

**A STUDY OF CUSTOMERS' PERCEPTIONS
TOWARDS INFORMATIVE SERVICE SETTING
ITEMS IN U.S. HOTEL INDUSTRY**

By
SHINYI LIN

Bachelor of Management Business Administration
Tam-Kang University
Taipei, Taiwan, ROC.
1998

Master of Business Administration
University of New Orleans
Louisiana, USA
2000

Submitted to the Faculty of the
Graduate College of the
Oklahoma State University
In partial fulfillment of
the requirements for
the Degree of
DOCTORO OF PHILOSOPHY
May, 2006

**A STUDY OF CUSTOMERS' PERCEPTIONS
TOWARDS INFORMATIVE SERVICE SETTING
ITEMS IN U.S. HOTEL INDUSTRY**

Dissertation Approved:

Dr. Hailin Qu

Dissertation Adviser

Dr. Lynda Martin

Dr. Bill Ryan

Dr. Catherine Sleezer

A. Gordon Emslie

Dean of the Graduate College

ACKNOWLEDGEMENT

I would like to thank the members of my dissertation committee, Professor Hailin Qu, Dr. Lynda Martin, Dr. Bill Ryan, and Dr. Catherine Sleezer for their advice and warm support throughout the entire process of this dissertation.

Dr. Hailin Qu, Chairman of this dissertation committee, has devoted a tremendous amount of effort at every stage of this project and has shown endless patience throughout the years. The value of his guidance and support is immeasurable.

Dr. Lynda Martin has always provided wonderful insight and timely commentary. At every stage of the doctoral process, Dr. Martin was always encouraging and provided motivation for me to forge ahead. Moreover, I learned many things during the years that I worked with Dr. Martin; I do not think I would have made it through in OSU without her.

I am also deeply indebted to Dr. Catherine Sleezer. Her positive attitudes and kind words have meant a lot to me. I must express my gratitude to Dr. Sleezer for taking time to provide edits on the manuscript; I am pleased to have her as my committee member and glad that I followed her advice.

Dr. Ryan has also provided great insight to my research ideas throughout the process of dissertation. He has been very supportive and has always had a kind word and a smile.

I would also like to thank all of the other HRAD staff and faculty members, and my fellow graduate students for their help and support. Everyone has been very supportive throughout this process. Finally, I must convey my heartiest thanks to my family, friends, and my fiancé for all of their support and encouragement I needed to see the doctoral study through to the finish.

TABLE OF CONTENTS

CHAPTER	PAGE
1 INTRODUCTION	
Overview	1
Informative Service Setting/Design	3
Background of the Problem	5
Value Judgment	6
Purpose of the Study	8
Significance of the Study	10
Definition of Terms	12
Organization of the Study	14
2 LITERATURE REVIEW	
Services in Hospitality Industry	15
Hotel Service Attributes versus Guest's Expectations	17
International Travel Trends	21
Cultural Factors	25
Customer Satisfaction	27
Choice of Intention, Repeat Patronage and Customer Loyalty	29
Repeat Patronage	31
Customer Loyalty	32
Issues in Hotel Service Quality	35
Concepts in Hotel Services	38
Essential Methods of Measuring Service	41
The SERVQUAL model	42
The SERVPERF model	45
The Importance-Performance Analysis (IPA) model	46
Conceptual Framework	48
Hypotheses	51
3 METHODOLOGY	
Research Design	55
Research Instruments	57
Survey Questionnaire	57
Validity and Reliability	59
Pilot Test	60
Reliability	60

Sampling Plan	61
Analysis of Data	64
Descriptive Statistics	64
Importance-Performance Analysis (IPA)	65
Mean Comparison	66
Factor Analysis	66
Multiple Regression Analysis	68
Analysis of Variance	72
Limitations of the Study	73

4 FINDINGS & DISCUSSION

Demographic Profile of Respondents	76
Travel Behavior of Respondents	78
Importance and Performance of ISSI Attributes	80
Importance	81
Performance	81
Importance and Performance Gap	85
Importance and Performance Analysis (IPA)	87
Importance and Performance Analysis:	
Hospitality Educators vs. Hotel Customers	91
Importance Analysis	91
Performance Analysis	96
I-P Grid: Hospitality Educators vs. Hotel Customers	102
Importance and Performance Analysis:	
Western Customers vs. Asian Customers	104
Importance Analysis	104
Performance Analysis	110
I-P Grid: Western Customers vs. Asian Customers	115
Overall Satisfaction of ISSI	118
Relationship between ISSI Performance and Respondents'	
Traveling Behavior and Demographic Profiles	120
Respondents' Traveling Behavior	
and Perceived ISSI Performance	121
Respondents' Demographic Profile	
and Perceived ISSI Performance	123
ISSI Performance Dimensions	126
Determinants of the Impact of ISSI on Respondents' Satisfaction,	
Recommendation, and Hotel-Selection Decisions	129
The Impact on Customers' Decision of Hotel-Selection	129
The Impact on Customers' Recommendation	132
The Impact on Customers' Level of Satisfaction	134

5	SUMMARY, CONCLUSIONS AND RECOMMENTIONS	
	Summary	137
	Discussions of the Findings	139
	Implications	143
	Recommendations & Future Research	146
	BIBLIOGRAPHY	148
	APPENDIXES	
	Appendix A – Cover Letter	158
	Appendix B – The Questionnaire	160
	Appendix C – Institutional Review Board (IRB) Approval	166

LIST OF TABLES

TABLE	PAGE
1. Studies of Hospitality Services	19
2. Top 15 Overseas Markets for International Visitors Arrivals to the United States	23
3. International Tourist Arrivals from Asia to USA (2000~2004)	24
4. Concepts of Service Redesign	39
5. Online-interest Group from Yahoo.Com	63
6. Demographic Profile of the Respondents	77
7. Travel Behavior Profile of the Respondents	79
8-1. Ranking of Perceived Importance of Hotel ISSI Attributes	83
8-2. Ranking of Perceived Performance of Hotel ISSI Attributes	84
9. The Gaps between Importance and Performance of Hotel ISSI Attributes	86
10-1. ISSI Importance Ranking by Hospitality Educators	93
10-2. ISSI Importance Ranking by Hotel Customers	94
11. Importance Difference between Hospitality Educators and Hotel Customers	95
12-1. ISSI Performance Ranking by Hospitality Educators	99
12-2. ISSI Performance Ranking by Hotel Customers	100
13. Performance Difference between Hospitality Educators and Hotel Customers	101
14-1. ISSI Importance Ranking by Western Customers	107
14-2. ISSI Importance Ranking by Asian Customers	108
15. Importance Difference between Western Customers and Asian Customers	109
16-1. ISSI Performance Ranking by Western Customers	111
16-2. ISSI Performance Ranking by Asian Customers	112
17. Performance Difference between Western Customers and Asian Customers	113
18. ISSI Satisfactory Profile of the Respondents	118
19-1. Perceived Overall ISSI Performance and Respondents' Traveling Behavior	121
19-2. Perceived ISSI Performance Factors and Respondents' Traveling Behavior	121
20-1. Perceived Overall ISSI Performance and Respondents' Demographic Profile	124
20-2. Perceived ISSI Performance Factors and Respondents' Demographic Profile	124
21. Factor Analysis Results of Perceived Performance of ISSI Attributes in US. Hotels	127

LIST OF FIGURES

FIGURE	PAGE
1. Flow Diagram of the Overall Service Process	7
2. The Original IPA Framework	47
3. The ISSI (Informative Service Setting Items) Attributes Research Model	50
4. Research Framework	56
5. Importance-Performance Analysis Matrix of ISSI	88
6. Importance-Performance Analysis Matrix of Hospitality Educators	102
7. Importance-Performance Analysis Matrix of Hotel Customers	103
8. Importance-Performance Analysis Matrix of Western Customers	116
9. Importance-Performance Analysis Matrix of Asian Customers	117

CHAPTER I

INTRODUCTION

Overview

In recent decades, significant growth in the hospitality industry has been fueled by increases in disposable income, leisure time, and political stability. Many third world countries turn to hospitality and tourism as an economic development strategy shortly after achieving political stability. Aggressive tourism campaigns have also fueled the hospitality industry's growth (Kirwin, 1991). Consequently, the hospitality industry has grown both larger and more competitive; and organizations in the hospitality industry face increasing competitive pressures. Because of this growth, service quality also takes on increasing importance both domestically and internationally in hospitality business environment that face tremendous competition and rapid deregulation. This results in a need for hotels to serve an increasingly diverse clientele that includes customers who have backgrounds and cultural expectations that reflect a wide range of experience with industrialization and globalization.

For truly global products, uniformity can drive down research, engineering, design, and production costs across business functions, contributing to a cycle of higher global competition. Multinational companies that pursue strategies of product adaptation frequently run the risk of falling victim to global competitors that have recognized opportunities to serve global customers (Keegan & Green, 2000). To successfully compete in this dynamic environment, many hospitality companies both

domestically and internationally are focusing on improving service quality. High service quality is a strategy that has been related to success especially during times of intense competition both domestically and internationally (Wong, Dean, & White, 1999).

Service quality is a very important factor for achieving competitive advantages and efficiency. For example, hotel businesses must seek profitable ways to differentiate their services/products from other lodging companies. Service attributes, such as imprecise standards and fluctuating demand, have been identified. Those attributes further complicate the task of defining, delivering, and measuring service quality in the hospitality industry (Wong, Dean, & White, 1999). To increase their competitive advantage over other lodging companies, hoteliers must deliver each and every service-related sector with high service quality to optimize customer satisfaction.

Oliver (1981) defined customer satisfaction as a customer's emotional response to the use of a product or service. Measuring customer satisfaction is an integral part of the effort to improve a product's quality, expecting to result in repeat purchases and favorable word-of-mouth publicity, and, ultimately, a company's competitive advantage. Service satisfaction is a function of the service setting and the consumers' experiences and reactions to a provider's behavior during the service encounter period. Several work environmental situations within each hotel service sector can create gaps in services as well as result in hotel employee stress (Hardin, 2002). In the hospitality environment, *service setting* is generally known as *servicescape*. A *servicescape* consists of man-made physical items that assist in providing and enhancing hotel services to customers.

Informative Service Setting Items (ISSI) are products, services, signs and items that are used in hotels to provide information or assistance to hotel guests without requiring them to have direct human contact with hotel employees. Examples of ISSI

include direction and operating hours of in-house dining facilities, museum and art gallery guides, and the location of maps and floor plans. Hotel often use informative service settings to communicate their services and to serve hotel customers on a regular basis. Examples of informative service setting item is information on check-out processes via Web-TV system, or monetary information on mini-bar and room services. When guests' FAQ (frequently asked questions) are answered through ISSI, hotel employees can save time to provide other quality services to the hotel guests. From a human resource perspectives, hoteliers who want to provide more efficient and higher quality services to attract more satisfied and/or repeat guests, may need to re-engineer and adjust their service setting at all levels.

Informative Service Setting/Design

Informative service setting/design, also known as “servicescape”, can be referred to as the “built environment” or the “man-made, physical surrounding as opposed to the natural or social environment” (Bitner, 1992). Researchers hold various perspectives on the purposes of the service setting/design. Combining their perspective, the purposes of the informative service setting/design result in the following: (1) provide an excellent opportunity to meet or exceed customer expectations in the overall service experience; (2) create and enhance the moods of both customers and employees; (3) be part of the service itself and help create a memorable experience; and (4) contribute to the creation of a better hospitality environment (Bitner, 1992; Wakefield, & Blodgett, 1994; Nie, & Young, 1997; Nicholls, Gilbert, & Roslow, 1998; Fottler, Reberts, & Spears, 2000). In recent decades, informative service setting/design

has become well recognized as an important aspect for improving service or product performances in many business sectors including banking, the retail industry, and healthcare. In general, service-setting can be represented as signs, symbols, and artifacts that communicate information to the customer. Sewell and Brown (1990) stated that signs serve one or more of only three purposes: to name the business, to describe the product or service, and to give direction. Signs convey their messages through the use of symbols, either in the form of written language or some representational icons that can replace specific words. Artifacts are physical objects that represent something beyond their functional use.

Within the lodging industry worldwide, a variety of different services have been provided to cater hotel customers. Hutton and Richardson (1995) concluded that the exterior environment delivers a message about the organization, its services, and quality long before the actual encounter takes place. Disneyland and Disney World and other benchmark guest service organizations use their physical structures/items and ISSI to make sure that they define and structure proper mood for their guests (Ford & Heaton, 2000). Ritz Carlton in Atlanta offers Japanese travelers comforts of home providing them with such amenities as tea-bags with green tea, an electric tea-kettle, and a tray with a teapot and teacups.

The informative service setting is important to hotel service providers for several reasons. First, it gives an excellent opportunity to meet or exceed customer expectations in the overall service experience. Second, it can create and enhance the moods of both customers and employees. Third, the setting may be part of the service itself and help to create a memorable experience. There is little dispute among

academics and practitioners that the service-setting influences the nature of social interaction between and among customers and employees (Harris, Baron, & Ratcliffe, 1995). By re-engineering the environment and the delivery of services in an effort to assist and educate hotel guests on how to self-serve themselves on day to day items, hotel employees can deliver higher levels of service rather than answering FAQ's, besides, hotel customers also have information whenever they need to access it. Thus, hotel businesses can decrease overall employee frustration, improve the efficiency and quality of product and services norms, and contribute positively to hotel brand image.

Background of the Problem

High customer satisfaction is critically important to the hotel industry; therefore, the importance and performance of *Informative Service Setting Items* (ISSI) should be examined from guests' perspectives. This study examines hotel customers' perceived *Importance* and *Performance* for ISSI. The success of the hotel and lodging industry in a global environment depends on its degree of professionalism. Product quality and service efficiency need to be strengthened if a more professional lodging work force is to emerge. Delivering quality service is an essential strategy for success and survival in today's competitive environment.

Research in non-hospitality settings shows that a relationship exists between customers' perceptions of control and satisfaction. For example, studies in health management have consistently demonstrate that when customers have access to desired information or control over the treatment, they are more satisfied than when doctors are in total control (Fottler, Ford, Reberts, Ford, & Spears Jr. 2000). Similarly, studies in

banking services suggest that when customers have access to desired information or services they are more satisfied than when bankers withhold relevant information (Nie & Young, 1997). Due to the diversity of customers and cultural differences that exist within the lodging industry, hotel customers have various perceptions of hotel service quality and service performance. A sense of control and accessibility during the manufacturing process is essential to the consumer. ISSI insures that the desired hotel services are created to meet the customers' specific needs by providing customers with access to information that enable them to control the service delivery process and access services when needed.

For years, informative service setting/design has been well recognized as an operational tool to achieve marketing goals and service improvement in several service sectors such as banking industry and healthcare systems. Customers perceive control over when they receive a service (such as ATM), and it results in higher customer satisfaction. However, there has not yet been a study in the hospitality industry that focused on determining customers' specific ISSI needs and how these needs relate to customer satisfaction, future recommendations, or their hotel-selection decisions. The issues associated with poor service informative service setting/design could cause major setbacks for the hotels that are trying to attract customers. Many service issues can be automated, but research is needed to identify the major service issues that the customers prefer have automated.

Value Judgment

For decades, cultural anthropologists have recognized and used value-oriented dimensions to describe the cultural values that most precisely identify and circumscribe a

group. As a matter of fact, Hofstede (1980, 1991) studied thousands of people in over forty countries, and he stated that national culture explains over 50% of the differences in the behavior and attitude of people.

The customer's value judgment is defined as "the interactive, relativistic performance that characterizes the customer's experience of interacting with some objects" (Mattila, 1999). This definition is useful because the overall evaluation of products and/or services is a combination of judgment about both low and high level benefits, attributes, and values, including price and the reputation of the service provider (i.e. hotel company). Furthermore, Zeithaml (1988) characterized consumer-based definitions of perceived value as "the consumer's overall assessment of the utility of a product based on perception of what is received and what is given". In other words, consumer's perception of "what is received and given" in the areas of perceived service quality and price forms the perceived value. Hartline and Jones (1996) provided a simplified flow diagram of the overall service process:

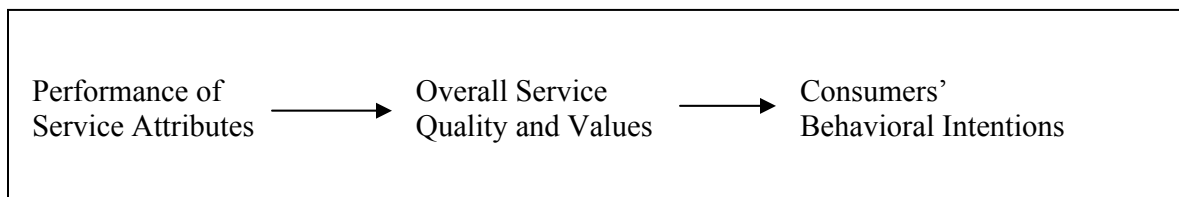


Figure 1: Flow Diagram of the Overall Service Process

Source: Hartline & Jones (1996)

A body of empirical work identifies many cues that are used by consumers in assessing the quality of a product/service. Customer satisfaction and value are defined as functions of the customers' service quality perceptions. Moreover, customers' global

perceptions of service quality and value for money influence a series of multiple outcomes: such as consumer behavioral intentions and organizational effectiveness (Zeithaml & Bitner, 1996; Gould-Williams, 1999). However, little research is available on the overall evaluation of service setting as a combination of judgment of customer satisfaction and values for hospitality products/services.

Purpose of the Study

The purpose of this study was three-fold. First, this study examined the hotel attributes of *Informative Services Setting Items* (ISSI) that can impact customers' decisions when selecting a hotel. These are informative items that guests can self-serve on a day-to-day basis during their stays in hotels. Second, this study determined the importance and performance of the existing self-serve ISSI as perceived by hotel guests and hospitality educators. In addition, this study extended the scholarship in the area of Importance-Performance Analysis (IPA) to gain an understanding of the perceptions about hotel ISSI from travelers who stayed in US hotels. Exploring the relationship between ISSI attributes and customers' hotel-selection decisions from theoretical perspectives was the third purpose of this study.

In recent decades, IPA has been successfully used to describe the needs for service and products quality in the hospitality industry. However, very little research has been done to actually determine if there is indeed a difference between ISSI among hotel customers. In addition, little is known about the perceptions of various ISSI by two important groups to the U.S. hospitality industry. One group consists of hotel guests. This group has grown greatly diversified in the last ten years. The other group

consists of hospitality and tourism management faculty members who set the standards in the hospitality curricula. These faculty members teach the hospitality educational programs; hence they educate tomorrow's hotel employees about services and items that are critical for their success. Therefore, knowledge of the perceptions of hotel customers and faculty members can contribute greatly to our knowledge of ISSI.

This study also explores the relationship among the hotel ISSI attributes, ISSI importance and performance, and perceived guest satisfaction. Selected survey subjects examined ISSI to identify their perceptions of the importance and performance of these items in selecting a hotel property. The specific objectives of this study were to:

1. Assess the hotel guests' perception of the *importance* and *performance* of the self-serve *Informative Service Setting Items* currently used by the U.S. hotel industry;
2. Examine the underlying dimensions of *importance* and *performance* of *Informative Service Setting Items* attributes;
3. Diagram the IP (*importance* and *performance*) matrix of *Informative Service Setting Items* attributes to provide an overall picture of their strengths and weaknesses;
4. Identify the impact of *Informative Service Setting Items* attributes on the performance level on customers' choice of selecting a hotel;
5. Investigate the relationship between customers' perceived *performance* of *Informative Service Setting Items* and their traveling behavior and demographic characteristics;

6. Investigate the difference of *importance* and *performance* of *Informative Service Setting Items* perceived by Western customers and Asian customers;
7. Discover the difference of *importance* and *performance* of *Informative Service Setting Items* perceived by hotel customers and hospitality educators; and,
8. Recommend possible quality-focused strategies that can be adopted by hotel management to improve the quality of hotel informative service settings to better serve hotel guests.

