	③	④	⑤	⑥	⑦
This hotel maintains clean public customer service areas.	①	②	③	④	⑤	⑥	⑦
This hotel maintains clean walkways and exits.	①	②	③	④	⑤	⑥	⑦
This hotel public space's environment is clean.	①	②	③	④	⑤	⑥	⑦
Employees in this hotel's public environment are polite and courteous.	①	②	③	④	⑤	⑥	⑦
Employees in this hotel display personal warmth in their behavior.	①	②	③	④	⑤	⑥	⑦
Employees in this hotel are happy to serve the customers.	①	②	③	④	⑤	⑥	⑦
Employees in this hotel do not seem bothered by customer requests.	①	②	③	④	⑤	⑥	⑦
Employees in this hotel are neat in appearance.	①	②	③	④	⑤	⑥	⑦
Employees respond to customer requests quickly.	①	②	③	④	⑤	⑥	⑦
Prompt service is important to employees at this hotel.	①	②	③	④	⑤	⑥	⑦

II. The following questions are about factors of the hotel guest room where you have visited.

Questions	Strongly disagree						Strongly agree
The overall lighting level in your hotel guest room is appropriate.	①	②	③	④	⑤	⑥	⑦
The temperature in your hotel guest room is comfortable.	①	②	③	④	⑤	⑥	⑦
The aroma in your hotel guest room makes me feel good.	①	②	③	④	⑤	⑥	⑦
Your hotel guest room is decorated in an attractive fashion.	①	②	③	④	⑤	⑥	⑦
You are attracted to your hotel guest room.	①	②	③	④	⑤	⑥	⑦
The use of color in the décor scheme adds excitement to your hotel guest room's environment.	①	②	③	④	⑤	⑥	⑦
The bright and colorful electric signs add excitement to your hotel guest room's environment.	①	②	③	④	⑤	⑥	⑦
The wall treatments of your hotel guest room are attractive (curtain, paper, paint, etc.).	①	②	③	④	⑤	⑥	⑦
The floor treatments of your hotel guest room are attractive (tile, wood, carpeting, etc.).	①	②	③	④	⑤	⑥	⑦
The interior décor of your hotel guest room is attractive.	①	②	③	④	⑤	⑥	⑦
Employee's uniforms are attractive (House keeper, Room service man, etc.).	①	②	③	④	⑤	⑥	⑦
In your hotel guest room, the aisles between the guest rooms are wide enough to pass through easily.	①	②	③	④	⑤	⑥	⑦
The amount of furniture in your hotel guest room does not make it difficult to navigate.	①	②	③	④	⑤	⑥	⑦
Your hotel guest room's layout makes it easy to get the service you want.	①	②	③	④	⑤	⑥	⑦
Your hotel guest room's layout makes it easy to get to another place.	①	②	③	④	⑤	⑥	⑦
Overall, your hotel guest room's layout makes it possible to get to a desired place.	①	②	③	④	⑤	⑥	⑦
The audio/video machines make your hotel guest room interesting.	①	②	③	④	⑤	⑥	⑦
The audio/video machines add excitement to the place.	①	②	③	④	⑤	⑥	⑦
The audio/video machines are entertaining to watch.	①	②	③	④	⑤	⑥	⑦
Your hotel guest room has high quality audio/video machines.	①	②	③	④	⑤	⑥	⑦
The furniture in your hotel guest room is comfortable.	①	②	③	④	⑤	⑥	⑦
The electric equipment in your hotel guest room is convenient.	①	②	③	④	⑤	⑥	⑦
The arrangement of furniture, fixtures and electric equipment in your hotel guest room provides plenty of space.	①	②	③	④	⑤	⑥	⑦