Significance of the Study

Several studies have identified hotel selection attributes for specific demographic groups, such as business travelers, female travelers, and Japanese travelers (Tanincze, 1990; Barsky & Labagh, 1992; Gilbert & Morris, 1995). However, little research has been conducted to actually determine if there indeed is a relationship between hotel informative service setting items attributes and hotel-selection decision. Therefore, one theoretical advancement from this study is to contribute to existing theory by investigating the relationship between ISSI attributes and customers' hotel-selection decisions. In other words, one focus of this study is to investigate the performance level of ISSI in regard to the impact on customers' decisions about future hotel-selection as well as the impact on customers' recommendation of the hotel to others. In addition, finding the critical differences of customers' culture background and difference on perceived service quality factors has favorable benefit for the hospitality industry (Chadee & Mattsson, 1996). Thus, there is a need to explore the

difference service perceptions that reflect the underlying cultural factors of hotel customers.

This study also contributes to practical advancement in the hotel industry by examining service quality from a “different” perspective. Distinct quality factors are significant for different tourist encounters. The hotel industry must aim at performing “beyond the call of duty” (Staroba, 1992). By delivering high service quality, a hotel property is able to maintain a positive hotel brand image, especially during the times of intense competition both domestically and internationally (Wong, Dean, & White, 1999). Understanding the factors that affect ISSI perceptions by customers and the performance associated with these items could be helpful in reducing employee workloads, providing better service performance, enhancing the function of human resources, and attracting more international hotel guests. The findings from this study can provide an insight into customers’ assessment of ISSI and design as operational tools that enhance service performance. Furthermore, mapping ISSI on an Importance-Performance grid, and comparison of the perceived importance and performance of current ISSI using demographic characteristics could help hotel operators financially in identifying ISSI of more and less values and could aid managers in developing future ISSI. To exceed hotel consumers’ overall satisfaction, lodging organizations could use this information internally to identify their strengths and weaknesses.

Overall, this study makes four unique contributions to the field of hospitality research: (1) it provides practical advancement in the hotel industry by examining service quality from a “different” perspective, (2) it compares perceptions of hotel ISSI attributes for various customer demographics, (3) it evaluates the importance and

performance of hotel ISSI attributes with perceived satisfaction, and (4) it provides a quality-focus strategy for hotel branding by identifying the perceptions of current ISSI by diverse customer segments.

Definition of Terms

1. Informative service setting items (ISSI)

Informative service setting items/design refers to the man-made, physical surrounding as opposed to the natural or social environment (Bitner, 1992). The informative service setting items and/or design should: (1) provide an excellent opportunity to meet or exceed customer expectations in the overall service experience, (2) be the elements related to spatial layout, functionality, and aesthetic appeal, and (3) be part of the service itself and help create a memorable experience (Bitner, 1992; Wakefield, & Blodgett, 1994; Nie, & Young, 1997; Nicholls, Gilbert, & Roslow, 1998; Fottler, Reberts, & Spears Jr., 2000).

2. Self-serve

Self-serve is refer to indirect assistance or services that customers receive by participating themselves in the automated service or product that are offered by the service providers. Self-serve can rely on signs, symbols, and artifacts to communicate general information to the customers through out the hospitality environment as the reconstitution or rearrangement of processes that make up a service.

3. Customer Satisfaction

Service satisfaction is a function of consumers' experiences and reactions to a provider's behavior during the service encounter period (Nicholls, Gilbert & Roslow, 1998). It is also a function of the informative service setting. Kollat, Engel and Blackwell (1970) suggested that satisfaction is the final outcome in the consumer decision process of problem recognition, search, alternative evaluation, choice, outcomes and satisfaction.

4. Value

Zeithaml (1988) identified consumer-based definitions of perceived value as "the consumer's overall assessment of the utility of a product based on perceptions of what is received and what is given". In other words, consumer perceptions of "what is given and received" are generated in the areas of perceived service, quality, and price – all together they form perceived value.

5. Culture

Culture is a set of values, attitudes, and beliefs shared by a group that sets the standards of behavior required for continued acceptance and successful participation in that group. Culture is passed on and learned by newcomers from more-experienced predecessors. Cultural differences certainly exist between nations, and significant cultural differences exist within countries as well.

Organization of the Study

Chapter 1 presents an overview of the study and includes a background of the problem, proposed conceptual framework, and research objectives. Chapter 2 presents a comprehensive review of the literature associated with the concepts of service quality and culture, customer satisfaction, and service setting. Chapter 3 describes the methodology of the study. This chapter also discusses the limitations of the study. Results of the data analysis are provided in Chapter 4. Chapter 5 presents the summary and discusses the findings and the implications of the results. The chapter also discusses the suggestions for future research, and concluding comments based on the theoretical and practical implications of the findings from this study.

CHAPTER II

LITERATURE REVIEW

Services in Hospitality Industry

Generally, hospitality services are described in terms of four unique attributes, namely: (1) intangibility, (2) heterogeneity, (3) inseparability, and (4) perishability. Most service workload has a high degree of discretionary content. There is a big difference between the maximum amount of energy, care, and commitment that an employee can bring to a service role and the minimum amount required to avoid a penalty. Although the cost of rooms, availability of service amenities, and proximity to tourism destinations are all extremely important factors in customers' hotel selections; the lodging industry should realize how important it is to look beyond current service items and characteristics.

A sum of impressions is a brand image; a single mental image includes both the physical product and the company that markets it (Keegan & Green, 2000). Erdem and Swait (2004) reported that brand credibility affects both the conditional brand choice and consideration, and that customers' uncertainty reflects different degrees of product attributes, associated information acquisition costs, and perceived risks of consumption. It was found that brand credibility results from detailed information, perceived attributes, and a company's willingness to carry through promises. Hospitality service quality is a multi-attribute construct (Richard & Allaway, 1993). In the world of hotel customer service, where the norm is to perform "beyond the call of

duty” (Staroba, 1992), it is necessary to recognize the diversity of services that are provided and that should be provided to hotel guests.

Hoteliers would agree that the basics – room, food, and prompt and friendly service – are just a starting point, not the goal of service. Hotel companies benefit greatly from genuine attempts to identify, interpret and respond to the feelings and needs of their customers (Anonymous, 1993). Satisfaction with a lodging property occurs only when the hotel is organized to provide quality service for each and every guest. When certain intangible amenities exist, it indicates that the hotel is focused on creating a consistent experience (Roderick, 1996). Although most service organizations give some thought to ISSI, its importance to the service experience has been most thoroughly understood by those who view and treat their customers as guests, that is, “the guest service industry”. Not surprisingly, the concept of quality and its relationship with service industries has become a major preoccupation of many within this sector (Lovelock, Patterson, & Walker, 1998). However, few studies on awareness and examination of service to international customers and education of international customers have been conducted.

As mentioned earlier, services are inseparable from both the service provider and the service customers (Friedman & Smith, 1993). With services in hotels, especially those in which customers must stay for an extended period of time, Bitner (1992) suggested that the facility itself, or the “servicescape”, could have a substantial effect on customers’ satisfaction with the service experience, and hence could play an important role in determining whether customers will repatronize the service provider. To examine this issue, this study is designed to focus on the concepts of hotel service quality and performance dimensions, the level of the hotel service that exists and/or is needed, the importance of customer education, and the importance of the hotel service

environment. The study can identify the informative service setting/design items that achieve performance by educating international customers. ISSI could assist in service performance, it also examine ISSI benefits for hotel finance.

Hotel Service Attributes versus Guest's Expectations

The hospitality industry is part of a multi-service industry. The U.S. turned into a service-driven economy in 1940s, and more than 70% of its workforce is now engaged in service-producing jobs (Bare & Turkel, 2003). More than 205 million people work worldwide in the hospitality industry comprising 11% of total employment and representing 10.2 % of the Global National Product. This is the highest percentage of all service industries. The tourism industry also brought in considerable tax revenue (US\$6550 billion per year) as worldwide total revenue. (Naisbitt, 1994). Furthermore, the tourism industry in the United States produced over \$582 billion in revenues for the economy, supporting over 18 million jobs (direct and indirect) and \$92 billion in federal, state and local tax revenues (ITA, 2001).

The development of the hospitality industry in a country/destination can have great effects upon international travelers' arrivals. When tourists decide to travel abroad, they consider the attractiveness of the destination, and also how the journey can benefit them. A dearth of international travelers and a lack of global service awareness have resulted in gearing local tourism product toward the domestic marketplace where, in the absence of any world service leaders/benchmark competition, the industry has slowly degraded with an "anything goes" service attitude (Gabbie & O'Neill, 1996). Some literature on service design focuses on new service development (Edgett, 1994; Martin & Horne, 1993, 1995; de Brentani, 1995); yet

creating new services is not the only option. According to these studies, the most important attributes of hotel service attributes were as follows: (1) room is clean, (2) feel safe and secure in the hotel, (3) everything in the guestroom works, (4) beds are comfortable, (5) room is a good value for the money, (6) front-desk staff is courteous and helpful, (7) towels are plentiful, and (8) hotel's location is convenient.

In past research studies, much effort was devoted to hospitality services and attributes that tended to be comparative in nature (see Table 1). However, to date, these efforts have focused primarily on establishing the links between service quality, service value, satisfaction, and marketing segments. Because hotel attributes differentiate a product or service from competitors and help to increase guest satisfaction, hoteliers are concerned about the impact of service attributes on guests' hotel-selection decision. To compete in today's marketplace, hospitality organizations should be prepared to consider the opportunity of global service design. However, few research studies have considered the cultural perspective as it relates to customers' perceptions about hotel service attributes.

Table 1. Studies of Hospitality Services

Authors	Research Focus	Sub-theme
Husbands (1989)	Seeking the important differences in residents' perception of tourism	Residents' perception that were associated with the social structure of the region
Saleh & Ryan (1991)	Using SERVUQL model to analyze service quality in the hospitality industry	Identified the existence of gaps between provider and customer perception
Barsky & Labagh (1992)	An approach for measuring levels of customer satisfaction	Compared hotel attributes for business and leisure travelers
Edvardsson (1992)	Examining the critical service issues that are important aspect to management	An empirical study that presents critical incidents in an airline that from customers' view-points
McCleary & Weaver (1992)	Compare hotel attributes for frequent and infrequent travelers	The important attributes to business travelers
Vandamme & Leunis (1993)	SERVQUAL approach to measuring hospitality service quality	
Weaver & Oh (1993)	Compare hotel attributes for frequent and infrequent travelers	The important attributes to business travelers
Clow & Beisel (1995)	An approach to increase levels of customer satisfaction	The important attributes to leisure travelers
Gilbert & Morris (1995)	Compare hotel attributes for business and leisure travelers	
Gilbert & Morris (1995)	Using critical incident analysis to uncover business travelers behavior	The important factors of hotels and airlines to business travelers

Knutson (1988) reported that frequent business travelers are considered the core business for many hotels. As business travelers spend more and more time away on business, they look for the hotels to offer a safe haven at the end of a long day on the road. In general, business travelers want a hassle-free environment, and they want to be sure that the hotel will provide exactly what they need (Knutson, 1988; Callan & Kyndt, 2001; Cobanoglu, 2001). A survey conducted by SRS-WorldHotels indicated that hotel service charge, preferred payment method, room upgrades. and other related hotel services differed based on guests' nationality (Conner, 1999). The SRS survey

revealed that room upgrades were a function of brand loyalty and corporate affiliation. Some 70% of all upgrades went to frequent guests and business travelers.

The increased number of international hotel guests makes it likely that hotel employees could encounter customers from diverse nationalities. Hoon (1992) mentioned that there exists a cross-cultural difference in expectations of hotel facilities and services. Not surprisingly, like other business sectors, hotel operators are overwhelmed by the obstacles emanating from cultural blunders (Longa, 1995). In attempting to reinvigorate hotels' service culture and performance on a global basis, it is necessary to examine the nature of the hotel service challenges, and how they are communicated and directed to customers and staff (Anonymous, 1993). It will increase the competitive advantage over other hotel operators. Nebel, Rutherford, and Schaffer (1994) identified three important trends for lodging organizational structures in the hospitality industry. These three trends are: (1) the increasingly competitive environment of the hotel industry in all market segments and all geographic regions, (2) the increasing demands that guests are placing on hotels, and (3) the tremendous increase in the sophistication, variety, and affordability of information technology available to hotels. In other words, service performance can play an important role in these trends. Overall, service quality is conceptualized as composed of three sub-dimensions: employees' service performance, the quality of physical goods quality, and servicescape quality (McDougall & Levesque, 1994; Brandy & Cronin Jr., 2001).

From a managerial perspective, customers can be viewed as an unpaid human resource in the service delivery system. Globalization of the human resources that include people from different cultures, economies, and legal systems presents some

challenges. However, when well done, HRD globalization pays dividends. The most common obstacles to global services are cross-cultural adaptation, different organizational or workforce values, differences in management style, and training programs (Marquardt & Engel, 1993). Besides cultural factors, economic and systems factors (Peter & Donnelly Jr., 1997) also affect the values, beliefs, and actions of distinct groups of people in a working environment. According to a survey conducted by the Japanese Travel Bureau Foundation in 1992, more than 25% of Japanese consider language as the main barrier when traveling overseas.

Although hotels may provide alternatives that satisfy international travelers with language and personal services, they may face challenges in providing an environment familiar to the international travelers. There are definitely differences that exist between people and cultures, but to serve people in an exquisite manner is of significant importance for employees in the hotel industry. Therefore, knowing what drives customers' value perceptions should allow hoteliers to allocate resources more efficiently (Mattila, 1999). Specially, if customers could identify the most important and highest performing ISSI in assessing service quality or perceived value for money, hoteliers could then optimize financial benefits by investing in those ISSI that enhance and increase the customers' hotel experience.

International Travel Trends

In 1996, the World Tourism Organization (WTO) projected that by the year 2010, the Asian-Pacific region would surpass the Americas becoming the world's number two tourism destination, with an estimated 229 million tourists. According to

data collected by the WTO Secretariat (2003) from the vast majority of destination countries, the number of international tourist arrivals grew by 2.7 percent in 2002. This number indicates that the growth of international travelers worldwide in the coming decade will be nothing short of spectacular. In terms of generating international tourism resources, international tourism is still relatively concentrated in the industrialized countries of Europe, the Americas, East Asia, and the Pacific.

Also, the WTO (2003) reported that emerging economies have shown fast growth in the last decade, particularly in Northeast and Southeast Asia, Central and Eastern Europe, the Middle East and Southern Africa. Except for the Americas, which has decreased for the second year in a row, all regions showed growth in 2002, with the highest increases recorded in the Middle East (+11%), and the Asia Pacific (+8%). More specifically, the WTO (2003) indicated that the ranking of the spenders in worldwide international tourism was the United State, and Germany. Japan stagnated or only grew marginally in 2002, while the Russian Federation (+21%), Italy (+14%), China (+11%), and the United Kingdom (+11%) had a double-digit increase. As for US international tourism, the statistics also showed that several other foreign markets increased significantly (Table 2).

Country of Residence	2000 Rank	2000 Total	1999 Total	% Change (2000~1999)	1998 Rank	1998 Total	1997 Total	% Change (1998~1997)
Overall Arrival		25,974,701	24,466,187	6.2%		23,697,587	24,194,476	-2.1%
Japan	1	5,061,377	4,826,077	4.9%	1	4,885,369	5,367,578	-9.0%
United Kingdom	2	4,703,008	4,252,160	10.6%	2	3,974,976	3,720,979	6.8%
Germany	3	1,786,045	1,984,627	-10.0%	3	1,901,938	1,994,296	-4.6%
France	4	1,087,087	1,059,014	2.7%	4	1,013,222	978,327	3.6%
Brazil	5	737,245	665,013	10.9%	5	909,477	940,698	-3.3%
South Korea	6	661,844	498,643	32.7%	14	364,061	746,550	-51.2%
Italy	7	612,357	626,217	-2.2%	6	610,796	580,261	5.3%
Venezuela	8	576,663	552,225	4.4%	7	540,685	487,981	10.8%
Netherlands	9	553,297	526,819	5.0%	9	490,198	473,420	3.5%
Australia	10	539,559	483,157	11.7%	10	460,705	500,615	-8.0%
Argentina	11	533,936	501,660	6.4%	8	523,909	503,393	4.1%
Taiwan	12	457,302	453,299	0.9%	12	386,413	442,780	-12.7%
Colombia	13	417,065	415,724	0.3%	13	367,968	317,736	15.8%
Switzerland	14	395,031	405,626	-2.6%	11	410,900	410,209	0.2%
Spain	15	361,177	362,848	-0.5%	15	326,339	328,024	-0.5%

Source: ITA (2001, April)

Overall, international visitors rose to 50.9 million in 2000, exceeding 1999's record by 5%. The strong turnout of international visitors coincided with the strengthening economies in Asia and South America and the steady growth throughout Europe, Canada and Mexico. More than half of U.S. last year's arrivals were overseas travelers (from countries other than Mexico and Canada); while European visitors made up nearly half of this group and Asians coming in next at almost 30 % (ITA, 2001). From the statistics of international arrivals in the U.S, it is clear that Asian is a fast growing market to U.S tourism. (See Table 3). Japan continues to top the overseas

arrivals market for the United States for the recent decade and accounts for over two-thirds of all arrivals from Asia.

Table 3. International Tourist Arrivals from Asia to the USA (2000~2004)

Country	2000	%	2001	%	2002	%	2003	%	2004	%	%
	Total	Market share	Total	Market share	Total	Market share	Total	Market share	Total	Market share	Change 00-04
China	249,441	0.49%	232,416	0.50%	225,565	0.52%	157,326	0.38%	202,544	0.44%	-18.80%
Hong Kong	203,300	0.40%	170,267	0.36%	135,409	0.31%	114,112	0.28%	123,335	0.27%	-39.33%
India	274,202	0.54%	269,674	0.57%	257,271	0.59%	272,161	0.66%	308,845	0.67%	12.63%
Japan	5,061,377	9.88%	4,082,661	8.70%	3,627,264	8.32%	3,169,682	7.69%	3,747,620	8.13%	-25.96%
Philippines	168,053	0.33%	180,549	0.38%	173,203	0.40%	134,338	0.33%	143,962	0.31%	-14.34%
Singapore	136,439	0.27%	99,010	0.21%	97,259	0.22%	87,525	0.21%	106,527	0.23%	-21.92%
South Korea	661,844	1.29%	617,892	1.32%	638,697	1.47%	617,573	1.50%	626,595	1.36%	-5.33%
Taiwan	457,302	0.89%	357,064	0.76%	288,032	0.66%	238,999	0.58%	297,684	0.65%	-34.90%
Thailand	86,971	0.17%	73,745	0.16%	66,848	0.15%	55,884	0.14%	66,287	0.14%	-23.78%
Grand Total		14.25%		12.96%		12.64%		11.76%		12.20%	
International Arrival to US	51,236,701	100%	46,926,868	100%	43,581,707	100%	41,218,213	100%	46,077,257	100%	-10.07%

Source: ITA (2005, May)

International travel is one of the largest exports for the U.S., ranking ahead of agricultural goods, consumer goods, and motor vehicles. It is the second largest service export category, and accounts for 37% of all service exports (ITA, 2001). Based on statistical findings from Hilton International Hotels worldwide (Anonymous, 1993), there is a significant growth among international customers in the company's total visitor volume. For example, there has been about 21% growth in Japanese guests at Hilton International Hotels worldwide since 1988. However, very little has been done to actually determine the needs of international travelers regarding hotel amenities. In addition, little information is known regarding the attributes of *Informative Service Setting Items* (ISSI) in the lodging industry. Previous studies have tended to focus on specific market segments or hotel companies. Because of the significant impact that

international travelers have on the profitability of the hospitality industry, this research take a unique view at ISSI attributes by examining its importance and performance to the customers' selection of accommodation.

Cultural Factors

Culture can be described in many ways. Most definitions include three elements; (1) it is a way of life shared by all or almost all members of some social group, (2) older members of the group pass it on to younger members, and (3) it shapes behavior and structures perception of the world (Marquardt & Engel, 1993). Hofstede (1991) defined culture as “a collective programming of the mind.....It is learned, not inherited. It derives from one's social environment, not from one's genes.” Culture-based behaviors shape a nation's corporate social conduct (Katz, Swanson & Nelson, 2001).