II. The following questions are about factors of the hotel guest room where you have visited (Cont.).

Questions	Strongly disagree						Strongly agree
Your hotel maintains clean guest room.	①	②	③	④	⑤	⑥	⑦
Your hotel guest room maintains clean customer service areas (mini bar, guest laundry room, vending machines including ice machine area).	①	②	③	④	⑤	⑥	⑦
Your hotel guest room maintains clean walkways, entrances, and balcony	①	②	③	④	⑤	⑥	⑦
Your hotel guest room's environment is clean.	①	②	③	④	⑤	⑥	⑦
Employees in this hotel guest room's environment are polite and courteous.	①	②	③	④	⑤	⑥	⑦
Employees in this hotel guest room display personal warmth in their behavior.	①	②	③	④	⑤	⑥	⑦
Employees in your hotel guest room are happy to serve the customers.	①	②	③	④	⑤	⑥	⑦
Employees in this hotel guest room do not seem bothered by customer requests.	①	②	③	④	⑤	⑥	⑦
Employees in your hotel guest room are neat in appearance.	①	②	③	④	⑤	⑥	⑦
Employees respond to customer requests quickly.	①	②	③	④	⑤	⑥	⑦
Prompt service is important to employees at this hotel guest room.	①	②	③	④	⑤	⑥	⑦

III. The following questions are about the perceived quality of the "A" hotel you have visited. The scale ranges from 1 to 7. Please circle only one number on the scale per statement.

The intangible service quality of this hotel is	terrible ①	②	③	④	⑤	⑥	great ⑦
The tangible service quality of this hotel is	terrible ①	②	③	④	⑤	⑥	great ⑦
The overall quality of this hotel is	terrible ①	②	③	④	⑤	⑥	great ⑦

IV. The following questions are about the customer loyalty of the "A" hotel you have visited. The scale ranges from 1 to 7. Please circle only one number on the scale per statement.

Questions	Strongly disagree						Strongly agree
I say positive things about this hotel to other people.	①	②	③	④	⑤	⑥	⑦
I would to recommend this hotel to the other people	①	②	③	④	⑤	⑥	⑦
I intend to continue doing business with this hotel over the next few years.	①	②	③	④	⑤	⑥	⑦
I encourage friends and relatives to do business with this hotel.	①	②	③	④	⑤	⑥	⑦
I really like doing business with this hotel.	①	②	③	④	⑤	⑥	⑦
I try to use this hotel every time I need hotel services.	①	②	③	④	⑤	⑥	⑦
I consider this hotel to be my first choice when I need hotel.	①	②	③	④	⑤	⑥	⑦
If I have chance, I want to stay this hotel again	①	②	③	④	⑤	⑥	⑦
I consider my self to be a loyal customer of this hotel.	①	②	③	④	⑤	⑥	⑦
Overall, I am very loyal to this hotel.	①	②	③	④	⑤	⑥	⑦
I recommend this hotel whenever anyone seeks my advice.	①	②	③	④	⑤	⑥	⑦

V. The following questions pertain to demographic information. Please choose one answer per question that is the most appropriate for you.

1. What is your gender?
   Male □ Female □

2. Where is your (current) residency?
   North America □ South America □ Europe □ Australia □ Asia □

3. What is your age?
   18 – 27 □ 28 – 37 □ 38 – 47 □ 48 – 57 □ 58 – 67 □ Over 68 □

4. How many times per year do you visit a hotel?
   1 – 2 □ 3 – 4 □ 5 – 6 □ 7 – 8 □ 9 – 10 □ over 10 □

5. How much is your annual household income in U.S. dollars?
   Under $35,000 □ $35,000 - $50,000 □ $50,001 - $65,000 □
   $65,001- $80,000 □ $80,001 - $100,000 □ Over $100,000 □

6. What was the last year of school you completed?
   Grade school or less □
   Some high school □
   High school graduate □
   Some college or trade school □
   College/Univ. Graduate □
   Post-graduate work □
   Prefer not to answer □

7. What is your marital status?
   Single □ Married □ Divorced □ Widowed □ Separated □

8. What is your purpose of this travel?
   For business □ For leisure □ For leisure and business □
   To join a convention □ Visit relatives □ Others □

THANK YOU FOR YOUR PARTICIPATION!

When you have finished this questionnaire, please seal the questionnaire and drop it in the box at the front desk when you check out.

Appendix C The Questionnaire –Korean

설 문 지

안녕하십니까?
바쁘신 중에서도 설문에 응해주셔서 감사합니다. 이 설문은 본 연구자의 박사학위 논문자료로 사용될 것입니다. 본조사는 호텔을 이용하는 소비행태를 알아보기위해 작성된 것입니다. 호텔서비스에 대한 서비스평가를 바탕으로 더 낳은 서비스 대안을 수립하는데 그 목적이 있으며 각 질문에 대한 정답이나 좋은 대답이란없으며 귀하께서 경험하시고 느껴진 대로만 응답하여 주시면 됩니다.
본 설문지를 통해 얻어진 자료는 오직 학문적인 연구목적으로만 사용될 것이며, 본 설문에 따른 귀하의 개인적인 사랑은 모두 익명으로 처리됩니다. 따라서 설문내용과 관련된 귀하의 비밀은 절대 보장될 것입니다.
본 설문에 대한 귀하의 정확하고 정의있는 응답결과는 연구에 매우 귀중한 자료가 될 것 입니다. 부디 설문 내용을 빠뜨리지 마시고 끝까지 응답해 주시기를 부탁드리며 귀하와 귀사의 건승을 기원합니다.

2006 년 5 월

Yunkyong Kim, Doctoral Candidate
School of Hotel and Restaurant Administration,
Oklahoma State University
2001 N. Perkins Rd. Apt.N-163
Stillwater OK. U.S.A. 74075
Phone: (405)-334-8364
E-mail:yunkyong.kim@okstate.edu

Dr. Bill Ryan, Associate Professor and Associate Director of HRAD
School of Hotel and Restaurant Administration,
Oklahoma State University
210 HESW Stillwater, OK U.S.A. 74078
Phone: (405)-744-8485
Fax: 405-744-6299
E-mail:b.ryan@kstate.edu

호텔 이용시 지각된 서비스 질에 대해 물리적 환경이 미치는 영향에 대한 연구

(A Study of Understanding the Impact of Physical Environment on Perceived Service Quality in the Hotel Industry)

다음의 각문항에 대해 귀하의 의견과 일치하는 것에 v(체크) 해 주십시오.

귀하가 방문하신 호텔의 물리적 환경의 서비스 질에 대해 귀하께서 중요하다고 느끼신대로 7점으로 나누어 등급을 매겨 주시기 바랍니다.

① 매우동의하지 않음 ② 동의하지 않음 ③ 약간 동의하지 않음 ④ 보통 ⑤ 약간 동의함 ⑥ 동의함 ⑦ 매우 동의함

Ⅰ.다음은 귀하께서 방문하신 호텔의 공공장소(주차장, 현관, 프런트데스크, 로비, 화장실, 커피라운지 등)에 관한 질문입니다. 귀하의 의견과 일치하는 곳에 체크해 주십시오.