Hofstede (1980) proposed four value-oriented dimensions that differentiate national cultures: (1) power distance, (2) individualism, (3) uncertainty avoidance, and (4) masculinity. Each dimension can be considered as a continuous variable that can fall anywhere between the two descriptive poles. Cultural anthropologists have long recognized and used value-oriented dimensions to describe the cultural values that most precisely identify and circumscribe a group. In their investigation, Marquardt and Engel (1993) reported that there are nine interacting factors that create the various cultures; these nine factors are religion, education, economics, politics, family, class structure, language, history, and natural resources/geography. As the world becomes more diverse and countries serve as hosts to more international guests, the issue of

communication and effective interaction with people from other cultures becomes more important (Cameron, 2000).

Cultural conflicts and misunderstandings are often caused by simple ignorance of interests, beliefs and experiences between nations. Many misunderstandings arise from inappropriate social conduct including unintended meanings, poor word choices, ineffective styles, unclear roles and responsibilities, false expectations, different standards, fluctuating economic and political conditions, or personal misfortunes. These misunderstandings can easily be corrected through education and dialogue (Goldsmith, 1999), and education may be the best and simplest way to resolve them. Generally, people feel compelled strongly to conform to cultural norms; regardless how much one embraces the underlying cultural values. To put it simply, the success or failure of an international and/or multinational business organization may depend on the knowledge of cultural factors and their impact on the work place.

Culture can be defined in many ways, but no matter what definition is, a hospitality company cannot succeed if cultural factors are ignored. Many studies have addressed cross-culture issues and intercultural businesses and organizations; however, most research has confined itself to business communication and corporate citizenship. Little research targets hotel customers and their different perceptions related to hotel ISSI. The discovery of hotel customers' perceptions and needs for hotel ISSI can assist hotel companies in developing global services and products.

Customer Satisfaction

Service satisfaction is a function of consumers' experiences and reactions to a provider's behavior during the service encounter period. It is also a function of the informative service setting. In the study of overall satisfaction with ISSI, the rating for private sector organizations was significantly higher than for organizations in the public sector (Nicholls, Gilbert & Roslow, 1998). Moreover, service-marketing research has largely focused on measuring service quality and satisfaction associated with the primary service itself, with little attention given to the effects of the physical surroundings of the service setting. Service quality can be measured by the match of how well the service delivery and customers' expectation. The key to service quality is consistently meeting or exceeding customer expectation. Finding from research suggests that most travelers consider the following hotel attributes when making a hotel choice decision: cleanliness, location, room rate, security, service quality, and the reputation of the hotel chain (Knutson, 1988; Choi & Chu, 2000; Ndhlovu & Senguder, 2002).

Service quality evaluation includes both the outcome and the process of service delivery. Kollat, Engel and Blackwell (1970) suggested that satisfaction is the final outcome in the consumer decision process of problem recognition, search, alternative evaluation, choice, outcomes and satisfaction. An important principle learned by the guest service industry is the importance of providing the setting that customers expect. Another important principle is to create an environment that meets or exceeds customer needs for safety, security, support, competence, physical comfort and psychological

comfort (Fottler, Ford, Roberts, Ford, & Spears Jr., 2000). Successful retailers have learned to structure their internal environments to create a positive customer experience through a variety of strategies, so-called “environmental factors.” Kotler (1973) defined these environmental factors as “atmospherics.” Other researchers have proposed and found that atmospherics lead to consumer satisfaction, patronage, word-of-mouth advertising, and an improved image for the organization (Bitner, 1992; Grossbart, Hampton, Rammohan, & Lapidus, 1990).

It is generally agreed that customers’ expectations are used as the standard, to which actual service experiences are compared to evaluate satisfaction or quality. Customers’ expectations are the beliefs that consumers use to make predictions about what is likely to happen during a service encounter. The performance of a customer contact employees is reported as forming a dominant quality cue (Bitner, 1990; Parasuraman, Zeithaml, & Berry, 1985). However, when organizations have multiple employee groups interacting with consumers, the question which groups act as the dominant performance cue received very little attention (Gould-Williams, 1999). On the one hand, service organizations should realize that effective quality management requires total quality management (TQM) within all aspects of the service environment (O’Neill & Palmer, 2001). On the other hand, the lack of quality/efficient services can also cause hotel businesses unbearable loss. In 1998, Rowe reported:

- ❖ The cost of bad service is that 26 out of every 27 customers who have had a negative experience fail to report it, and 91% of customers who do complain fail to return.

- ❖ Thirteen percents of customers who have had a negative encounter will tell an average of at least 20 people.
- ❖ It costs five times as much to attract a new customer as it does to maintain current customers.
- ❖ More than 65% of customers will not do business with a company again just because of the way they were treated, not because of the products.

To maintain a positive brand image in the minds of hotel guests, hoteliers need to know more about the nature of hotel guests characteristics. An important brand concept is brand equity, the essence of which is that a brand's value to a company is an intangible asset (Keegan & Green, 2000). Measuring customer satisfaction is an integral part of the effort that improves a product's quality, results in a company's competitive advantage, repeat purchases, and favorable word-of-mouth publicity. There have been numerous studies on the needs and characteristics of travelers. Research findings mentioned that personal services, physical attractiveness, opportunities for relaxation, standard of services, appealing image, and value for money were significantly evaluated by travelers (Wilensky & Buttle, 1988). Ananth, Dimitriadis, and Markata (1992) reported that "price and quality" was rated as the most important attribute across all age categories, followed by attributes related to "security" and "convenience of location."

Choice of Intention, Repeat Patronage and Customer Loyalty

Customers' satisfaction, intention, and repeat business have been among the most important concerns to marketers in hospitality industry. Since services are

intangible, hospitality firms find it difficult to understand how customers perceive and evaluate service quality. Moreover, the inseparability of production and consumption results in service quality perceptions and evaluation by the customers both during and after the service delivery. In other words, service quality depends on the outcome of the service and on the process of service delivery (Parasuraman, Zeithaml, & Berry, 1985). In many studies, service quality is considered a critical determinant of actual choice of intention. However, rather than only focusing upon the impact for evaluating of service quality, many studies posited the notion that customer satisfaction can lead to positive customer behavioral intention, such as repurchase or repeat patronage (Woodside, Frey, & Daly, 1989; Bitner, 1992; Cronin & Taylor, 1994; Richard & Allaway, 1993; Zeithaml & Bitner, 1996).

Consumer's value judgment can be generally defined as "the interactive, relativistic performance that characterizes the customer's experience of interacting with some object" (Mattila, 1999). This definition is useful because the overall evaluation of products and services is a combination of judgment about both low-and-high level benefits, attributes, and values, including price and the reputation of the service provider (i.e. hotel company). In other words, customers developed their own perceptions and purchase intentions based on the service quality they perceived. The environment provides a first impression of the hospitality experience and influences the customers' expectations even before service is experienced. For instance, in the healthcare industry, there is a research showing that the informative service setting is one of the most important determinants of perceived quality and customer satisfaction that leads to sustainable competitive advantage (Cronin & Taylor, 1994).

Repeat Patronage

The assumption that service quality influences choice-behavior underlies most of this study. Within the hospitality context, the concept of novelty is not the provision of something new but the ideas of novelty seeking within an individual (Niinenen, Szivas, & Riley, 2004): for instance, understanding how ISSI attributes play a role in the hotel-selection decision. Notwithstanding the issue of ISSI service diversity, each very ISSI attribute that makes customers satisfied, can create problems both for interpretation and for the response of the service supply-side. Moreover, customer satisfaction and choice of intention are identified as functions of the customers' service quality perceptions. Consumers' global perceptions of service quality and value for money were noted as influencing a series of multiple outcomes; such as consumer behavioral intentions and organizational effectiveness (Parasuraman, Zeithaml, & Berry, 1996; Gould-Williams, 1999). Therefore, evaluating the impact of ISSI service quality through customer retention can help hotel companies to understand the impact on customers' repeat behavior.

Considering the heavy use of statistical measurement from the marketing literature, the assumption of repeat behavior can be attributed to product or brand loyalty; however, when actual behavior is a variable in a study, it is normally combined with an antecedent attitude (Niinenen, Sziva, & Riley, 2004). The emotional response to the experiences provided by or associated with particular services can characterize the end-state that resulted from the consumption experience (Westbrook & Reilly, 1983). Furthermore, several researchers have argued that service quality is an

important factor in service loyalty (Parasuraman, Zeithaml, & Berry, 1996; Boulding, Kalra, Staelin, & Zeithaml, 1993; Cronin & Taylor, 1994); and satisfactory performance of services do lead to customers' repeat patronage (Jaksa, 1999; Parasuraman *et al.*, 1988).

However, it should be noted that loyalty and repeat patronage are not synonymous. Studies indicate that, unlike loyal purchase behavior, repeat purchase behavior is not intentional, and does not necessarily reflect commitment or constitute loyalty (Jacoby & Kyner, 1973; Jarvis & Wilcox, 1977; Huddleston, Whipple, & VanAuken, 2004). In other words, one simple repeat purchase behavior is not stable over the long term and may be influenced by variety of factors. Perceived service quality has an impact on customer preference and the willingness to recommend the service to other customers in the future. In reality, the hospitality industry involves a degree of novelty in the form of aiming to increase the degree of service quality towards the optimal customers' satisfaction level. Since hospitality is a multi-disciplinary business environment, the complexity of interpreting hospitality services and products generates the ideas for analyzing repeat behavior and loyalty. So analyzing repeat behavior and customer loyalty in the hospitality field, little empirical research has focused explicitly on the relationship between ISSI service perceptions and customers' repeat patronage.

Customer Loyalty

Customer loyalty may be defined as an attitude toward the loyalty object or as repeat patronage behavior; alternatively, the definition may combine attitude and

behavior in an additive or an interactive expression (East, Gendall, Hammond, & Lomax, 2005). Like any interpersonal relationship, a customer-oriented business relationship is dependent on trust. Trust is rooted in the customer's belief that a business is responsive to their needs and problems and accessible when they need help; it keeps customers satisfied on core business attributes and help a business increase customer loyalty (Bhatty, Skinkle, & Spalding, 2001). Given the intense competition and ever-changing consumer dynamics, the hospitality industry must understand how consumers view hospitality services and products and focus on strategies to increase customer satisfaction and to retain customers.

Taking retailing industry as an example, customer loyalty is a critical issue because it can yield favorable operating cost advantages (Huddleston, *et al.*, 2004). Further, obtaining a new customer costs five to six times as much as retaining current a customer; and if a business keeps an additional 5% of existing customers, the total lifetime profits from a typical customer can increase by 75% (Reichheld, 1996). Other benefits of having a loyal customer base include: the likelihood of increased consumption over time (Huddleston, *et al.*, 2004); building a word-of-mouth reputation to help expand the customer base (East, *et al.*, 1995); and streamlined inventory management, and simplified capacity forecasting (Baloglu, 2002). Moreover, it is crucial for a business organization to be successful in terms of retaining customer loyalty; so the total customer experience is the focus of improvement (Calhoun, 2001). An extended service encounter can result in relationship-building between the customers and employee, whereas a brief encounter is more likely to involve a simple transactional exchange based on a prescribed method of service-delivery (Bitner,

1990). To become the primary brand for customers, lodging companies must develop strategies that recognize loyalty as a multifaceted variable that influence customers preferences and decision making.

Generally, customers define their loyalty to a business organization according to their total experience with it. However, quality aspects such as “friendliness”, “helpfulness”, and “politeness” are likely to be interpreted differently by various guests and are assessed subjectively. On the other hand, Oliver (1981) defined customer satisfaction as a customer’s emotional response to the use of a product or service. In the marketing research field, most of the studies linking service quality and behavioral intentions have been conducted in one specific service setting. Customer loyalty is viewed as driven by the overall customer experience. Ensuring alignment of all possible service elements with each and every customer’s needs is the optimum goal. Qu and Brown (2001) reported that to encourage repeat visit to a tourist destination, it is necessary to enhance positive images while reducing negative ones in the minds of customers.

Needless to say, satisfying customers is especially important because it encourages repeat business and fosters word-of-mouth advertising (Spinell & Canavos, 2000). Often, positive tangible cues, such as an organized working environment, food that is well prepared and presented, restaurant items that are clean and in good working order, etc., may serve as dominant attributes when guests assess service delivery. Improving customer relationships and increasing loyalty is not just simply about managing interactions with customers but serving them using a fundamentally improved approach. Reliability can be increased through consistent tangible cues; thus,

with appropriate ISSI in place, perceived service quality can be improved. When core attributes and tangibles services become necessary for customer attraction, it can have several impacts for long-term customer retention and loyalty (Calhoun, 2001).

Issues in Hotel Service Quality

Though product quality has been defined and measured with increased levels of precision, managing service quality still can be quite problematic. Especially in hospitality fields, the problems of managing service quality are related to the unique characteristics of service: intangibility, heterogeneity, inseparability, and perishability.

Lodging services play a major role in the hospitality industry in attracting tourists and promoting regional/political development and cultural knowledge. Many hotel companies are making a concerted effort towards total quality management (TQM) between all service sectors within lodging facilities. Since the “product” is intangible, satisfaction is a perception about performance (Berry, 1987). Service satisfaction is a function of the consumers’ experiences and reactions to a provider’s behavior during the service encounter. It is also a function of the service setting (Nicholls, Gilbert, & Roslow, 1998). Therefore, the increased significance of the services sector to the global economy has led to a heightened concern of hospitality industry professionals, as well as consumers, regarding the quality of services being offered. Consumers in the hospitality industry nowadays are increasingly sophisticated with more education, discretionary income, and leisure time.

Perceived quality is frequently compared to overall attitude, and the two constructs are viewed as similar (Bitner, 1990; Zeithaml, 1988; Parasuraman, Zeithaml,

& Berry, 1988). Perceived quality is viewed as similar to attitude because it represents a general, overall appraisal of a product or service. Furthermore, perceived quality is (1) different from objective or actual quality, (2) a higher level abstraction rather than a specific attribute of a product, and (3) a global assessment that in some cases resembles attitude (Zeithaml, 1988; Meuter, Ostrom, Roundtree, & Bitner, 2000). Consumer expectations are pretrial beliefs about a product that serve as comparison standards or reference points against which the product is judged (Parasuraman, *et al.*, 1993).

To the customer, value is the benefit received for the burdens endured – such as price, and inconvenient location, unfriendly employees, or an unattractive service facility. It has been noted that consumers use a variety of cues to form an overall evaluation of the quality of products and services. Even though products and services consist of many attributes, consumers tend to base their overall perception of quality on just a few attributes or in some cases just one (Zeithaml, 1988). Quality service helps a company maximize benefits and minimize non-price burdens for its customers (Berry, Parasuraman, & Zeithaml, 1994). Nowadays, customers are willing to participate in quality service without training and, more critically, without a visible economic reward (Harris, Baron, & Ratcliffe, 1995). In the case of leisure services, more than just the perceived quality of the service (e.g. whether a meal was delivered in a timely fashion) matters whether consumers are satisfied with the service experience (Wakefield & Blodgett, 1994). More-demanding customers require hotel operators to meet/exceed quest expectations and develop creative strategies to earn satisfied and repeat business.

The product-related and/or service-related intrinsic cues are regarded as forming part of the product's material composition and are consumed along with the

product or service itself; therefore, they cannot be changed without altering the nature of the product or service (e.g. product's size, format and style). However, previous studies (Hartline & Jones, 1996; Zeithaml, 1988) have found that the relative importance of intrinsic/extrinsic cues is contingent on several key factors. For instance intrinsic cues are more important when: (1) they are known to be predictive of quality, or (2) during consumption of the product, or (3) when making pre-purchase decisions in which the consumer actively seeks intrinsic attributes. Customers tend to rely more heavily on extrinsic cues when: (1) intrinsic cues are not available, (2) evaluation of the intrinsic attributes is too time-consuming; or (3) quality is too difficult to evaluate (Gould-William, 1999). If customers feel a loss of control in the service encounter, they may have a variety of negative responses (Namasivayam & Hinkin, 2003).

In order to maintain a positive hotel brand image and equality, one strategy that was related to success is the delivery of high service quality, especially during times of intense competition both domestically and internationally (Wong, Dean, & White, 1999). In addition, knowing what drives customers' value perceptions should allow hoteliers to allocate resources more efficiently (Mattila, 1999). The customers of a service engage in a subtle and complex personal and psychological experience (Schneider & Bowen, 1993). Satisfaction guarantees require a full-time network of support on the interior side of an organization (Wagner, 1994). It also requires personal commitment of top management to ensure understanding of its guarantee at the property and service setting level.

Lockyer and Fraser (1993) identified five points regarding future expectations of service in the hospitality industry. These five points are: (1) increased demand for

service; (2) greater diversity of visitor mix; (3) larger individual sectors of nationalities; (4) need for more staff with a wider range of skills and increased flexibility; and (5) more competition. These points, with the increasingly hostile nature of the business environment are forcing many within hospitality sector to invest in delivery of higher levels of service quality as a means of achieving competitive differentiation (McCull, Smith, White, & Field, 1998).

Concepts in Hotel Services

In the recent decade, ISSI and relevant service design have been well recognized as an important aspect for improving service and product performance in many business sectors, such as banking industry and Medicare systems. Unlike those service business sectors, the hospitality industry did not utilize ISSI and relevant service design for service and product performance improvement in order to exceed overall customer satisfaction. Generally, ISSI refers to man-made, physical surrounding as opposed to the natural or social environment (Bitner, 1992). Namely, the ISSI should: (1) provide an excellent opportunity to meet or exceed customer expectations in the overall service experience, (2) be part of the service itself and helping create a memorable experience, and (3) be elements related to spatial layout, functionality, and aesthetic appeal (Bitner, 1992; Wakefield, & Blodgett, 1994; Nie, & Young, 1997; Nicholls, Gilbert, & Roslow, 1998; Fottler, Reberts, & Spears Jr., 2000).

ISSI and/or relevant service design can add value for customers by improving the service's benefits or reducing its burdens (Zeithaml, 1988); ISSI can also attract new customers, increase service use, improve competitive differentiation, increase

productivity, reduce labor costs, and strengthen employee motivation and satisfaction. Successful ISSI may also often require increased training and education of both customers and employees (see Table 4). Thus, ISSI can be viewed as the reconstitution, or rearrangement of processes that make up a service (Berry & Lampo, 2000). For the hospitality industry, services are inseparable from the service provider and the service customers (Friedman & Smith, 1993).

Table 4. Concepts of Service Redesign

Service Redesign Concept	Potential Customer Benefits	Potential Company Benefits	Challenges/Limitations
Self-Service Customer assumes role of producer	Increases perception of control Increase speed of service Improves access Saves money	Lowers cost Increases productivity Enhances technology reputation Differentiates company	Requires customer preparation for the role Limits face-to-face interaction between customer and company Create difficulty in obtaining customer feedback
Direct Service Service delivered to the customer's location	Increases convenience Improves access	Eliminates store location limitations Expands customer base Differentiates company	Creates additional logistical burdens May require costly investments Requires credibility/trust
Pre-Service Streamlines activation of the service	Increase speed of service Improves efficiency Shifts tasks from customers to service provider Separates service activation from delivery	Increase ability to customize service Improves efficiency Increase productivity Differentiates company	Requires extra customer education and employee training to implement smoothly and effectively
Bundled Service Combines multiple services into a package	Increase convenience Customize service	Create opportunity to charge higher prices Differentiates company Aids customer retention Increase per capita service use	Requires extensive knowledge of targeted customers May be perceived as wasteful
Physical Service Manipulation of tangibles associated with the service	Increase convenience Enhances function Cultivates interest	Differentiates company Improves employee satisfaction Increase productivity	Can be easily imitated Required expense to effect and maintain Raises customer expectations for industry

Sources: Berry & Lampo (2000) – Service Redesign Approaches (P.267).

Despite the current economic benefits that can be gained, hotel businesses can receive greater benefits from improving current service settings. Quality service is recognized as one strategy that has been related to the success of hotel businesses, especially during the times of intensive competition both domestically and internationally. Very few studies have been conducted on awareness and examination of service customers and education of customers. Visionary hoteliers should make a concerted effort for better service provision by re-examining the hotel informative service setting items/design as well as adding customer education to their operations management. Hotel companies that deliver great service have employees who consistently function near maximum productivity. Employees at most lodging companies do not function at this level.