질문	매우 동의하지않음①			보통④			매우 동의함⑦
이 호텔의 전체적 조명은 적절하다.	①	②	③	④	⑤	⑥	⑦
이 호텔의 실내 온도는 적정 수준이다 .	①	②	③	④	⑤	⑥	⑦
이 호텔 실내의 향기는 기분을 좋게 한다.	①	②	③	④	⑤	⑥	⑦
이 호텔 실내의 로비에서 들리는 음악은 이호텔을 더 즐거운 장소로 느껴지게 한다.	①	②	③	④	⑤	⑥	⑦
이 호텔의 건물 외관은 아주 매력적이다.	①	②	③	④	⑤	⑥	⑦
이 호텔은 아주 세련되고 매력으로 장식되어 있다 꾸며져 있다.	①	②	③	④	⑤	⑥	⑦
이 호텔은 아주 매력적이다.	①	②	③	④	⑤	⑥	⑦
이 호텔의 장식에 쓰인 색깔은 이 호텔 을 더 매력적이고 쾌적한 환경을 제공한다.	①	②	③	④	⑤	⑥	⑦
이 호텔의 외관에 설치된 네온 사인과 실내 안내 표시들이 호텔의 환경을 더 매력적이고 쾌적하게 만든다.	①	②	③	④	⑤	⑥	⑦
이 호텔의 벽지와 장식들은 아주 매력적이다. (예를 들면, 커튼, 벽지, 페인트, 등등)	①	②	③	④	⑤	⑥	⑦
이 호텔의 바닥에 사용된 나무나 카페등은 아주 매력적이다. (예를 들면, 타일, 나무, 카펫 등등)	①	②	③	④	⑤	⑥	⑦
이 호텔 실내 기타 인테리어 장식들은 아주 매력적이다.	①	②	③	④	⑤	⑥	⑦
종업원들의 유니폼은 아주 멋있다.	①	②	③	④	⑤	⑥	⑦
이 호텔 실내 디자인은 사용하기에 아주 편리하게 설계되어 있다.	①	②	③	④	⑤	⑥	⑦
나는 이 호텔에서 시간 보내는 것이 즐겁다.	①	②	③	④	⑤	⑥	⑦
이 호텔 실내의 통로와 실내 장식물간의 거리는 지나다니기에 충분하다.	①	②	③	④	⑤	⑥	⑦
이 호텔공공장소에서 볼 수 있는 간판 또는 표시(SIGN)는 제대로 방향을 잘 알려주고 있다.	①	②	③	④	⑤	⑥	⑦
이 호텔 내에서는 가려는 곳(레스토랑, 로비, 비지니스 센터 등)을 쉽게 찾을 수 있다	①	②	③	④	⑤	⑥	⑦
이 호텔내에 설치되어 있는 장식물이나 가구들의 양은 고객들이 지나다니는데 불편하지 않게 적당하다.	①	②	③	④	⑤	⑥	⑦
이 호텔의 실내 디자인은 고객이 편리하게 원하는 서비스 (안내, 프론트 데스크등)를 받을수 있게 설계되어 있다.	①	②	③	④	⑤	⑥	⑦
이 호텔의 실내 디자인은 객실을 찾기에 편리하게 되어 있다.	①	②	③	④	⑤	⑥	⑦
이 호텔의 실내 디자인은 호텔내에서의 이동을 편리하게 한다.	①	②	③	④	⑤	⑥	⑦
전체적으로 이 호텔 공공장소의 실내 디자인은 호텔이용에 편리하게	①	②	③	④	⑤	⑥	⑦

되어있다.	
이 호텔의 공공장소에 비치되어 있는 오디오/비디오 기계들은 이 호텔을 더 흥미롭게 한다.	① ② ③ ④ ⑤ ⑥ ⑦
이 호텔의 공공장소에는 고급의 오디오/비디오 기계들을 비치되어 있다.	① ② ③ ④ ⑤ ⑥ ⑦
이 호텔내 화장실들은 항상 깨끗하게 유지한다.	① ② ③ ④ ⑤ ⑥ ⑦
이 호텔내 고객서비스를 제공하는 (로비, 커피숍등)시설들은 깨끗이 유지한다.	① ② ③ ④ ⑤ ⑥ ⑦
이 호텔은 공공장소의 출구와 통로를 깨끗이 유지한다.	① ② ③ ④ ⑤ ⑥ ⑦
이 호텔의 공공장소의 환경은 깨끗하다.	① ② ③ ④ ⑤ ⑥ ⑦
이호텔의 공공장소에서 일하는 종업원들은 친절하고 예의가 바르다.	① ② ③ ④ ⑤ ⑥ ⑦
이호텔의 공공장소에서 일하는 종업원들은 그들의 행동에서 개인적 친근감을 느끼게 한다.	① ② ③ ④ ⑤ ⑥ ⑦
이호텔의 종업원들은 고객들에게 서비스하는 것을 행복하게 생각하는 것 같다.	① ② ③ ④ ⑤ ⑥ ⑦
이 호텔의 종업원들은 고객들의 요구를 들어주는데 귀찮아 하지 않는다.	① ② ③ ④ ⑤ ⑥ ⑦
이 호텔의 종업원들의 외모는 단정하다.	① ② ③ ④ ⑤ ⑥ ⑦
이 호텔의 종업원들은 고객의 요구에 신속히 대답한다(반응한다).	① ② ③ ④ ⑤ ⑥ ⑦
신속한 서비스는 이 호텔에서 일하는 종업원들에게 중요하다.	① ② ③ ④ ⑤ ⑥ ⑦