The traditional focus has been on quantifiable outcomes rather than measures directly related to service (e.g., labor turnover, accident rates, productivity, and service/environment setting). Furthermore, the guarantee of customer satisfaction may be invoked when three conditions exist regarding guest's complaint: (1) the guest perceives the problem as high in severity; (2) the guest believes that the problem is the fault of the hotel, and (3) the hotel is unable to correct the problem in any other way that would satisfy the guest (Enz, & Sigauw, 2000). Understanding service satisfaction and service quality may only be a first step in improving customer-hotelier relationship. From an economic perspective, understanding the levels of customer needs should be the ultimate goal of any hospitality provider. As such, linking customer satisfaction and ISSI to perceived service quality could be an organizational priority. On the other hand, the production and distribution of services within

international hospitality involves cross-cultural experiences of both tourists and suppliers of hotel services. Schneider (1994) attributed the lack of focus on service outcomes as a measure of performance to the manufacturing paradigm within which HRM is said to have developed. Relatively little systematic knowledge exists about the impact of one's culture upon the perception and evaluation of satisfaction with service quality in the context of hospitality (Weiermair, 2000).

As discussed earlier, the hospitality industry is a booming business sector and needs up-to-date operational settings to achieve increased professional development. A key factor leading to greater success is to deliver quality/efficient services. Research into the specific links between ISSI and customer-perceived quality is, therefore, important. The amount of effort invested in researching the managerial staff response to the service encounter has not matched that of analyzing the customer response. There have been many changes in the global environment, such as technological advancements, economy changes, evolving workplace dynamics, hotel brand imaging, and even changing cultural work force. Such interacting factors leave the lodging industry with several characteristics that are different from other service businesses. Therefore, it is essential that objective research be conducted to get a new focus on directing/education customers for those self-served service items.

Essential Methods of Measuring Service

For decades, satisfaction and perceived quality have received wide attention in the services marketing literature; works on this concept have dealt with these issues in many different ways. On the one hand, researchers have tried to provide a conceptual

definition of satisfaction and to distinguish it from the concept of perceived quality and attitude. On the other hand, efforts have been made to develop reliable and valid measures for service quality using various approaches. Perceived quality is frequently compared to overall attitude, and the two constructs are viewed as similar (Bitner, 1990; Parasuraman, Zeithaml, & Berry, 1988, Zeithaml, 1988).

In practice, the service-satisfaction model has served as a surrogate measure of service quality; although satisfaction has positive definitional tone, yet it is important to view customers' perceptions. As far as the distinction between satisfaction and perceived quality is concerned, several researchers have attempted to provide clarification between the two concepts. In hospitality fields, most studies use SEVQUAL and Importance-Performance Analysis (IPA). According to Brown and Bond (1995), the gap model is one of the best received and most heuristically valuable contributions to the service literature. The model identifies key internal discrepancies or gaps relating to managerial perceptions of service quality, and tasks associated with service delivery to customers. (Parasuraman, Zeithaml, & Berry, 1985).

The SERVQUAL Model

The overall process by which consumers assess the quality of a service or product is considered to be very complicated (Hartline & Jones, 1996). One of the most widely-known contemporary models to consider the viewpoint of both the provider and the customer was proposed by Parasuraman, Zeithaml, and Berry (1985). This model enables perceptual gaps to be identified. In 1991, these authors developed a framework

for the SERVQUAL scale that enables actual measurement of service quality. The model on which SERVQUAL is based has customers evaluate the quality of a service on five distinct dimensions: (1) *Tangibles*: physical evidence, appearance of physical facilities, personnel, and communication materials; (2) *Reliability*: ability to perform the promised service dependably and accurately; (3) *Responsiveness*: willingness to help customers and provide prompt service; (4) *Assurance*: knowledge and courtesy of employees and their ability to convey trust and confidence; and (5) *Empathy*: the provision of caring individualized attention to customers.

The SERVQUAL model of service quality states that the consumer evaluates the quality of a service experience as the outcome of the difference (gap) between expected and perceived service (Parasuraman, Zeithaml, & Berry, 1990). The model helps analyze possible sources of quality problems through the identification of five discrepancies, termed as quality gaps, between the various elements of the basic structure. These five quality gaps are in the quality management process:

Gap 1. The management perception gap. Managers' perceptions of customers' expectations may be different from actual customers' needs and desires, suggesting that management perceives the quality expectations inaccurately.

Gap 2. The quality specification gap. Divergences in service quality specifications might signify that service providers might not be translated into appropriated service specifications.

Gap 3. The service delivery gap. This gap is referred to as the service performance gap and denotes that quality specifications are not met by the performance in the service production and delivery process.

Gap 4. The market communication gap. This gap suggests that promises given by market communication activities are not consistent with the service delivered.

Gap 5. The perceived service quality gap. This gap indicates that perceived service falls short of the expectations of customers.

The SERVQUAL model (Parasuraman, Zeithaml, & Berry, 1993) has been extensively used in various service contexts and has become an increasingly popular measure of service quality within the hospitality industry. This model has incorporated the conceptual and empirical perspectives. This kind of information has practical implications for hoteliers as they can direct their resources to improve weak service dimensions and to refine their marketing efforts so that customer expectations are met by the service delivered. SERVQUAL model can be defined as an additional series of items, which capture the importance consumers placed on each service attribute. The *service quality* formula can be expressed as follows:

$$\text{Service Quality} = f(\text{Performance} - \text{Expectations}) * \text{Importance}$$

The SERVQUAL model has been used in many areas; however, some researchers still raise concerns about the gaps that captured by the SERVQUAL model. It has been suggested that information cannot be obtained without the proper technique, and that the individual importance and performance of service may need to derive by

subscales (Hemmasi, Strong, & Taylor, 1994). In this manner, Martilla and James (1977) claimed that the Importance-Performance Analysis (IPA) model can better identify specific service quality/ attributes on a two-dimension grid.

The SERVPERF Model

The SERVPERF model, developed by Cronin and Taylor (1992), included 22 items of SERVQUAL; additionally, the SERVPERF model includes the overall ratings of satisfactions, perceived service quality, and purchasing intention. In other words, the SERVPERF model can be considered as an alternative instrument that is focused on the performance-based of service quality. In addition, SERVPERF, the unweighted perceptions component of SERVQUAL, has been shown empirically to outperform SERVQUAL in predicting behavior intentions (Mehta, Lalwani, & Han; 2000).

Customer satisfaction can lead to market share and increased profits. Within this context, evaluating the service quality offered to customers is essential. Cronin and Taylor's (1994) research suggested that the performance-minus-expectations is inappropriate basis in terms of measuring service quality; although expectation can have a significant effect on customers' value judgment and perception of overall service quality. The main difference between SERVQUAL and SERVPERF is the focus of SERVPERF on underlying the facts that customer satisfaction is the result of mostly service quality (Gumus & Koleoglu; 2002). The gap-difference cannot be assessed due to the lack of pairing of expectation measurements. Although

SERVQUAL has been empirically tested in a number of studies involving service settings, its use in hospitality environment has been limited.

The preceding discussion addressed by Parasuraman, Zeithaml, and Berry (1993) that the practice of measuring only perceptions does not necessarily mean performance-based measures were superior to disconfirmation-based measures. In addition, Cronin and Taylor (1994) also revealed that the operationalization of service quality (performance-expectations) by SERVQUAL appears largely unsupported by both conceptual and empirical grounds. They also claimed that SERVPERF outperformed other competing models in service environments, and that it provided a useful tool for measuring overall service quality attitudes. However, the SERVPERF model is similar to the SERVQUAL model in the issues which are still remain unresolved. Both models raise similar calls for future research on the important areas of service quality and consumer satisfaction (Cronin & Taylor; 1994).

The Importance-Performance Analysis (IPA) Model

Importance-performance analysis was introduced by Martilla and James (1977) as a method for developing and analyzing business strategies. This technique can identify strengths and weaknesses of a market offering in terms of two criteria that a person uses in making a choice. A set of attributes (Figure 2) pertaining to a particular service and/or good are evaluated on the basis of importance of each to the customer, and how the service and/or good is perceived to be performing relative to each attribute.

To adopt the IPA model in this study, mean performance and importance scores can be used as coordinates for plotting each ISSI (informative service setting items) on a two-dimensional matrix. Then this matrix can be used to prescribe the ISSI attributes for improvement and can provide guidance for strategy formulation (Sampson & Showalter, 1999). Importance-Performance Analysis has been used by researchers for assessment in a wide variety of service areas. Similar to the SERVQUAL model, IPA allows the service quality to be presented as function of customer’s perceptions of importance and performance of service attributes.

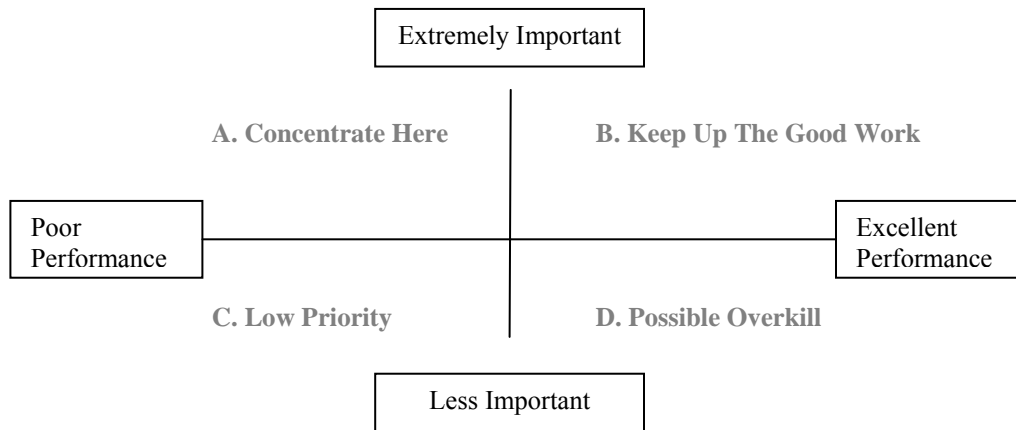


Figure 2. The Original IPA Framework

Quadrant A. Concentrate Here.

Customers consider these dimensions to be important but they think the service/product are not performed well.

Quadrant B. Keep Up the Good Work.

Customers consider these dimensions to be important and are satisfied with the way they are being performed. .

Quadrant C. Low Priority.

Customers consider that these dimensions are neither performed well nor are important. .

Quadrant D. Possible Overkill.

Customers consider that these dimensions are performed well but they are not important.

The traditional Importance-Performance Analysis has two inherent weaknesses (Keyt, Yavas, & Riecken, 1994). First, it considers object's own performance in terms of a particular attribute. In other words, this technique ignores the object's performance vis-à-vis competitors. Second, the IPA technique does not recognize the determinant of an attribute even though the technique takes into account attribute salience (i.e. importance). For instant, one ISSI attribute may be very important (i.e. salient) to one hotel guest, but it may not considered as an alternative attribute to another hotel guest. In another case, the customer expectation is not included in IPA because customers "expect" uniformly high levels of services (Brown, Churchill, & Peter, 1993). Hence, solely focusing on salience of the ISSI attributes can be considered beneficial.

Conceptual Framework

The conceptual framework of this study builds upon the works from several fields and disciplines. These fields are consumer behavior, human resource management, hospitality marketing and cultural dimensions. As service quality is

becoming a major part of business practice, it is important to be able to measure and research its effectiveness. The purpose of this paper is to examine service quality from ISSI prospects and determine which items/dimensions best predict overall service quality in the hospitality industry by applying a modified version of Importance-Performance Analysis (IPA).

IPA (Martilla & James, 1977) constructs a model that is a performance-only based measure of service quality, which provides an improved means of measuring the service quality. This view is confirmed by Lovelock, Patterson, and Walker (1998), who stated that IPA is an especially useful management tool in helping to “direct scarce resource to areas where performance improvement is likely to have the most effect on overall customer satisfaction.” The IPA technique also has the benefit of pinpointing ISSI attributes that should be maintained at present levels and “those on which significant improvement will have little impact” (O’Neill, Palmer, & Charter, 2002).

Based on literature review and general industrial information, ISSI elements can be categorized into two groups – internal ISSI and external ISSI. The internal informative self-serve items are the products that directly relate to the hotel services and/or products (e.g. hotel business cards, sign boards of location maps and floor plans, direction and operation hours of in-house facilities, etc.). The external informative self-serve items are the products that provide service and/or products from outside the hospitality supply (e.g. city/regional map, transportation information, museum and art gallery guide, etc.). The ISSI attributes research model is shown in Figure 3. It represents hypotheses based on the perceived Importance-Performance for both

internal and external ISSI attributes.

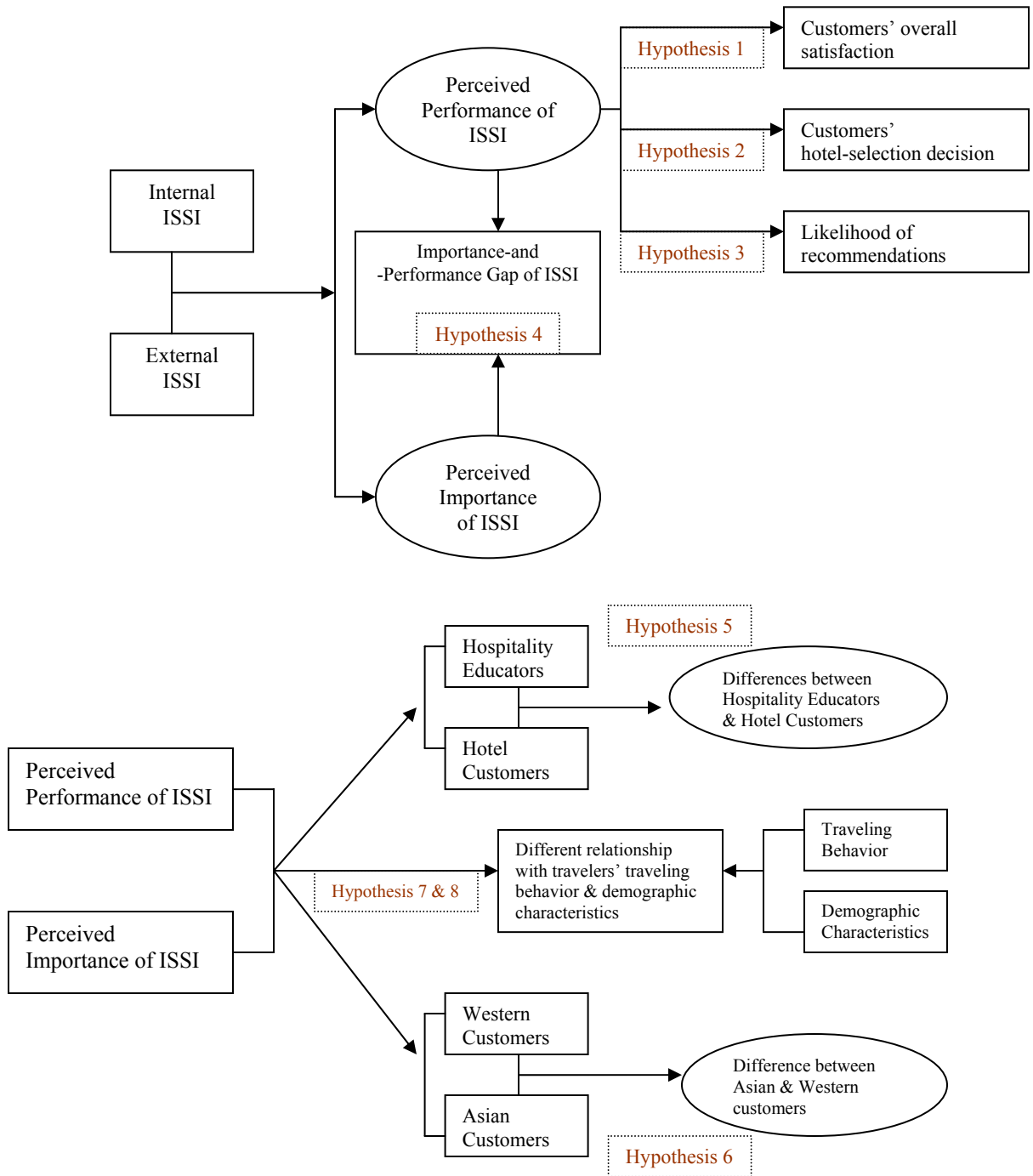


Figure 3. The ISSI (Informative Service Setting Items) Attributes Research Model

Hypotheses

Based on the review of the literature, research objectives, and the conceptual framework, the following research hypotheses are proposed. They are graphically shown in Figure 3.

H1: The performance of current ISSI (informative service setting items) in U.S. hotels has a significant positive impact on customer's overall satisfaction level.

H₀₋₁: There is **no** significant positive impact of current ISSI performance on customer's satisfaction level.

H_{A-1}: There is a significant positive impact of current ISSI performance on customer's satisfaction level.

H2: The performance of current ISSI (informative service setting items) in U.S. hotels has a significant positive impact on customer's hotel-selection decision.

H₀₋₂: There is **no** significant positive impact of current ISSI performance on customer's hotel-selection decision.

H_{A-2}: There is a significant positive impact of current ISSI performance on customer's hotel-selection decision.

- H3: The performance of current ISSI (informative service setting items) in U.S. hotels has a significant positive impact on determinants of customer's likelihood of future recommendation.
- H₀₋₃: There is **no** significant positive impact of current ISSI performance on determinants of customer's likelihood of recommendation.
- H_{A-3}: There is a significant positive impact of current ISSI performance on determinants of customer's likelihood of recommendation.
- H4: The gap between the perceived Importance and Performance of ISSI by various hotel customers differs significantly.
- H₀₋₄: There is **no** significant difference between Importance and Performance of ISSI in US hotels as perceived by hotel customers.
- H_{A-4}: There is a significant difference between Importance and Performance of ISSI in US hotels as perceived by hotel customers.
- H5: The perception of Importance of ISSI and Performance of ISSI are significantly different between hotel customers and hospitality educators.
- H₀₋₅₁: There are **no** significant perceived *Importance* differences between hotel customers and hospitality educators.

- H_{A-51}: There are significant perceived *Importance* differences between hotel customers and hospitality educators.
- H₀₋₅₂: There are **no** significant perceived *Performance* differences between hotel customers and hospitality educators.
- H_{A-52}: There are significant perceived *Performance* differences between hotel customers and hospitality educators.
- H₆: The perception of the Importance of ISSI and Performance of ISSI are significantly different between Western customers and Asian customers.
- H₀₋₆₁: There are **no** significant perceived *Importance* differences between Western customers and Asian customers.
- H_{A-61}: There are significant perceived *Importance* differences between Western customers and Asian customers.
- H₀₋₆₂: There are **no** significant perceived *Performance* differences between Western customers and Asian customers.
- H_{A-62}: There are significant perceived *Performance* differences between Western customers and Asian customers.

H7: The perceived performance of ISSI has a significant relationship with customers' traveling behavior.

H₀₋₇: There is **no** significant relationship between customers' traveling behavior and their perceived performance of ISSI.

H_{A-7}: There is a significant relationship between customers' traveling behavior and their perceived performance of ISSI.

H8: The perceived performance of ISSI has a significant relationship with customers' demographic characteristics.

H₀₋₈: There is **no** significant relationship between customers' demographic characteristics and their perceived performance of ISSI.

H_{A-8}: There is a significant relationship between customers' demographic characteristics and their perceived performance of ISSI.

CHAPTER III

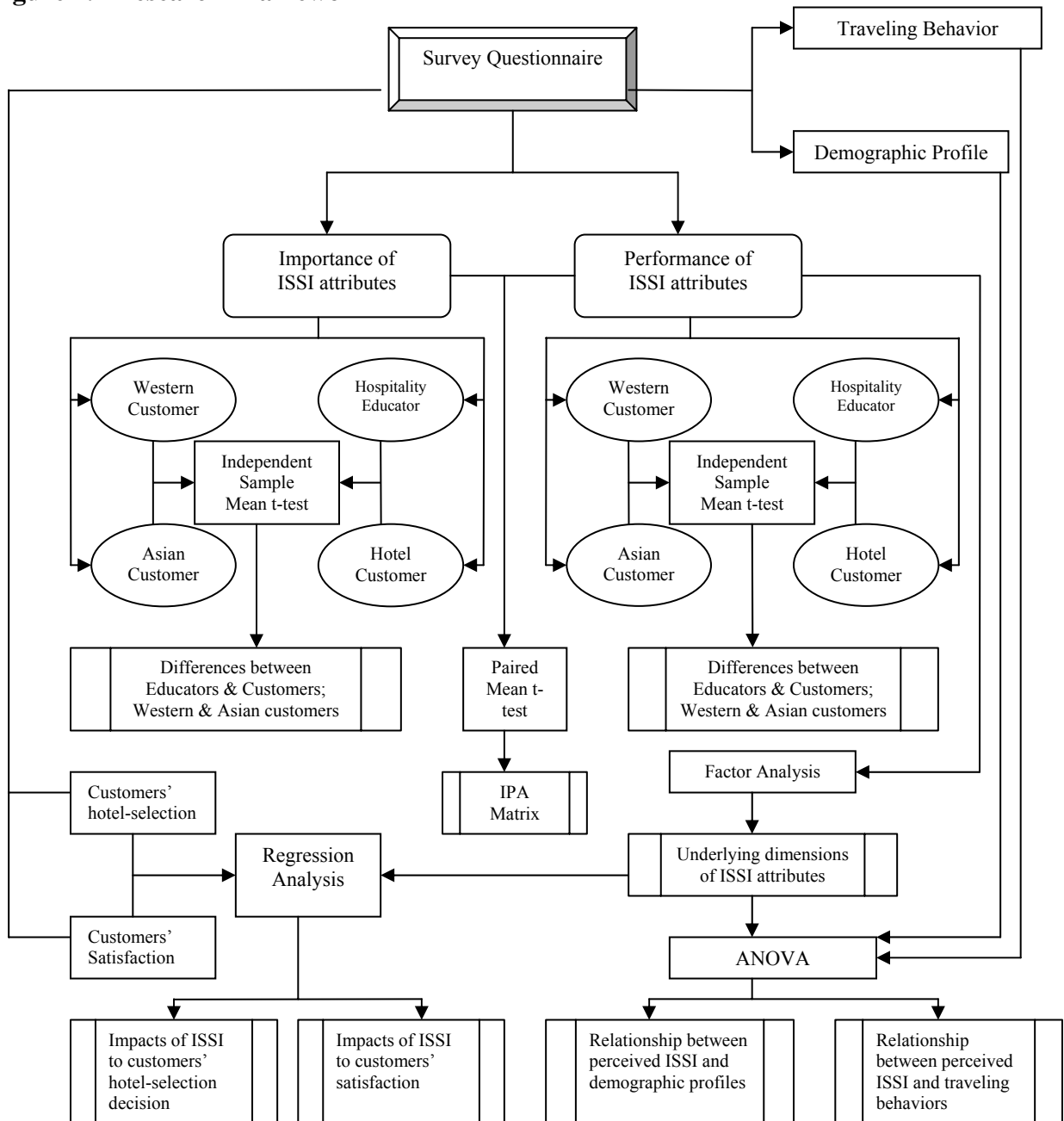
METHODOLOGY

Researchers have focused on the issues that surround the conceptualization and measurement of service quality (Parasuraman, Zeithaml, & Berry, 1985, 1988). Hence much progress has been made in understanding various aspects of service quality. However, better insight into the relationships between service quality and a range of customer behavioral intentions is still needed (Gould-Williams, 1999). Very little has been done to actually determine the needs of international travelers regarding hotel amenities. In addition, little information is known regarding the attributes of *Informative Service Setting Items* (ISSI) in lodging industry.

Research Design

The purpose of this study was to uncover how the hotel ISSI (informative service setting items) were being perceived by hotel customers, and how these perceptions affect customers' satisfaction and their hotel-selection decision. Thus, the research design for this study was a cross-sectional descriptive research that investigated customers' perceptions of ISSI. To learn more about ISSI, hotel services, application, and ISSI that are used by hotel guests; a survey was conducted. The survey examined the importance of ISSI and the relevant Importance-Performance of ISSI to hotel customers. The research framework is shown in Figure 4.

Figure 4. Research Framework



Research Instruments

Chadee and Mattsson (1996) stated that research in service quality is focused upon methods for monitoring operations to ensure conformance to specifications (operational perspective) and for measuring customer satisfaction (marketing perspective). Very few studies, however, have focused on a service from the customer self-guide/self-serve interactive perspective.

A self-administered questionnaire to gather the specific insight/viewpoints and information regarding ISSI was designed and posted online. A webpage linkage allowed the target population to access the online survey. The structured measurement technique that relied on the Likert-type scale and itemized-rating scale that related the effective and/or important components of ISSI was adopted. The scales measurement techniques were utilized to capture the unique assessment of ISSI components and customers' perceptions regarding current hotel ISSI's. The end goal was to understand the relationship of ISSI attributes on customers' perceived quality of hotel services. Also, the survey data could be used to analyze demographic characteristics that differentiate perceptions of various kinds of informative service items.

Survey Questionnaire

The survey questionnaire (Appendix B) was developed as a self-administered instrument that included four sections; the questionnaire was posted on a website and did not require any special identification for access. The first section was designed to gather general information of travel pattern for hotel guests. Respondents were asked

questions regarding their traveling behavior (e.g., purpose of trip, nights of stay, and reservation method) and demographic characteristics (e.g., gender, age group, and educational level).

The second section of the survey was designed to examine current ISSI that were used in current U.S. lodging facilities. More than thirty informative service setting items were identified from the literature and industrial reviews. They were then grouped as internal service setting items (e.g., sign boards of location maps and floor plans, information for hospitality business alliance – reservation system or airline alliance). More than ten informative service setting items were grouped as external service setting items (e.g., city/regional map, transportation information). In this section, survey participants were asked to identify the current hotel ISSI attributes and asked to rank the Importance-and-Performance of ISSI attributes. A five-point Likert-type scale (with 1 being *not important at all* and with 5 being *very important*) was used for ranking both internal and external ISSI. For the performance of the ISSI, another five-point Likert-type scale response format (with 1 being *poor performance* and with 5 being *excellent performance*) was used.

The third section of the survey was series of questions on the customers' perceptions about service quality specification information for ISSI. Respondents were asked about their general experience relative to ISSI attributes during their stays at hotels. For example, difficulties in accessing an ISSI. Also, attributes that related to ISSI quality were designed to be measured using nominal scales to allow respondents to select the most suitable description to indicate how the ISSI quality experience represented their willingness to book specific hotels. The affective attributes of service

quality were measured on a 5-point Likert-type scale (with 1 being *strongly disagree* and with 5 being *strongly agree*) in order to examine customers' perceptions.

The fourth section of the questionnaire inquired about respondents' demographic information (e.g., gender, age group, place of residency) in order to establish the profiles of the respondents.

Validity and Reliability

In order to provide useful data, an instrument must serve as an accurate counter or indicator of a measure. Validity and reliability are the major criteria for evaluating a measurement instrument. Validity refers to the extent that a test/measurement adequately represents the relevant aspects of the criterion. Reliability refers to the accuracy and precision of a test/instrument. And it is universally agreed that a counter or indicator should truly reflect the criteria a measurement attempts to investigate.

The *content validity* of a measurement instrument is the extent to which it provides adequate coverage of the topic under study (Churchill, 1996). If the instrument contains a representative of the subject matter of interest, one must agree on what elements constitute adequate coverage of the problem. To learn more about ISSI relevant issues, a pilot test (n=14) was conducted to test the efficacy and clarity of the questionnaire. Participants in the pilot test indicated that the questionnaire was too long and some of the ISSI on the list were not clearly stated. Revisions of the questionnaire were made based on the recommendations from the feedback of the pilot test, and the ISSI amenity list was reduced to 39 from 50 by combining some attributes. Also examples were added to clarify some ISSI attributes.

Construct validity, as Churchill (1996) stated, is the most difficult type of validity to establish. Construct validity is complex and abstract because of the difficulty in conforming a measurement to predicted correlations with other theoretical propositions.

Pilot Test

A pilot test was conducted to examine the reliability and validity of the survey questionnaire. The questionnaire was distributed to graduate students who were enrolled in the School of Hotel and Restaurant Administration at Oklahoma State University. The pilot test was conducted in March 2005. There were 14 responses for the pilot test, and the results from this pilot test provided useful feedback on the questionnaire wording, measuring scales, design format, and additional information regarding informative service setting items.

Reliability

In general, reliability is concerned with estimates of the degree to which a measurement is free of random or unstable error (Cooper & Schindler, 1998). The internal consistency between the items in the questionnaire was estimated by using Cronbach's (1951) coefficient alpha. Based on the information gathered from the pilot-test, the Cronbach's reliability coefficients were 0.87 for satisfaction attributes, 0.94 for importance attributes, and 0.96 for performance attributes. They were all above the suggested value of 0.7, which indicated a high level of reliability of measurement among variables in this study (Cooper & Schindler, 1998).

Sampling Plan

The main focus of this study was to understand the current existing hotel informative service settings that direct/self-serve the guests of general U.S. lodging companies. The target population for this study was hotel customers and hospitality educators who had stayed in U.S. lodging properties. First, a sample of faculty members from hospitality programs was surveyed. The educator sample used in this study was obtained by using a census of the Council of Hotel, Restaurant and Institutional Education (CHRIE) members who belonged to hospitality education institutions. The total number of educators in the census was approximately 1000; the list of members' email addresses was obtained from the online CHRIE directory in 2004. The CHRIE members were invited to participate in the online survey from June 27th to July 16th in 2005.

The primary method of approaching customers who had stayed at US lodging facilities was formulated via a webpage. The online-interest groups (e.g., traveling group) from Yahoo.Com on different language sites were contacted via electronic message and invited to participate in the survey. To access the most suitable travel groups for this study, the "groups" function at Yahoo.Com was selected as an approach for sending out the electronic message. The desired outcome was to reach as many hotel customers as possible via the Internet. Approximately 180 online-interest groups (see Table 5) were obtained from Yahoo.Com by using the "groups" function in 2005. The size of each group was ranged between 3 to 3000 people. The electronic invitation to participating in the survey was posted on the message boards of each group. The

online survey questionnaire was posted on a website for the three weeks between September 1st to September 21st in 2005.

Assuming a conservative response rate of 20% plus 25% non-usable responses and invalid e-mail address, the goal was to reach approximately 2000 subjects (1000 online-interest group population and 1000 CHRIE population) in order to achieve a reasonable sample size for data analysis. Although larger sample sizes are preferred, a number around 300 is usually recommended (Pedhazur, 1997). However, there was no possible tracking method of know how many people actually read the online message-board during the survey period; hence, it was extremely difficult to estimate the possible response rate from the online-group population. The estimate sample size for this study was 300.

Table.5 Online-interest Group from Yahoo.Com

International Yahoo.Com		Online Groups		
Yahoo Americas	A-Travel	crazy_pao82	Iloveplanes	study-travel_abroad
Argentina	AAA-Travel-Options	costa-rica	indiaandtheworld	taiwanese2canada
Brazil	aegeanaccessclub	cuba-travel	internationalmarriedandcouples	tesolconnexions2003
Canada - English	adventure-travel	Dive-Arkansas	inflightconnections	The-Onyx-Hotel-Club
Canada - Spanish	adventure-travel-talk	e-travel	info4x4	tourism_travel
Mexico	amigascubanas	ecoadventuremexico	jamaica_travel_tips	Trailerlife
USA - English	Amtrak_Trave	eco-hotel	japan-trip	Travel-and-Adventure
USA - Spanish	amigosinvestidores	elsalbiztours	japanhomepages	travel-belize
	AR-NA	EnglishinKorea	japanbusinessociety	travel-cuba
	artofnight	escolanacional2	Jewish_travel	TRAVEL-DF
	beachbummers	explorasportadventureteam	Kayak-NJ	travel-india
	bigbuds	europa-travel	miami_travel	TRAVEL-MEXICO
	Bi-Men-Montreal	foreignerflightattendant	mongolia-travel	Travel-Tourism-GIS-SIG
	blackseniortravellers	foto_aventura	motorhome_travel	travel_canada
	blanchesgirls	fsu-travel	neworleansfrenchquarterusa	travel_hawaii
	blacksinglestravel	france-travel	Nurse_Travelers_Online	travel_host
	blind-travel	Friends_of_Norway	OISkoolSoulTravelers	travelers_viajeros
	brazil-travel	GayFraternityGlobal	olympic_travel	travelingonabudget
	budgettravel	gaybrazilinenglish	oriontoursultural	TravelTechs
	canada-trave	Global_Tourism	ot_gcr_community	TTDABali_Trainers_Forum
	Canadians_in_Japan	gruppomaster	RV-full-time-travel	turis_hotel
	canucktravel	green-travel	RVK9	turkish_tourism
	caribbean-trave	Greentour	single_travellers	usa_wat
	CHICAGO HISTORY	hip_travellers	Skylite	wiccans4ireland
	Christian_musicians	homeschool_travel	SM-tourism	
	CGSE_Canada_fr	hongkonglover	sport-travel	
	classic_campers	hotel-adm	spain-travel	Total = 105
Yahoo Asia Pacific	AirTravelASIA	dot_japanese	japanesecollegestudent	taiwaninnewyork
Australia & New Zealand	AirTravelHongKong	Explorettheworld	JapanCentralStation	tokyojapanandthensome
China & Hong Kong	AirTravelTaiwan	gaijin_japan	korea-travel	tour-travel
India	allaboutkorea	hongkongintentionclub	lisagissing	trainers_forum
Korea	aussietravelclub	hongkong2	meetaustralians	The_Best_of_Japan_Living
Malaysia	apnahimachal	hongkongclub	newzealand-travel	tourismindonesia
Indonesia	babyboomers_resources	Hospitalty_Industry	newzealandtalk	tiruchirapalli
Japan	Bi-Men-Hong-Kong	hotel_management_bba	osakajapantravel	travel_in
Philippines	budget_traveller	hoteliers_thailand	philippines-travel	travelchinese
Singapore	budgettravelinfo	india-travel	singaporetravel	tsm_iabf
Taiwan	CafeJapan	indonesia-travel	singapore-travel	vietnam-travel
Thailand	davao	japanamericafriendshipclub	taiwanesl	WTIJ
	daynasfriends	japanbusinessinfo	GAY TRAVELERS DOWNUNDER	Total = 11
Yahoo Europe	Aesculape_med	greece-travel	soulmateeg	Travel-Romania
France	bolivia-travel	hotel_chat	South_Africa	travel-italy
Germany	caravana_arcoiris_info	incontriamocioperviaggiare	studenttravellersclub	turkey-travel
Italy	Ectravel	Romania-Tourism	studyinswitzerland	Volunteers_WYD2005
Spain	france-angleterre2005	saharasilica	supersabrozon	worldstudyfranca
UK & Ireland	Gay-Gourmets	scotland-travel	Travel-Ireland	Total = 23

Analysis of Data

The Statistical Package for Social Sciences 11.5 (SPSS, 2001) was used to code and analyze data for this study. The gap between *Importance* and *Performance* perceived by hotel guests for ISSI attributes and respondents' demographic characteristics and their perceptions of satisfactory level of ISSI attributes were analyzed for each group. Data analysis in this study included the following techniques: frequency, compared-means, independent t-test, Analysis of Variance (ANOVA), Importance-Performance Analysis (IPA), Factor Analysis, and Multiple Regression Analysis.

Descriptive Statistics

Descriptive statistics were used in this study. The first part of the data analysis involved a demographic profile of respondents. Customers' demographic (e.g., gender, age group), and traveling behavior information (e.g., purpose of the visit, nights of stay) was organized into categories. This information was tabulated by using frequency and percentage. Descriptive statistics were applied in this study. The information was organized into categories, and these categories were based on customers demographic information (e.g. gender, age group, occupation), and traveling behavior (e.g. purpose of the visit, night of stay). To describe the ISSI attribute variables and ISSI satisfactory variables, means and standard deviation were calculated for each variable.

Important-Performance Analysis (IPA)

The second part of data analysis employed Importance-Performance Analysis (IPA) which involved correlating performance ratings for a specific product quality with its service attributes/performance. One of the most frequent requests made to survey respondents is to rate the importance of a particular product or service attributes. The stronger an attribute correlates with performance satisfaction, the more important the product/service is for a company to improve (Di Paula, 1999). Therefore, the second part of data analysis involved IPA to identify the importance-and-performance attributes of ISSI. The mean ratings of respondents' perceived importance-and-performance levels of ISSI were calculated then mapped into four identifiable quadrants.

A two-dimensional grid was used to display the importance of attributes on the vertical axis and the performance of attributes on the horizontal axis. In this manner, the data were presented on a grid that showed each ISSI attribute being plotted according to its importance-and-performance level. A gap analysis was also conducted on the level of the importance-and-performance of ISSI attributes that were perceived by respondents. The differences between the levels of perceived importance and the levels of perceived performance of these ISSI were explored by calculating the gap difference of each ISSI attributes; mean-comparison was adopted to test the results.

Mean Comparison

The difference between two or more sets of data is statistically significant if it actually occurs in a population. When the data are measured on an interval-ratio scale, then mean comparison can be performed to test necessary assumptions. In this study, the paired-mean *t*-test was adopted to examine the gaps between importance and performance of ISSI attributes. Furthermore, the independent sample *t*-test was used to identify the differences of perceived ISSI attributes between customers (e.g. hospitality educators as compared to hotel customers, and Western customers as compared to Asian customers).

Factor Analysis

Factor analysis is a statistical approach that can be used to analyze interrelationships among a large number of variables and to explain these variables in terms of their common underlying dimensions, called factors. Factor analysis has the ability to identify sets of related variables and even to develop a single composite measure to represent the entire set of related variables. Factor analysis begins with construction of a new set of variables based on the relationships in the correlation matrix; then it transforms the set of variables into a new set of composite components that are not correlated with each other. These combinations of factors account for the variance in the data as a whole. The objective of factor analysis is to find a way of

condensing the information contained in a number of original variables into a smaller set of factors with a minimum loss of information.

The conceptual assumptions underlying factor analysis should be related to the set of variables selected and the sample chosen. In other words, conceptual linkages should exist in the set of selected variables so that the technique has the means of determining appropriateness of correlations among independent variables.

Furthermore, the statistical consideration for factor analysis related to normality, linearity, and homoscedasticity apply to the extent the observed correlations. From a statistical standpoint, multicollinearity is also desirable for identifying interrelated sets of variables. Generally, researchers utilize some predetermined criteria in deciding when to stop factoring, and these criteria are: (1) latent root criterion, (2) percentage of variance criterion, and (3) a priori criterion. (Hair, Anderson, Tatham, & Black, 1998). Based on the information obtained from factors extracted, the best representation of the data can be finalized. Each criteria is described below.

- ❖ Latent Root Criterion – this is the most commonly used technique and it can be applied to either components analysis or common factor analysis. Each variable contributes a value of 1 to the total eigenvalue. Only when a factor has latent roots or eigenvalue greater than 1, it is considered significant, otherwise, factors with less than 1 eigenvalues are disregarded.
- ❖ Percentage of Variance Criterion – this technique is based on achieving a specified cumulative percentage of total variance extracted by successive factors. Usually, researchers should not stop extracting until factors account for 95% of the variance;

however, it is not common in social sciences to accept for 60% (or less) of the total variance.

- ❖ A Priori Criterion – this approach is most useful when testing a theory or hypothesis. Under certain circumstances, researchers already know how many factors to extract; therefore, they can stop extraction processes when the desired number of factors have extracted.

In this study, factor analysis was used to create correlated variable composites from the ISSI attributes and to identify subsequent dimensions to address in the Importance-Performance Analysis. Factor analysis assisted in better understanding of the underlying data structure and, subsequently, provided summated factor scores. The main difference between the summated scale and a factor score is that the factor score is computed based on the factor loading of all variables on the factor (Hair, *et al.*, 1998). Essentially, factor analyses can be conducted to group the results from the data collection and survey findings into possible service setting categories. Generally speaking, when factors have an eigenvalue equal to or greater than 1, then they can be considered statistically significant. Also, a variable with a factor loading equal to or greater than 0.5 can be considered statistically significant.