II. 다음은 귀하께서 방문하신 호텔의 객실에 관한 질문입니다. 귀하의 의견과 일치하는 곳에 체크해 주십시오.

질문	매우 동의하지않음①			보통④			매우 동의함⑦
내가 머문 호텔 객실 조명은 전체적으로 적절하다.	①	②	③	④	⑤	⑥	⑦
내가 머문 호텔 객실의 온도는 적당하다.	①	②	③	④	⑤	⑥	⑦
내가 머문 호텔 객실의 향기는 는 나를 기분좋게 한다.	①	②	③	④	⑤	⑥	⑦
내가 머문 호텔 객실은 아주 멋지게 장식되어 있다.	①	②	③	④	⑤	⑥	⑦
내가 머문 호텔객실은 아주 매력적이다.	①	②	③	④	⑤	⑥	⑦
내가 머문 호텔 객실의 장식에 쓰인 색깔은 이 호텔 객실의 환경을 더 매력적이고 쾌적하게 만든다.	①	②	③	④	⑤	⑥	⑦
내가 머문 호텔 객실의 간판과 실내안내 표시의 밝기와 색깔은 이 호텔 객실의 환경을 더 매력적이고 쾌적하게 만든다.	①	②	③	④	⑤	⑥	⑦
내가 머문 호텔 객실의 벽에 대한 치장은 아주 매력적이다. (예를 들면, 커튼, 벽지, 페인트, 등등)	①	②	③	④	⑤	⑥	⑦
내가 머문 호텔 객실의 바닥(카펫, 화장실 타일등)은 아주 매력적이다.	①	②	③	④	⑤	⑥	⑦
내가 머문 호텔 객실의 인테리어 장식은 아주 매력적이다.	①	②	③	④	⑤	⑥	⑦
종업원들의 유니폼은 아주 멋있다.(하우스키핑 종업원, 룸서비스맨. 등)	①	②	③	④	⑤	⑥	⑦
내가 머문 호텔 객실층의 객실안의 공간은 지나다니기에 충분하다.	①	②	③	④	⑤	⑥	⑦
내가 머문 호텔 객실에 사용되고 있는 가구들의 수는 내가 이용하기에 적당해서 사용하는데 불편하게 하지 않는다.	①	②	③	④	⑤	⑥	⑦
내가 머문 호텔 객실의 구조는 내가 원하는 서비스를 받고자할때 편리하게 받을 수 있도록 구성되어 있다.	①	②	③	④	⑤	⑥	⑦
내가 머문 호텔 객실구조는 다른 장소로 이동하기 편리하도록 되어 있다	①	②	③	④	⑤	⑥	⑦
전체적으로 내가 머문 호텔 객실구조는 원하는 장소로 이동하기 편하게 구성되어져 있다.	①	②	③	④	⑤	⑥	⑦
내가 머문 호텔 객실에 비치되어 있는 오디오/비디오 기계들은 이 호텔 객실을 더 흥미롭게 한다.	①	②	③	④	⑤	⑥	⑦
내가 머문 호텔 객실에 비치되어 있는 오디오/비디오 기계들은 이 호텔 객실을 신나는 장소로 느껴지게 한다.	①	②	③	④	⑤	⑥	⑦
내가 머문 호텔 객실에 비치되어 있는 오디오/비디오 기계들은 보기에 즐겁다	①	②	③	④	⑤	⑥	⑦