Multiple Regression Analysis

Multiple regression analysis is used as a descriptive tool in three types of situations, and it can be used to examine the incremental and total explanatory power of many variables. First, it often is used to develop a self-weighting estimating

equation by which to predict values for a criterion variable from the values for several predictor variables. Second, a descriptive application of multiple regression calls for controlling for confounding variables to better evaluate the contribution of other variables. A third use of multiple regression is to test and explain a causal theory, which is often referred to as path analysis. Simply put, the objective of multiple regression analysis is to predict the changes in the dependent variable in response to changes in the independent variables. Least-squares is the most used statistical procedure to rule the results. The assumptions of regression analysis are met through the course of calculating the regression coefficients and predicting the dependent variables.

The assumptions underlying multiple regression analysis apply both to the individual variables (dependent and independent) and to the relationship as a whole (Hair, *et al.*, 1998). The basic assumptions underlying multiple regressions analysis are as follows:

- ❖ Linearity of the phenomenon measured – by examining the residual plots, the linearity of the relationship between dependent and independent variables can provide predictive accuracy of the model and the estimated coefficients.
- ❖ Constant variance of the error terms – one of the most common assumptions that is violated is heteroscedasticity (i.e. unequal variances). If heteroscedasticity is present, the violation can be attributed to a single independent variable when the procedure of weighted least squares can be employed.
- ❖ Independence of the error terms – the predicted values should not be related to any other prediction. The best way to identify such an occurrence is to plot the residuals

against any possible sequencing variable. Data transformations or specially-formulated regression models can address the violation, if it occurs.

- ❖ Normality of the error term distribution – nonnormality of the independent or dependent variables is the most frequently encountered assumption violation of multiple regression analysis. *Normal Probability Plots* can be employed to compare the dependent or independent variables separately to the normal distribution.

In this study, the variate was assessed after the regression model had been estimated for meeting the assumptions of regression analysis. Then, the observations were examined to determine whether any observation should be deemed influential.

The criteria were as follows:

- ❖ R Square – *R square* (R^2) is the correlation coefficient squared, also referred to as the coefficient of determination. This value indicates the percentage of total variation of the dependent variable (Y) explained by independent variables (X_1, X_2, \dots, X_n).
- ❖ Standard Error of the Estimate – the standard error of the estimate represents an estimate of the standard deviation of the actual dependent values around the regression line. In other words, it is a measure of variation around the regression line. A smaller standard error implies a more reliable prediction.
- ❖ Regression Coefficient – the standardized regression coefficient (β value) is the value calculated from standardized data. The β value allows researchers to compare the effect on Y of each independent variable to the overall regression model.

- ❖ Standard Error of the Coefficient – it is an estimate of how much regression coefficient will vary between samples of the same size taken from the same population.
- ❖ Partial *t*-value of Variables in the Equation – this calculation measures the significance of the partial correlation of the variable reflected in the regression coefficient. It is particularly useful in helping to determine whether any variable should be dropped from the regression equation, once a variable has been added.
- ❖ Partial Correlation – the partial correlation is a measure of the variation in *Y* not accounted for by the variables in the equation that can be accounted for by each of additional variables.

Based on the underlying hotel ISSI dimensions derived from factor analysis. The multiple regression analysis was conducted to examine the possible relationship of perceived performance of ISSI attributes, or factors that influence hotel guests' hotel-selection decisions. Based on the ISSI attributes derived in this study, the regression equations for this study were expressed as followings:

$$Y_{HS} = \beta_0 + B_1X_1 + B_2X_2 + \dots + B_nX_n + \epsilon$$

$$Y_{HR} = \beta_0 + B_1X_1 + B_2X_2 + \dots + B_nX_n + \epsilon$$

$$Y_S = \beta_0 + B_1X_1 + B_2X_2 + \dots + B_nX_n + \epsilon$$

Where as,

Y_{HS} – Dependent variable: Customers' decision of hotel-selection

Y_{HR} – Dependent variable: Customer's likelihood of recommendation of the hotel

Y_S – Dependent variable: Customer's overall satisfaction with ISSI

β_0 – Constant

X_1, X_2, \dots, X_n – Latent performance dimensions

B_1, B_2, \dots, B_n – Regression coefficient of latent independent variables

ε – Random error

The main reason for employing multiple regression was that this technique could provide a better interpretation of the independent variables. The three dependent variables – customers' hotel-selection decision, customer's hotel-recommendation decision, and customers' satisfaction level – were regressed separately against the hotel attributes obtained from factor analysis. The factor scores created for the hotel attributes were used as independent variables in explaining customers' satisfaction level and customers' hotel-selection decision, and hotel-recommendation decision.

Analysis of Variance (ANOVA)

The statistical method for testing the null hypothesis about is analysis of variance (ANOVA). To use ANOVA, certain conditions must be met. The samples must be randomly selected from the normal population, and the populations should have equal variances. In addition, the distance from one value to its group's mean should be independent of the distances of other values to that mean. In ANOVA model, each group has its own mean and values that deviate from that mean; the total deviation is the sum of the squared differences between each data point and the overall grand mean. The total deviation of any particular data point may be partitioned into *between-groups variance* and *within-groups variance*. The between-groups variance represents the effect of the factors, and the within-groups variance describes the deviations of the

data points within each group from the sample mean. Intuitively, the objective of analysis of variance is to compare samples based on two or more dependent variables.

Thus, the final phase of data analysis included examining hypotheses based on factor analysis outcomes by using Analysis of Variance (ANOVA). The purpose of using ANOVA was to measure difference within, among, or between sets of data as recommended by Lewis (1984). ANOVA was used to investigate the relationship between the ISSI satisfaction factors (i.e., hotel customers' satisfaction level of ISSI) and the independent variables (i.e., customers' demographic variables and traveling behavior).

Limitations of the Study

All customer segments and service quality/performance issues; are bound to be different culturally, geographically, and politically. It is not possible to generalize lodging business environment from some hotel brands/companies. Therefore, the representativeness of the findings is limited to the target population. Due to the convenience sampling design of this study, the results of this study are only a reflection of those respondents who participated the online survey. The representativeness and generalizability of the findings are limited to the target population. Only 275 out of 502 responses were usable in this study. The respondents who did not complete the online survey may pose different opinions about hotel ISSI. Also, the survey was only conducted via World Wide Web during a specific period; people who did not response the survey could have different behavior and opinions regarding hotel ISSI services.

Non-response bias could have occurred. Thus, the results could be different if the survey were to be conducted by different method or during different time period.

This study employed methodology where survey instruments were disseminated by web-based electronic format. With the development of the Internet, researchers employ this electronic method for collecting survey data, which yield a more efficient approach to accessing the desired population. However, the most critical concern for researchers in using E-mail or Web-based survey are (1) not all members of the population have access to e-mail and to the World Wide Web; and (2) limited control of how many times one respondent participate to the same survey. Based on the data collection techniques, the study only focused on the customers who had access to the posted survey webpage during a certain time period. In other words, this study did not investigate customers who could not access the online survey. Therefore, response rate may be limited. Bias of the information gathered could occur due to the purposive sampling methods via Internet access; the results of this study only reflect on responses of those who participated.

Furthermore, the study targeted customers who stay in hotels in U.S. travel destinations. It should be noted the possibility exists that the information gathered may not be genuine due to the different demographic and cultural backgrounds among the purposively sampled customers and the customers' choices of booking hotels. Also, a major challenge for this study was the sample selection. There are degrees of limitations in approaching hotel customers as well as the Internet accessibility for customers, which could effect the results. The questionnaire was designed to match results into categories based on customers' demographic information (e.g., gender,

nationality, or occupation), traveling behavior (e.g., purpose of the visit, night of stay), ISSI attributes, and other specific criteria. It should be noted that the use of other questions or of questions worded in different ways could reveal additional findings.

CHAPTER IV

FINDINGS & DISCUSSION

The goal of this study was to ascertain the importance and performance of ISSI attributes in the U.S. hotel industry from customers' perceptions. Approximately 2000 subjects (1000 online-group population and 1000 CHRIE population) were contacted via electronic messages and 502 surveys were returned. Due to incompleteness in the online surveys that were submitted, only 275 out of 502 responses were usable.

Demographic Profile of Respondents

The demographic profile of the respondents is shown in Table 6. There were 147 (58.33 %) male respondents and 105 (41.67%) female respondents. In terms of age, surprisingly, three groups were almost equally distributed (28.24% from the 25~36 age group, 26.28% from the 36~45 age group, and 26.67% from the 46~55 age group). Only 16.99% of respondents were above 55 of years of ages, while 1.82% of the respondents were under 25 years of age.

In terms of educational background of respondents, 106 (41.57%) respondents held a doctoral degree, while 88 (34.51%) respondents held a master degree. Overall, there were 92.93% respondents held at least a bachelors degree and above.

As for the occupational background, the results indicated that 76 (29.81%) respondents had a background of hospitality educator or administrator, 59 (23.14%) respondents had a background of academic educator or administrator, and 40 (15.69%) respondents had a background of professional in business or financial fields. There

The most frequently identified place of respondents' residency was North America (57.24%). The second most frequently identified place of respondents' residency was Asia (35.29%). In following section, when comparing ISSI service attributes between Asian and Western customers, respondents who did not report Asia as the resident region were considered *Western* customers. There were 165 respondents (64.71%) categorized as Western customers.

Travel Behavior of Respondents

Travel behavior of respondents is shown in Table 7. The most frequently identified purpose of the trip to the U.S. was "Pleasure" (34.5%): 57 (35.8%) for Western customers and 31 (34.4%) for Asian customers. The second most frequently identified purpose was "Business" (29%): 59 (35.8%) for Western customers and 15 (16.7%) for Asian customers. Overall speaking, forty-nine percent of the respondents visited U.S. for pleasure purpose (34.5% for pleasure, 14.5% for visiting friends/relatives), and 44.7% (29% of business, and 15.7% of meeting/conference) of the respondents visited U.S. for business purpose.

The majority of the respondents traveled to U.S. within one year. The most frequently identified length of time since the trip to the U.S. was "less than 1 month" (33.7%); and the second most frequent identified length of time for trip to US was "2~6 months ago". However, 27 (30%) Asian customers and 12 (7.3%) Western customers traveled to the U.S. more than two years ago, with 47 (32%) for male respondents and 37 (35.2%) for female respondents.

The most frequent length of hotel stay from the most recent trip to U.S. reported by respondents was "1~3 nights": 92 (55.8%) for Western customers and 37

(41.1%) for Asian customers. It was followed by “4~6 nights” for 36 (21.8%) Western customers and for 31(34.3%) Asian customers. Overall, more than 75% of the respondents stayed fewer than 6 nights during their last trip to U.S. Surprisingly, more than 10% of the respondents stayed more than one week on their last trip to U.S.

Table 7. Travel Behavior Profile of the Respondents

	Western		Asian		Total	
	Frequency	%	Frequency	%	Frequency	%
Purpose of Trip						
Pleasure	57	34.5	31	34.4	88	34.5
Business	59	35.8	15	16.7	74	29.0
Visiting Friends/Relatives	16	9.7	21	23.3	37	14.5
Meeting/Conference	24	14.5	16	17.8	40	15.7
Others	9	5.5	7	7.8	16	6.3
Most Recent Trip to U.S.						
Less than 1 month	74	44.8	12	13.3	86	33.7
2~6 months ago	63	38.2	22	24.4	85	33.3
7~12 months ago	11	6.7	15	16.7	26	10.2
1~2 years ago	3	1.8	14	15.6	17	6.7
More than 2 years	12	7.3	27	30	39	15.3
Missing	2	1.2	0	--	2	0.8
Night of Stay						
1~3 nights	92	55.8	37	41.1	129	50.6
4~6 nights	36	21.8	31	34.4	67	26.3
7~9 nights	21	12.7	9	10.0	30	11.8
10 nights or more	14	8.5	13	14.4	27	10.6
Missing	2	1.2	0	--	2	0.8
Choose of Hotel						
Location of the hotel	60	36.4	34	37.8	94	36.9
Brand name	15	9.1	8	8.9	23	9.0
Recommended by travel agent	6	3.6	15	16.7	21	8.2
Frequent guest program	5	3.0	3	3.3	8	3.1
Online information	24	14.5	18	20.0	42	16.5
Recommended by friend/relative	17	10.3	4	4.4	21	8.2
Included in the package	20	12.1	7	7.8	27	10.6
Others	16	9.7	0	--	16	6.3
Missing	2	1.2	1	1.1	3	1.2
Reservation Method						
Use a travel agent	19	11.5	27	30.0	46	18.0
Book over the Internet	65	39.4	43	47.8	108	42.4
Call toll free reservation number	22	13.3	10	11.1	32	12.5
Call the hotel directly	36	21.8	5	5.6	41	16.1
Use a hotel directory	6	3.6	2	2.2	8	3.1
Others	15	9.1	3	3.3	18	7.1
Missing	2	1.2	0	--	2	0.8

As for respondents' choices of a hotel, they were based on the "location of the hotel" (36.9%), "online information" (16.5%), and "included in the package" (10.6%). There are 18(20%) of the Asian customers who chose a hotel based on "recommended by travel agent"; and 17(10/3%) Western customers who chose a hotel based on "recommended by friend/relative".

When booking hotel accommodations, the common methods that respondents reported were "use a travel agent" (18%), "book over Internet" (42.4%), "call toll free reservation number" (12.5%), "call the hotel directly" (16.1%), "use a hotel directory" (3.1%), and use other methods (7.1%). Other methods included "company makes the reservation", "package deals", "walk-in", and "pet friendly". For Western customers, the major approaches for booking hotel accommodations were "book over the Internet" (39.4%) and "call the hotel directly" (21.8%). For Asian customers, the major approaches booking hotel accommodations were "book over the Internet" (47.8%) and "use a travel agent" (30%).

Importance and Performance of ISSI

The ranking of 39 ISSI attributes on importance and performance are presented in Table 8-1 and Table 8-2. To measure the *importance* and *performance* of 39 ISSI attributes, 5-point scales were used. The mean rating of the perceived importance and the perceived performance of hotel ISSI in U.S. are presented in Table 9. The mean rating of *importance* for the ISSI attributes ranged from 4.31 (Direction maps) to 2.56 (Monetary info on business rental services). As for the mean rating of *performance* of the ISSI attributes, the range was from 3.88 (Direction maps) to 2.02 (Monetary info on

business rental services); and interestingly, there was no attribute rated higher than 4.0 in terms of the level of performance.

Importance

For the *importance* measurement, a five-point Likert-type scale response format (1= Not important at all, 2= A little important, 3= Somewhat important, 4= Important, 5= Very important) was used. The grand mean of the overall level of importance was 3.45. Only two ISSI items (“direction maps” and “location maps & floor plans”) had a 4.0 rating or higher. In addition to these two ISSI attributes, sixteen other ISSI attributes rated above grand mean; in other words, customers perceived that these eighteen ISSI attributes had a high level of importance. On the other hand, six ISSI attributes rated lower than 3.0 on their level of importance. They are “hotel business card with general information”, “transportation info”, “safety deposit box”, “welcome card”, “info on bathtub”, “monetary info business rental services”. So, from customers’ lodging experiences, these six amenities were considered less important in terms of hotel ISSI services.

Performance

A five-point Likert-type scale response format (1= Very poor performance, 2= Poor performance, 3= Neutral performance, 4= Good performance, 5= Excellent performance) was used for measuring the perceived performance level. The mean score of the overall level of performance was 2.93. Among 39 ISSI attributes, nineteen ISSI items had scores of 2.93 or higher. Surprisingly, no ISSI items had above a 3.0 scores;

so it is fair to say that hotel customers generally perceived that these 39 ISSI items did not have good performance when delivering services. Respondents ranked “location maps & floor plans”, “info on special dietary menu”, and “info on recreational facilities” as the top three ISSI items in terms of hotel service performance. The mean scores for the majority of ISSI on perceived performance were above 2.0; however, four ISSI attributes had rating lower than 2.5 on their level of performance. They are “health service info”, “safety deposit box”, “transportation info”, and “monetary info business rental services”. In other words, hotel guests perceived these four ISSI items as having the worst performance.

Table 8-1 Ranking of Perceived Importance of Hotel ISSI Attributes

Service Attribute	Important	
	Mean	Ranking
4. Direction maps	4.30	1
3. Location of maps and floor plans	4.09	2
30. Info on hotel shuttle services	3.97	3
21. Info on special dietary menu	3.90	4
32. City tour guide brochure	3.88	5
5. Info on recreational facilities	3.83	6
14. Direction for Internet connection outlet	3.81	7
19. Monetary info on Internet services, TV, & game programs	3.81	7
15. Directions for alarm clock, AC, & CD player	3.78	9
18. Direction for operating phone services	3.76	10
29. Direction of in-house dining facilities	3.76	10
31. City/ regional map	3.76	10
13. Info on electronic adapters	3.66	13
17. Info on check-out process via WebTV system	3.65	14
33. Restaurant guide	3.64	15
36. Brochures for local attraction & events	3.53	16
2. Info for hospitality alliance	3.52	17
22.Directions for emergency exits	3.49	18
28. Info on library/ reading room	3.44	19
16. Directions for operating TV & WebTV	3.43	20
37. Brochures for shopping guide	3.43	20
38. Museum & art gallery guide	3.42	22
8. Info on Special aromatherapy articles	3.37	23
23. Info on complementary seasonal amenities	3.36	24
10. Info on laundry services	3.31	25
35. Direction to local banks	3.27	26
25. Info on foreign currency exchange	3.24	27
39. Health service info	3.24	27
9. Monetary info on mini-bar and additional beverages	3.18	29
6. Info on small electronic appliances	3.14	30
20. Info on room services & menu items	3.13	31
26. Monetary info on business services	3.12	32
12. Brochure of introducing hotel history & development	3.07	33
1. Hotel Business card with general information	2.98	34
34. Transportation info	2.96	35
11. Welcome card	2.93	36
24. Safety deposit box	2.92	37
7. Info on bathtub	2.89	38
27. Monetary info on business rental services	2.56	39
Grand Mean	3.45	

Table 8-2 Ranking of Perceived Performance of Hotel ISSI Attributes

Service Attribute	Performance	
	Mean	Ranking
3. Location of maps and floor plans	3.61	1
21. Info on special dietary menu	3.47	2
5. Info on recreational facilities	3.36	3
30. Info on hotel shuttle services	3.34	4
18. Direction for operating phone services	3.32	5
19. Monetary info on Internet services, TV, & game programs	3.32	5
32. City tour guide brochure	3.29	7
2. Info for hospitality alliance	3.25	8
15. Directions for alarm clock, AC, & CD player	3.24	9
17. Info on check-out process via WebTV system	3.21	10
31. City/ regional map	3.18	11
10. Info on laundry services	3.14	12
29. Direction of in-house dining facilities	3.08	13
14. Direction for Internet connection outlet	3.05	14
37. Brochures for shopping guide	3.01	15
13. Info on electronic adapters	2.98	16
16. Directions for operating TV & WebTV	2.94	17
22. Directions for emergency exits	2.94	17
8. Info on Special aromatherapy articles	2.93	19
28. Info on library/ reading room	2.91	20
38. Museum & art gallery guide	2.91	20
33. Restaurant guide	2.90	22
36. Brochures for local attraction & events	2.90	22
9. Monetary info on mini-bar and additional beverages	2.89	24
4. Direction maps	2.88	25
11. Welcome card	2.83	26
6. Info on small electronic appliances	2.81	27
23. Info on complementary seasonal amenities	2.81	27
35. Direction to local banks	2.77	29
20. Info on room services & menu items	2.74	30
1. Hotel Business card with general information	2.69	31
25. Info on foreign currency exchange	2.64	32
12. Brochure of introducing hotel history & development	2.61	33
7. Info on bathtub	2.50	34
26. Monetary info on business services	2.50	34
39. Health service info	2.47	36
24. Safety deposit box	2.33	37
34. Transportation info	2.30	38
27. Monetary info on business rental services	2.03	39
Grand Mean	2.93	

Importance and Performance Gap

The overall respective importance means, performance means, gaps, and *t*-values regarding the ISSI perceived by hotel customers are shown in Table 9. That information is used to consider Hypothesis 4.

Hypothesis 4

H₀₋₄: There is **no** significant difference between Importance and Performance of ISSI in US hotels as perceived by hotel customers.

H_{A-4}: There is a significant difference between Importance and Performance of ISSI in US hotels as perceived by hotel customers.

Based on the paired-mean sample *t*-tests between the importance means and performance means, 37 ISSI attributes showed that there were statistically significant different ($p < 0.01$). The only two ISSI that did not show statistical significance at 0.05 level were “info laundry services” ($p=0.034$) and “welcome card” ($p=0.106$). Furthermore, all of the ISSI attributes had a positive mean gap score, implying that each ISSI attribute in US did not suffer a service quality shortfall. The largest gap scores were “health services” (0.77, $p < 0.001$), “direction for Internet connection outlet” (0.76, $p < 0.001$), “restaurant guide” (0.74, $p < 0.001$), “info on electronic adapters” (0.68, $p < 0.001$), and “direction for in-house dining facilities” (0.68, $p < 0.001$). In other words, these five ISSI attributes could benefit from attention and improvement efforts by hotel industry. Thus, H₀₋₄ was rejected ($t = 7.123$, $df=274$, $p < 0.001$). The Hypothesis 4 failed to reject that the overall importance and performance gap score of hotel ISSI attributes in US does differ significantly as perceived by customers.

Table 9 The Gaps between Importance and Performance of Hotel ISSI Attributes

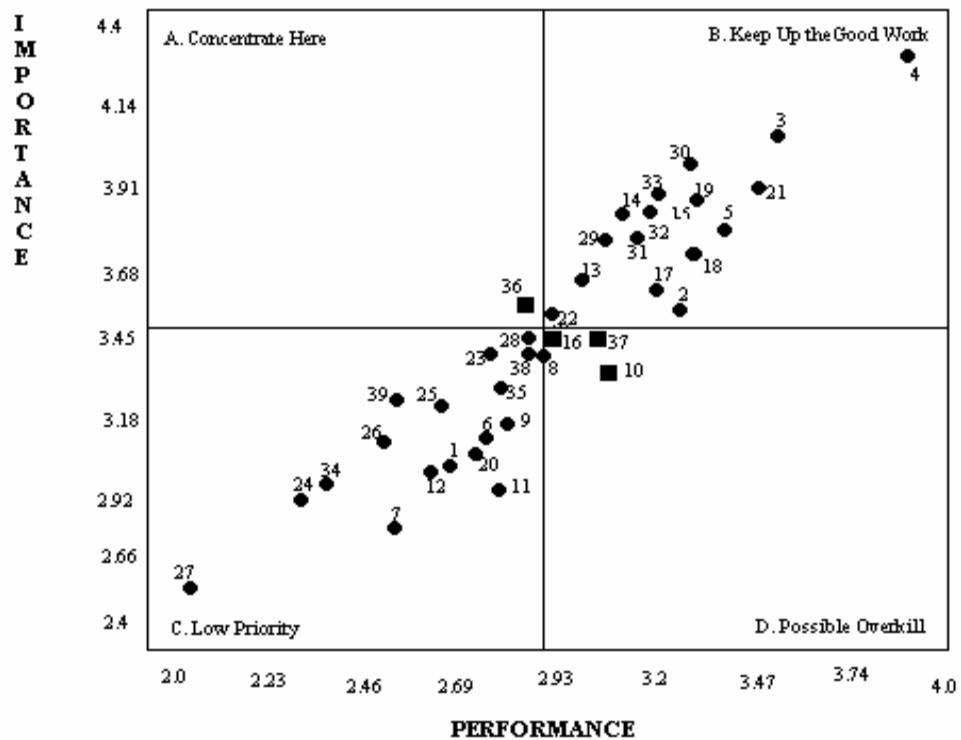
Service Attribute	Important		Performance		Important- Performance Gap	T-Value
	Mean	Std. Deviation	Mean	Std. Deviation		
39. Health service info	3.24	1.59	2.47	1.60	0.77	9.047 **
14. Direction for Internet connection outlet	3.81	1.42	3.05	1.52	0.76	9.358 **
33. Restaurant guide	3.64	1.58	2.90	1.69	0.74	8.490 **
13. Info on electronic adapters	3.66	1.57	2.98	1.66	0.68	7.963 **
29. Direction of in-house dining facilities	3.76	1.52	3.08	1.71	0.68	8.493 **
34. Transportation info	2.96	1.78	2.30	1.73	0.66	8.667 **
30. Info on hotel shuttle services	3.97	1.46	3.34	1.57	0.63	8.032 **
36. Brochures for local attraction & events	3.53	1.44	2.90	1.58	0.63	7.446 **
26. Monetary info on business services	3.12	1.65	2.50	1.68	0.62	7.246 **
25. Info on foreign currency exchange	3.24	1.58	2.64	1.66	0.60	6.914 **
24. Safety deposit box	2.92	1.71	2.33	1.71	0.59	7.219 **
32. City tour guide brochure	3.88	1.28	3.29	1.49	0.59	7.520 **
31. City/ regional map	3.76	1.46	3.18	1.58	0.58	7.293 **
22.Directions for emergency exits	3.49	1.48	2.94	1.60	0.55	7.080 **
23. Info on complementary seasonal amenities	3.36	1.45	2.81	1.61	0.55	6.625 **
15. Directions for alarm clock, AC, & CD player	3.78	1.30	3.24	1.44	0.54	6.973 **
27. Monetary info on business rental services	2.56	1.72	2.03	1.70	0.53	6.812 **
28. Info on library/ reading room	3.44	1.50	2.91	1.66	0.53	6.958 **
38. Museum & art gallery guide	3.42	1.45	2.91	1.59	0.51	6.617 **
35. Direction to local banks	3.27	1.57	2.77	1.61	0.50	6.459 **
16. Directions for operating TV & WebTV	3.43	1.45	2.94	1.56	0.49	5.964 **
19. Monetary info on Internet, TV, & game programs	3.81	1.25	3.32	1.54	0.49	6.055 **
3. Location of maps and floor plans	4.09	1.14	3.61	1.36	0.48	6.208 **
5. Info on recreational facilities	3.83	1.21	3.36	1.36	0.47	5.826 **
12. Brochure of introducing hotel history & development	3.07	1.66	2.61	1.63	0.46	5.795 **
8. Info on Special aromatherapy articles	3.37	1.50	2.93	1.60	0.44	5.805 **
17. Info on check-out process via WebTV system	3.65	1.33	3.21	1.50	0.44	5.947 **
18. Direction for operating phone services	3.76	1.34	3.32	1.47	0.44	5.753 **
21. Info on special dietary menu	3.90	1.46	3.47	1.54	0.43	5.287 **
37. Brochures for shopping guide	3.43	1.40	3.01	1.55	0.42	5.297 **
4. Direction maps	4.30	1.04	3.88	1.18	0.42	7.255 **
7. Info on bathtub	2.89	1.55	2.50	1.55	0.39	4.246 **
20. Info on room services & menu items	3.13	1.52	2.74	1.63	0.39	4.910 **
6. Info on small electronic appliances	3.14	1.49	2.81	1.51	0.33	4.656 **
1. Hotel Business card with general information	2.98	1.36	2.69	1.52	0.29	4.096 **
9. Monetary info on mini-bar and additional beverages	3.18	1.61	2.89	1.63	0.29	3.657 **
2. Info for hospitality alliance	3.52	1.34	3.25	1.47	0.27	3.731 **
10. Info on laundry services	3.31	1.39	3.14	1.46	0.17	2.127 *
11. Welcome card	2.93	1.48	2.83	1.44	0.10	1.621

Note: t -test two tail probability < 0.01 (**), t -test two tail probability < 0.05 (*)

Importance and Performance Analysis (IPA)

In this study, importance-performance Analysis (IPA) was employed to understand the perceived ISSI attributes including both importance and performance level. The mean scores of each 39 ISSI attributes on its importance and performance are presented in Table 9. The data were plotted into graphical grid. Using the overall mean values of the importance (3.45) and performance, (2.93), vertical and horizontal lines were used to separate the derived factors into four identifiable quadrants. Figure 5 illustrates the resulting graphical representation of the perceived importance and perceived performance ratings for the 39 ISSI attributes when plotted into four quadrants of the IPA grid.

In an IPA grid, a set of attributes pertaining to a particular service is evaluated on the basis of how important each is to the customers and how the service is perceived to be performing relative to each attribute. The four quadrants derived the grid are known as (A) *Concentrate Here* – customers consider these dimensions to be important but they think the services are not performed well, (B) *Keep Up the Good Work* – customers consider these dimensions to be important and are satisfied with the way services are being performed, (C) *Low Priority* – customers consider these dimensions to be neither important nor performed well, and (D) *Possible Overkill* – customers consider these services to be performed well, but they are not important.



Note: ● represented the hotel ISSI fell into Quadrant B and Quadrant C
 ■ represented the hotel ISSI fell into Quadrant A and Quadrant D

Figure 5. Importance-Performance Analysis of ISSI

ISSI (Informative Service Setting Items)

- | | | |
|---|--|---|
| 1. Hotel Business card with general information | 2. Info for hospitality alliance | 3. Location of maps and floor plans |
| 4. Direction maps | 5. Info on recreational facilities | 6. Info on small electronic appliances |
| 7. Info on bathtub | 8. Info on Special aromatherapy articles | 9. Monetary info on mini-bar |
| 10. Info on laundry services | 11. Welcome card | 12. Brochure of introducing hotel history |
| 13. Info on electronic adapters | 14. Direction for Internet connection outlet | 15. Directions for alarm, AC, & CD player |
| 16. Directions for operating TV & WebTV | 17. Info on check-out via WebTV system | 18. Direction for operating phone services |
| 19. Monetary info on Internet, game programs | 20. Info on room services & menu items | 21. Info on special dietary menu |
| 22. Directions for emergency exits | 23. Info on complementary seasonal amenities | 24. Safety deposit box |
| 25. Info on foreign currency exchange | 26. Monetary info on business services | 27. Monetary info on business rental services |
| 28. Info on library/ reading room | 29. Direction of in-house dining facilities | 30. Info on hotel shuttle services |
| 31. City/ regional map | 32. City tour guide brochure | 33. Restaurant guide |
| 34. Transportation info | 35. Direction to local banks | 36. Brochures for local attraction & events |
| 37. Brochures for shopping guide | 38. Museum & art gallery guide | 39. Health service info |

Quadrant A: Concentrate Here

As shown in Figure 5, “brochure for local attractions and events” (36) was the only one ISSI attribute captured in Quadrant A. The data captured in this quadrant suggest that U.S. hotels were perceived as providing less than optimal services in terms of providing relevant services when customers requested information about local entertainment events and attractions. One reason for the finding might be that many of the hotel customers reported that they traveled for leisure purpose; therefore they perceived that this ISSI was important and they expected hotel to provide better service performance for this ISSI item.

Quadrant B: Keep Up the Good Work

Hotel ISSI attributes that fell into Quadrant B included “info for hospitality alliance”(2), “location of maps and floor plans”(3), “direction maps”(4), “info on recreational facilities”(5), “info on electronic adapters”(13), “direction for Internet connection outlet”(14), “directions for alarm clock, AC, & CD player”(15), “info on check-out process via WebTV system”(17), “direction for operating phone services”(18), “monetary info on Internet, TV, & game programs”(19), “info on special dietary menu”(21), “directions for emergency exits”(22), “direction of in-house dining facilities”(29), “info on hotel shuttle services”(30), “city/ regional map”(31), “city tour guide brochure”(32), and “restaurant guide”(33).

Furthermore, the “location of maps and floor plans” (3) with a mean importance rating of 4.3 appeared to be the top ISSI attribute for customers perceived service experience. On the other hand, “directions for emergency exits” (22) with a mean

importance performance rating of 2.94 appeared to be the lowest attribute for customers' perceptions. The seventeen ISSI attributes identified in this quadrant were considered satisfactory in meeting the needs of hotel customers. In other words, the interpretation of attributes in this quadrant is that US hotels were maintaining reliable services of these ISSI.

Quadrant C: *Low Priority*

Seventeen ISSI attributes are collected in Quadrant C. The ISSI in this quadrant indicated relatively low importance and low level of performance. In other words, this quadrant identifies the ISSI attributes that customers perceived as less important, but U.S. hotels were performing adequately. However, the attributes positioned very close to Quadrant A (Concentrate Here) warrant more attention from hotel industry than other attributes in this quadrant. These ISSI attributes were “info on complementary seasonal amenities” (23), “info on library/ reading room” (28), and “museum & art gallery guide” (38). U.S. hotel industry should also be aware of the potential importance and performance of the “info on special aromatherapy articles” (8) because it was positioned exactly at the vertical line of the IPA grid.

Quadrant D: *Possible Overkill*

This study identified few ISSI that customers rated as being low importance with relatively high satisfaction. The three ISSI attributes that are captured in Quadrant D were “info on laundry services” (10), “directions for operating TV and WebTV” (16), and “brochure for shopping guide” (37). The data captured in this quadrant

suggest that hotel customers considered these three ISSI as being low importance with relatively high level of performance.

Importance and Performance Analysis: Hospitality Educators vs. Hotel Customers

This section compares first the perceived importance of ISSI by hospitality educators and hotel customers. Then it compares the perceived performance ratings.

Importance Analysis: Hospitality Educators as Compared to Hotel Customers

The ranking of 39 ISSI attributes on importance as perceived by hospitality educators and hotel customers is presented in Table 10-1 and Table 10-2. Table 11 shows descriptive statistics and comparison results for hospitality educators and hotel customers regarding their perceived importance level of ISSI.

In the current study, there were 77 responses from hospitality educators and 178 responses from hotel customers. Overall, hospitality educators had a 3.21 score from important level of ISSI; and hotel customers had a 3.54 score. Among 39 ISSI attributes, four ISSI items had 4.0 or higher importance scores; and these four ISSI items are “direction maps” (4.39), “info on special dietary menu” (4.26), “info on library/reading room” (4.05), and “location of maps and floor plans” (4.03). Three ISSI items had 4.0 or higher importance scores by hotel customers; these three ISSI items were: “direction maps” (4.29), “location of maps and floor plans” (4.12), and “direction for Internet connection outlet” (4.0).

The two-tail independent t-tests were conducted to examine the perceived importance differences between hospitality educators and hotel customers. The largest

gap difference scores were “safety deposit box” (-1.16, $p < 0.001$), “transportation info” (-0.93, $p < 0.001$), “info on library/ reading room” (0.9, $p < 0.001$), “info on bathtub” (-0.86, $p < 0.001$), and “info for hospitality alliance” (-0.66, $p < 0.001$). Among these five ISSI attributes, “info on library/reading room” was the only ISSI attribute that hospitality educators rated significantly higher than hotel customers. The possible interpretation of this significant finding can be that hospitality educators have needs for this ISSI attribute. By contrast, the smallest gaps scores were “direction to local banks” (-0.01, $p = 0.968$), “info on hotel shuttle services” (-0.01, $p = 0.964$), “direction for operating phone services” (0.02, $p = 0.932$), and “monetary info on Internet services, TV, & game programs” (0.05, $p = 0.771$). This finding indicates that there was no statistically significant difference between hospitality educators and hotel customers regarding the importance level of ISSI attributes in U.S. hotels. This finding informed hypothesis 5-1 as follows:

Hypothesis 5-1

H_{0-51} : There are **no** significant perceived *Importance* differences between hotel customers and hospitality educators.

H_{A-51} : There are significant perceived *Importance* differences between hotel customers and hospitality educators.

As calculated, the grand mean of the importance level of ISSI was 3.21 for hospitality educators and 3.54 for hotel customers. This difference was statistically significant at 0.05 level ($t = -2.012$, $df = 254$, $p < 0.05$). Therefore, H_{0-51} was rejected, and the Hypothesis 5-1 failed to reject that there is a statistically different perceived importance level between hospitality educators and hotel customers regarding ISSI attributes in U.S. hotels.

Table 10-1 ISSI Importance Ranking by Hospitality Educators

Service Attribute	Hospitality Educator	
	Mean	Ranking
4. Direction maps	4.39	1
21. Info on special dietary menu	4.26	2
28. Info on library/ reading room	4.05	3
3. Location of maps and floor plans	4.03	4
30. Info on hotel shuttle services	3.97	5
32. City tour guide brochure	3.92	6
19. Monetary info on Internet services, TV, & game programs	3.84	7
17. Info on check-out process via WebTV system	3.82	8
18. Direction for operating phone services	3.76	9
5. Info on recreational facilities	3.66	10
13. Info on electronic adapters	3.61	11
8. Info on Special aromatherapy articles	3.53	12
15. Directions for alarm clock, AC, & CD player	3.51	13
14. Direction for Internet connection outlet	3.49	14
29. Direction of in-house dining facilities	3.49	15
31. City/ regional map	3.32	16
16. Directions for operating TV & WebTV	3.30	17
35. Direction to local banks	3.22	18
36. Brochures for local attraction & events	3.16	19
23. Info on complementary seasonal amenities	3.14	20
33. Restaurant guide	3.14	21
38. Museum & art gallery guide	3.09	22
25. Info on foreign currency exchange	3.08	23
10. Info on laundry services	3.06	24
2. Info for hospitality alliance	3.05	25
22.Directions for emergency exits	3.04	26
37. Brochures for shopping guide	3.04	27
39. Health service info	2.97	28
11. Welcome card	2.77	29
20. Info on room services & menu items	2.76	30
9. Monetary info on mini-bar and additional beverages	2.70	31
26. Monetary info on business services	2.67	32
6. Info on small electronic appliances	2.66	33
1. Hotel Business card with general information	2.64	34
12. Brochure of introducing hotel history & development	2.58	35
34. Transportation info	2.28	36
7. Info on bathtub	2.26	37
24. Safety deposit box	2.12	38
27. Monetary info on business rental services	2.07	39
Grand Mean	3.21	

Table 10- 2 ISSI Importance Ranking by Hotel Customers

Service Attribute	Hotel Customer	
	Mean	Ranking
4. Direction maps	4.29	1
3. Location of maps and floor plans	4.12	2
14. Direction for Internet connection outlet	4.00	3
30. Info on hotel shuttle services	3.98	4
31. City/ regional map	3.98	4
15. Directions for alarm clock, AC, & CD player	3.93	6
5. Info on recreational facilities	3.92	7
29. Direction of in-house dining facilities	3.89	8
32. City tour guide brochure	3.82	9
33. Restaurant guide	3.82	9
19. Monetary info on Internet services, TV, & game programs	3.79	11
21. Info on special dietary menu	3.77	12
13. Info on electronic adapters	3.74	13
18. Direction for operating phone services	3.74	13
2. Info for hospitality alliance	3.71	15
22.Directions for emergency exits	3.69	16
36. Brochures for local attraction & events	3.65	17
17. Info on check-out process via WebTV system	3.61	18
37. Brochures for shopping guide	3.56	19
38. Museum & art gallery guide	3.52	20
16. Directions for operating TV & WebTV	3.51	21
23. Info on complementary seasonal amenities	3.44	22
10. Info on laundry services	3.41	23
39. Health service info	3.37	24
9. Monetary info on mini-bar and additional beverages	3.34	25
6. Info on small electronic appliances	3.33	26
12. Brochure of introducing hotel history & development	3.32	27
8. Info on Special aromatherapy articles	3.30	28
20. Info on room services & menu items	3.28	29
24. Safety deposit box	3.28	29
25. Info on foreign currency exchange	3.27	31
26. Monetary info on business services	3.26	32
35. Direction to local banks	3.23	33
34. Transportation info	3.21	34
28. Info on library/ reading room	3.15	35
1. Hotel Business card with general information	3.12	36
7. Info on bathtub	3.12	37
11. Welcome card	2.93	38
27. Monetary info on business rental services	2.72	39
Grand Mean	3.54	