내가 머문 호텔 객실에는 고급오디오/비디오 기계들이 비치되어 있다.	①	②	③	④	⑤	⑥	⑦
내가 머문 호텔 객실의 가구들은 편안하다.	①	②	③	④	⑤	⑥	⑦
내가 머문 호텔객실의 전자제품은 사용하기에 편리하다.	①	②	③	④	⑤	⑥	⑦
내가 머문 호텔객실의 가구, 전자제품, 붙박이 장등의 배열은 짜임새있게 되어 있다.	①	②	③	④	⑤	⑥	⑦
내가 머문 호텔은 깨끗한 객실을 유지한다.	①	②	③	④	⑤	⑥	⑦
내가 머문 호텔객실은 고객서비스장소(미니바, 세탁실, 자동판매기 장소, 얼음제공장소 등)를 깨끗하게 유지한다.	①	②	③	④	⑤	⑥	⑦
내가 머문 호텔 객실의 복도와 통로, 입구와 발코니는 깨끗하게 유지되고 있다.	①	②	③	④	⑤	⑥	⑦
내가 머문 호텔객실 환경은 쾌적하다.	①	②	③	④	⑤	⑥	⑦
이 호텔 객실담당 종업원들은 친절하고 예의가 바르다.	①	②	③	④	⑤	⑥	⑦
이 호텔 객실담당 종업원들은 그들의 행동에서 개인적 친근감을 느끼게 한다.	①	②	③	④	⑤	⑥	⑦
이 호텔 객실담당 종업원들은 고객들에게 서비스하는 것을 행복하게 생각한다.	①	②	③	④	⑤	⑥	⑦
이 호텔 객실담당 종업원들은 고객들의 요구를 들어주는데 귀찮아 하지 않는다.	①	②	③	④	⑤	⑥	⑦
이 호텔 객실담당 종업원들의 외모는 단정하다.	①	②	③	④	⑤	⑥	⑦
이 호텔 객실담당 종업원들은 고객의 요구에 재빨리 대답한다(반응한다).	①	②	③	④	⑤	⑥	⑦
신속한 서비스는 이 호텔 종업원들에게 중요하다.	①	②	③	④	⑤	⑥	⑦

III. 다음은 귀하께서 방문하신 호텔의 서비스에 대한 귀하의 느낌 (지각된 서비스 질) 에 관한 질문입니다. 귀하의 의견과 일치하는 곳에 체크해 주십시오.

이 호텔의 서비스는 (시설, 환경외에)	매우 좋지않다(①)			보통이다(④)		아주 훌륭하다(⑦)	
	①	②	③	④	⑤	⑥	⑦
이 호텔의 시설, 환경 서비스는	매우 좋지않다(①)			보통이다(④)		아주 훌륭하다(⑦)	
	①	②	③	④	⑤	⑥	⑦
전체적인 이 호텔의 서비스는	매우 좋지않다(①)			보통이다(④)		아주 훌륭하다(⑦)	
	①	②	③	④	⑤	⑥	⑦

IV. 다음은 귀하께서 방문하신 호텔에 대한 고객 충성도에 대한 질문입니다. 귀하의 의견과 일치하는 곳에 체크해 주십시오.

질문	매우 동의하지않음①			보통④			매우 동의함⑦
나는 이 호텔에 대해서 다른사람에게 긍정적으로 말할 것이다.	①	②	③	④	⑤	⑥	⑦
나는 다른 사람에게 이 호텔을 추천하고 싶다.	①	②	③	④	⑤	⑥	⑦
나는 앞으로도 이 호텔과 계속 거래를 하고 싶다	①	②	③	④	⑤	⑥	⑦
나는 내 가족들과 친구들이 이 호텔과 거래를 하도록 그들을 복돋울 것이다.	①	②	③	④	⑤	⑥	⑦
나는 정말 이 호텔과 거래하는 것이 좋다	①	②	③	④	⑤	⑥	⑦
나는 내가 호텔을 이용할 일이 있을때마다 이 호텔을 이용하고 싶다.	①	②	③	④	⑤	⑥	⑦
나는 내가 호텔을 이용할 일이 있을때마다 이 호텔을 가장 먼저 우선순위로 고려할 것이다.	①	②	③	④	⑤	⑥	⑦
만일 기회가 된다면, 나는 이 호텔에 다시 머물고 싶다.	①	②	③	④	⑤	⑥	⑦
나는 나 자신이 이 호텔의 충성고객이라고 생각한다.	①	②	③	④	⑤	⑥	⑦
전체적으로 나는 이 호텔의 충성 고객이다.	①	②	③	④	⑤	⑥	⑦
나는 누군가가 나에게 호텔을 추천해달라고 하면 이 좋냐고 물어보면 이 호텔을 추천할 것이다.	①	②	③	④	⑤	⑥	⑦

V. 다음은 연구에 필요한 인구통계학적 자료입니다. 해당란에 빠짐없이 체크해 주십시오.

1. 귀하의 성별은 무엇입니까?
   남자 ( ) 여자 ( )

2. 귀하의 현재 거주지는 어디입니까?
   북미 ( ) 남미 ( ) 유럽 ( )
   호주 ( ) 아시아 (중국, 한국, 일본, 동남아) 기타 ( )

3. 귀하의 나이는 몇 살입니까?
   18 세 - 27 세 ( ) 28 세 - 37 세 ( ) 38 세 - 47 세 ( )
   48 세 - 57 세 ( ) 58 세 - 67 세 ( ) 68 세 이상 ( )

4. 귀하께서 일년에 호텔을 방문하시는 횟수는 몇번입니까?? 회
   1 회 - 2 회 ( ) 3 회 - 4 회 ( ) 5 회 - 6 회 ( )
   7 회 - 8 회 ( ) 9 회 - 10 회 ( ) 10 회 이상 ( )

5. 가족 전체 연수입은 얼마입니까?
   3 천 500 만원이하( ) 3 천 500 만원이상- 5 천만원이하( ) 5 천만원이상- 6 천 50 만원이하( )
   6 천 500 만원이상-8 천만원이하( ) 8 천만원이상-1 억이하( ) 1 억이상 ( )

6. 귀하의 최종학력은 무엇입니까?
   중학교 졸업 또는 이하 ( )
   고등학교 중퇴 ( )
   고등학교 졸업 ( )
   전문대 졸업 ( )
   대학교 재학 ( )
   대학교 졸업 ( )
   대학원 이상 ( )

7. 결혼은 하셨습니까?
   미혼 ( ) 결혼 ( ) 이혼( ) 미망인( ) 별거중 ( )

8. 이번 여행의 목적은 무엇입니까?
   사업 ( ) 휴가 ( ) 사업과 휴가 ( )
   국제회의 참가 ( ) 친지 방문 ( ) 기타 ( )

설문에 응해 주셔서 감사합니다.

이 설문지를 완성하신 후 동봉되어 있는 봉투에 넣어서 봉하신 후 프런트 데스크에 마련해 둔 박스에 넣어 주시기 바랍니다.

Appendix D Institutional Review Board (IRB) Approval

Oklahoma State University Institutional Review Board

Date:	Thursday, May 25, 2006
IRB Application No	HE0671
Proposal Title:	A Study of Understanding the Impact of Physical Environment on Perceived Service Quality in Hotel Industry
Reviewed and Processed as:	Exempt

Status Recommended by Reviewer(s): Approved Protocol Expires: 5/24/2007

Principal Investigator(s

Yunkyong Kim
2001 N. Perkins Rd. Apt.
Stillwater, OK 74075

Bill Ryan
210 HESW
Stillwater, OK 74078

The IRB application referenced above has been approved. It is the judgment of the reviewers that the rights and welfare of individuals who may be asked to participate in this study will be respected, and that the research will be conducted in a manner consistent with the IRB requirements as outlined in section 45 CFR 46.

X The final versions of any printed recruitment, consent and assent documents bearing the IRB approval stamp are attached to this letter. These are the versions that must be used during the study.

As Principal Investigator, it is your responsibility to do the following:

1. Conduct this study exactly as it has been approved. Any modifications to the research protocol must be submitted with the appropriate signatures for IRB approval.
2. Submit a request for continuation if the study extends beyond the approval period of one calendar year. This continuation must receive IRB review and approval before the research can continue.
3. Report any adverse events to the IRB Chair promptly. Adverse events are those which are unanticipated and impact the subjects during the course of this research; and
4. Notify the IRB office in writing when your research project is complete.

Please note that approved protocols are subject to monitoring by the IRB and that the IRB office has the authority to inspect research records associated with this protocol at any time. If you have questions about the IRB procedures or need any assistance from the Board, please contact Beth McTernan in 415 Whitehurst (phone 405-744-5700, beth.mcternan@okstate.edu).

Sincerely,

Sue C. Jacobs, Chair
Institutional Review Board

VITA

Yunkyong Kim (Julia)

Candidate for the Degree of

Doctor of Philosophy

Dissertation: A STUDY OF UNDERSTANDING THE IMPACT OF PHYSICAL ENVIRONMENT ON PERCEIVED SERVICE QUALITY IN THE HOTEL INDUSTRY

Major Field: Human Environmental Sciences

Biographical:

Personal Data: Born in Busan Metropolitan City, South Korea on February 28, 1971. The daughter of Junho Kim and Hyoja Kim. Live in Toronto, Canada.

Education:

2002 2007	Completed the requirements for the Doctor of Philosophy degree with a major in Human Environmental Sciences at Oklahoma State University, Stillwater, Oklahoma, in May 2007.
2003	Intensive Teaching English as Second Language (TESL) Certificate Program, International Language Studies, Toronto, Ontario
1999 – 2001	Master of Art, Business Management, Dong-A University, Busan, Korea
1990 – 1994	Bachelor of Art, Literature and Library Information Science, Busan National University, Korea

Experience:

2000 – 2003	Service program manager, International Manner Center, Busan, Korea
2001 – 2002	Exhibition and Conference Planner, Busan Exhibition and Convention Center
2000 – 2001	Senior instructor, Woongjin Coway Company, Seoul, Korea
1995 – 1999	Working at Local Hotel and Freelance Marketing Consultant
1993 – 1995	Customer Service Staff for Consumer and Trade Shows, including 93'Daejeon Exposition, Korea Electric Power Corporation Pavilion (KEPCO)

Academic Teaching Experiences

Fall, 2006	Teaching Assistant and Research Associate, School of Hospitality and Tourism Management, University of Guelph ON. Canada Course title: Policy Issues in Hospitality & Tourism Management
1999 – 2004	Adjunct Professor and lecturer in many Universities and Colleges, Busan, Korea

Award and Scholarship

2004	The Most Outstanding Student Scholarship, Pukyong National University, Busan, Korea
2003	The Most Outstanding Student Scholarship, Pukyong National University, Busan, Korea
1993	The Outstanding Student Scholarship, Pusan National University, Busan, Korea
1990	Travel Essay Content Winner, Hanguk Newspaper Co., Seoul, Korea