Table 11 Importance Difference between Hospitality Educators & Hotel Customers

Service Attribute	Hospitality Educator		Hotel Customer		Educator vs. Customer Difference	Sig.
	Mean	Std. Deviation	Mean	Std. Deviation		
24. Safety deposit box	2.12	1.76	3.28	1.61	-1.16	0.000 **
34. Transportation info	2.28	1.81	3.21	1.70	-0.93	0.000 **
28. Info on library/ reading room	4.05	1.14	3.15	1.56	0.90	0.000 **
7. Info on bathtub	2.26	1.55	3.12	1.51	-0.86	0.000 **
12. Brochure of introducing hotel history & development	2.58	1.78	3.32	1.58	-0.74	0.001 **
33. Restaurant guide	3.14	1.74	3.82	1.50	-0.68	0.002 **
6. Info on small electronic appliances	2.66	1.54	3.33	1.44	-0.67	0.001 **
2. Info for hospitality alliance	3.05	1.34	3.71	1.29	-0.66	0.000 **
31. City/ regional map	3.32	1.63	3.98	1.32	-0.66	0.001 **
22.Directions for emergency exits	3.04	1.56	3.69	1.42	-0.65	0.001 **
27. Monetary info on business rental services	2.07	1.78	2.72	1.66	-0.65	0.005 **
9. Monetary info on mini-bar and additional beverages	2.70	1.70	3.34	1.54	-0.64	0.004 **
26. Monetary info on business services	2.67	1.75	3.26	1.60	-0.59	0.010 *
20. Info on room services & menu items	2.76	1.60	3.28	1.47	-0.52	0.013 *
37. Brochures for shopping guide	3.04	1.51	3.56	1.35	-0.52	0.007 **
14. Direction for Internet connection outlet	3.49	1.46	4.00	1.38	-0.51	0.008 **
21. Info on special dietary menu	4.26	1.27	3.77	1.53	0.49	0.014 *
36. Brochures for local attraction & events	3.16	1.56	3.65	1.40	-0.49	0.014 *
1. Hotel Business card with general information	2.64	1.33	3.12	1.34	-0.48	0.010 **
38. Museum & art gallery guide	3.09	1.63	3.52	1.38	-0.43	0.033 *
15. Directions for alarm clock, AC, & CD player	3.51	1.56	3.93	1.15	-0.42	0.017 *
29. Direction of in-house dining facilities	3.49	1.79	3.89	1.38	-0.40	0.056
39. Health service info	2.97	1.70	3.37	1.57	-0.40	0.076
10. Info on laundry services	3.06	1.44	3.41	1.37	-0.35	0.070
23. Info on complementary seasonal amenities	3.14	1.46	3.44	1.46	-0.30	0.138
5. Info on recreational facilities	3.66	1.37	3.92	1.10	-0.26	0.106
8. Info on Special aromatherapy articles	3.53	1.60	3.30	1.47	0.23	0.267
16. Directions for operating TV & WebTV	3.30	1.73	3.51	1.36	-0.21	0.312
17. Info on check-out process via WebTV system	3.82	1.25	3.61	1.35	0.21	0.268
25. Info on foreign currency exchange	3.08	1.60	3.27	1.60	-0.19	0.374
11. Welcome card	2.77	1.39	2.93	1.39	-0.16	0.400
13. Info on electronic adapters	3.61	1.67	3.74	1.53	-0.13	0.526
4. Direction maps	4.39	0.98	4.29	1.05	0.10	0.462
32. City tour guide brochure	3.92	1.25	3.82	1.33	0.10	0.572
3. Location of maps and floor plans	4.03	1.19	4.12	1.12	-0.09	0.529
19. Monetary info on Internet services, TV, & game programs	3.84	1.27	3.79	1.24	0.05	0.771
18. Direction for operating phone services	3.76	1.47	3.74	1.31	0.02	0.932
30. Info on hotel shuttle services	3.97	1.40	3.98	1.49	-0.01	0.964
35. Direction to local banks	3.22	1.51	3.23	1.64	-0.01	0.968

Note: *t*-test two tail probability < 0.05 (*); *t*-test two tail probability < 0.01 (**)

Performance Analysis: Hospitality Educators as Compared to Hotel Customers

The ranking of 39 ISSI attributes on performance perceived by hospitality educators and hotel customers is presented in Table 12-1 and Table 12-2. Table 13 shows the descriptive statistics and comparison results between hospitality educators and hotel customers on perceived performance level of ISSI attributes.

When differentiating the perceived performance level, hospitality educators had a 2.75 mean score and hotel customers had a 3.03 mean score. Hospitality educators rated “info on special dietary menu” (3.97), “direction maps” (3.84), and “location of maps and floor plan” (3.57) as the top three ISSI in terms of perceived performance level. On the other hand, hotel customers rated “direction maps” (3.91), “location of maps and floor plans” (3.66), and “directions for alarm clock, AC, & CD player” (3.47) as the top three ISSI in terms of perceived performance level. Overall speaking, hospitality educators gave lower performance ratings to ISSI than hotel customers. Furthermore, hospitality educators rated the performance scores of three ISSI items below 2.0; and these three attributes are “transportation info” (1.75), “safety deposit box” (1.62), and “monetary info on business rental services” (1.54). One reason for these low rating could be that many hospitality educators expected hotels to provide better service performance on these three ISSI to fit their needs when staying in U.S. hotels.

Among 39 ISSI attributes, hospitality educators and hotel customer perceived five attributes significantly different in terms of ISSI performance level. These

attributes are “safety deposit box” (-1.03, $p < 0.001$), “transportation info” (-0.71, $p < 0.001$), “info on library/ reading room” (0.6, $p < 0.001$), “info on bathtub” (-0.62, $p < 0.001$), and “info for hospitality alliance” (-0.39, $p < 0.001$). Interestingly, these five attributes were also reported as largest gap scores in terms of perceived level of importance. In addition, “info on library/reading room” was the only ISSI attribute among the five largest-gap-score attributes that hospitality educators rated significantly higher than hotel customers. Furthermore, a consistent finding for the four smallest performance-gap-score attributes (“direction to local banks”, “info on hotel shuttle services”, “direction for operating phone services”, and “monetary info on Internet services, TV, & game programs”) was that they had the smallest importance-gap-score ISSI attributes. The finding informed hypothesis 5-2 as follow:

Hypothesis 5-2

H₀₋₅₂: There are **no** significant perceived *Performance* differences between hotel customers and hospitality educators.

H_{A-52}: There are significant perceived *Performance* differences between hotel customers and hospitality educators.

A two-tail independent t-test was conducted on the grand means of performance to test this hypothesis. As calculated, the performance level of ISSI was 2.75 for hospitality educators and 3.03 for hotel customers. This difference was statistically significant at 0.05 level ($t = -1.65$, $df = 254$, $p < 0.05$); and H₀₋₅₂ was rejected. The hypothesis 5-2 failed to reject that there is a statistically different perceived

performance level between hospitality educators and hotel customers regarding hotel
ISSI attributes in U.S. hotels.

Table 12-1 ISSI Performance Ranking by Hospitality Educators

Service Attribute	Hospitality Educators	
	Mean	Ranking
21. Info on special dietary menu	3.97	1
4. Direction maps	3.84	2
3. Location of maps and floor plans	3.57	3
30. Info on hotel shuttle services	3.43	4
32. City tour guide brochure	3.39	5
17. Info on check-out process via WebTV system	3.37	6
18. Direction for operating phone services	3.36	7
28. Info on library/ reading room	3.32	8
19. Monetary info on Internet services, TV, & game programs	3.20	9
5. Info on recreational facilities	3.17	10
10. Info on laundry services	3.08	11
2. Info for hospitality alliance	2.96	12
13. Info on electronic adapters	2.96	12
37. Brochures for shopping guide	2.96	12
8. Info on Special aromatherapy articles	2.93	15
15. Directions for alarm clock, AC, & CD player	2.83	16
35. Direction to local banks	2.82	17
29. Direction of in-house dining facilities	2.76	18
14. Direction for Internet connection outlet	2.74	19
23. Info on complementary seasonal amenities	2.74	20
16. Directions for operating TV & WebTV	2.73	21
22. Directions for emergency exits	2.71	22
36. Brochures for local attraction & events	2.70	23
9. Monetary info on mini-bar and additional beverages	2.63	24
38. Museum & art gallery guide	2.61	25
31. City/ regional map	2.59	26
11. Welcome card	2.55	27
33. Restaurant guide	2.47	28
25. Info on foreign currency exchange	2.39	29
1. Hotel Business card with general information	2.36	30
6. Info on small electronic appliances	2.29	31
20. Info on room services & menu items	2.29	31
39. Health service info	2.26	33
12. Brochure of introducing hotel history & development	2.16	34
7. Info on bathtub	2.05	35
26. Monetary info on business services	2.05	35
34. Transportation info	1.75	37
24. Safety deposit box	1.62	38
27. Monetary info on business rental services	1.54	39
Grand Mean	2.75	

Table 12-2 ISSI Performance Ranking by Hotel Customers

Service Attribute	Hotel Customers	
	Mean	Ranking
4. Direction maps	3.91	1
3. Location of maps and floor plans	3.66	2
5. Info on recreational facilities	3.47	3
15. Directions for alarm clock, AC, & CD player	3.47	3
31. City/ regional map	3.39	5
19. Monetary info on Internet services, TV, & game programs	3.38	6
2. Info for hospitality alliance	3.35	7
30. Info on hotel shuttle services	3.31	8
21. Info on special dietary menu	3.30	9
18. Direction for operating phone services	3.29	10
32. City tour guide brochure	3.22	11
14. Direction for Internet connection outlet	3.21	12
17. Info on check-out process via WebTV system	3.18	13
10. Info on laundry services	3.17	14
29. Direction of in-house dining facilities	3.17	15
16. Directions for operating TV & WebTV	3.05	16
13. Info on electronic adapters	3.04	17
33. Restaurant guide	3.02	18
38. Museum & art gallery guide	3.02	18
6. Info on small electronic appliances	3.01	20
37. Brochures for shopping guide	3.01	20
9. Monetary info on mini-bar and additional beverages	2.99	22
22.Directions for emergency exits	2.99	22
8. Info on Special aromatherapy articles	2.94	24
36. Brochures for local attraction & events	2.93	25
20. Info on room services & menu items	2.91	26
11. Welcome card	2.88	27
12. Brochure of introducing hotel history & development	2.85	28
1. Hotel Business card with general information	2.83	29
23. Info on complementary seasonal amenities	2.81	30
28. Info on library/ reading room	2.72	31
35. Direction to local banks	2.71	32
25. Info on foreign currency exchange	2.70	33
7. Info on bathtub	2.67	34
24. Safety deposit box	2.65	35
26. Monetary info on business services	2.62	36
39. Health service info	2.52	37
34. Transportation info	2.46	38
27. Monetary info on business rental services	2.23	39
Grand Mean	3.03	

Table 13 Performance Difference between Hospitality Educators & Hotel Customers

Service Attribute	Hospitality Educators		Hotel Customers		Educator vs. Customer Difference	Sig.
	Mean	Std. Deviation	Mean	Std. Deviation		
24. Safety deposit box	1.62	1.61	2.65	1.68	-1.03	0.000 **
31. City/ regional map	2.59	1.85	3.39	1.41	-0.80	0.001 *
6. Info on small electronic appliances	2.29	1.48	3.01	1.49	-0.72	0.001 *
34. Transportation info	1.75	1.74	2.46	1.66	-0.71	0.000 **
12. Brochure of introducing hotel history & development	2.16	1.76	2.85	1.54	-0.69	0.001 **
27. Monetary info on business rental services	1.54	1.64	2.23	1.68	-0.69	0.005 **
21. Info on special dietary menu	3.97	1.39	3.30	1.57	0.67	0.014 *
15. Directions for alarm clock, AC, & CD player	2.83	1.51	3.47	1.35	-0.64	0.017 *
7. Info on bathtub	2.05	1.66	2.67	1.49	-0.62	0.000 **
20. Info on room services & menu items	2.29	1.68	2.91	1.57	-0.62	0.013 *
28. Info on library/ reading room	3.32	1.60	2.72	1.65	0.60	0.000 **
26. Monetary info on business services	2.05	1.72	2.62	1.65	-0.57	0.010 *
33. Restaurant guide	2.47	1.81	3.02	1.65	-0.55	0.002 **
1. Hotel Business card with general information	2.36	1.56	2.83	1.47	-0.47	0.010 *
14. Direction for Internet connection outlet	2.74	1.41	3.21	1.54	-0.47	0.008 **
29. Direction of in-house dining facilities	2.76	1.93	3.17	1.62	-0.41	0.056
38. Museum & art gallery guide	2.61	1.77	3.02	1.51	-0.41	0.033 *
2. Info for hospitality alliance	2.96	1.49	3.35	1.45	-0.39	0.000 **
9. Monetary info on mini-bar and additional beverages	2.63	1.78	2.99	1.55	-0.36	0.004 *
11. Welcome card	2.55	1.55	2.88	1.39	-0.33	0.400
16. Directions for operating TV & WebTV	2.73	1.76	3.05	1.48	-0.32	0.312
25. Info on foreign currency exchange	2.39	1.65	2.70	1.68	-0.31	0.374
5. Info on recreational facilities	3.17	1.44	3.47	1.30	-0.30	0.106
22.Directions for emergency exits	2.71	1.66	2.99	1.58	-0.28	0.001 **
39. Health service info	2.26	1.79	2.52	1.54	-0.26	0.076
36. Brochures for local attraction & events	2.70	1.65	2.93	1.59	-0.23	0.014 *
17. Info on check-out process via WebTV system	3.37	1.46	3.18	1.52	0.19	0.268
19. Monetary info on Internet services, TV, & game programs	3.20	1.78	3.38	1.40	-0.18	0.771
32. City tour guide brochure	3.39	1.46	3.22	1.50	0.17	0.572
30. Info on hotel shuttle services	3.43	1.48	3.31	1.61	0.12	0.964
35. Direction to local banks	2.82	1.57	2.71	1.67	0.11	0.968
3. Location of maps and floor plans	3.57	1.37	3.66	1.34	-0.09	0.529
10. Info on laundry services	3.08	1.55	3.17	1.43	-0.09	0.070
13. Info on electronic adapters	2.96	1.75	3.04	1.64	-0.08	0.526
4. Direction maps	3.84	1.26	3.91	1.12	-0.07	0.462
18. Direction for operating phone services	3.36	1.59	3.29	1.43	0.07	0.932
23. Info on complementary seasonal amenities	2.74	1.66	2.81	1.59	-0.07	0.138
37. Brochures for shopping guide	2.96	1.63	3.01	1.54	-0.05	0.007 **
8. Info on Special aromatherapy articles	2.93	1.77	2.94	1.52	-0.01	0.267

Note: *t*-test two tail probability < 0.05 (*); *t*-test two tail probability < 0.01 (**)

Importance-Performance Grid: Hospitality Educators as Compared to Hotel Customers

Using the overall mean values of the importance (3.45) and performance, (2.93), vertical and horizontal lines were determined to separate the derived factors into four identifiable quadrants. As shown in Figure 6 and Figure 7, each of 39 ISSI attributes perceived importance and performance by hospitality educators and hotel customers was illustrated into IPA grid.

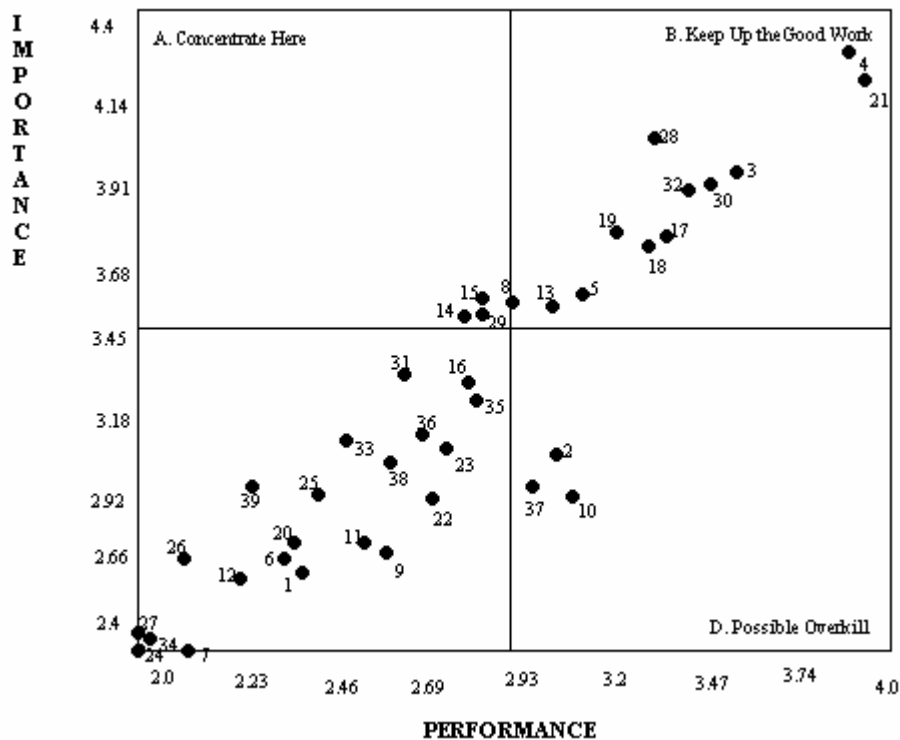


Figure 6. Importance-Performance Analysis Matrix of Hospitality Educators

As shown in Figure 6 and Figure 7, the importance-and-performance of hotel ISSI attributes perceived by hospitality educators was much different from perceived by hotel customers. The attributes fell into Quadrant A (Concentrate Here) were “direction for Internet connection outlet” (14), “direction for alarm, AC & CD player” (15), and “direction of in-house dining facilities” (29). On the other hand, the attributes fell into Quadrant D (Possible Overkill) were “info for hospitality alliance” (2), “info on laundry services” (10), and “brochures for shopping guide” (37). Surprisingly, twenty-one ISSI attributes fell into Quadrant C (Low Priority). And among these 21 ISSI attributes, “info on bathtub” (7), “safety deposit box” (24), “monetary info business rental services” (27), and “transportation info” (34) were considered the least importance and poorest performance in terms of providing hotel services.

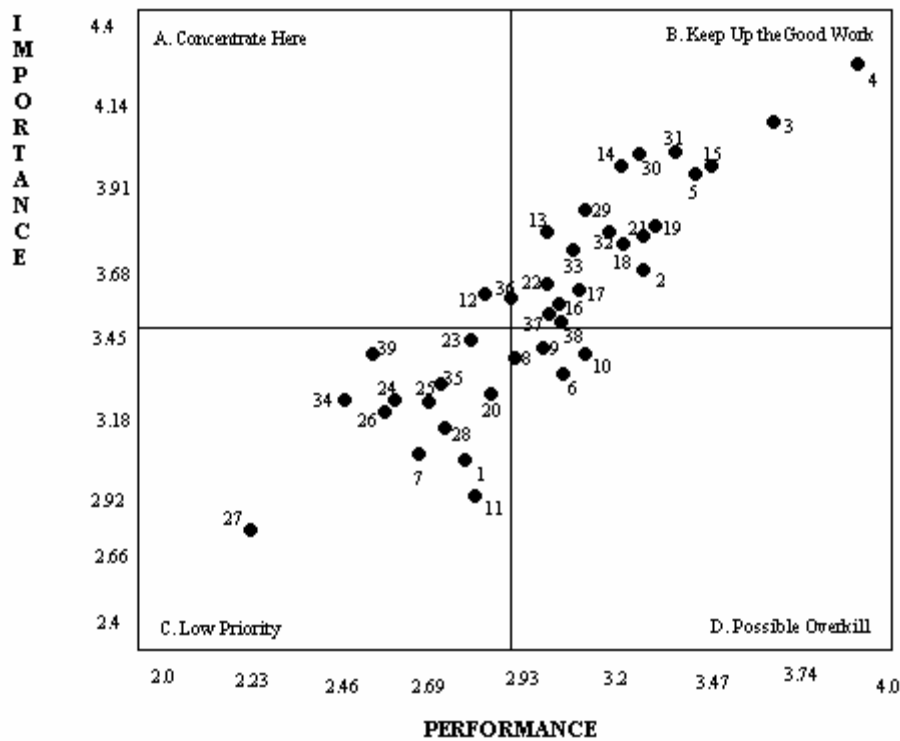


Figure 7. Importance-Performance Analysis Matrix of Hotel Customers

Nineteen ISSI attributes rated by hotel customers fell into Quadrant B (Keep Up the Good Work); in other words, these ISSI were considered satisfactory in meeting the needs of hotel customers. The ISSI “brochure of introducing hotel history” (12) was the only attribute fallen into Quadrant A (Concentrate Here). And among the 13 ISSI attributes fallen into Quadrant C (Low Priority), “monetary info on business rental services” (27) was perceived the least importance and poorest performance. As for the ISSI attributes that fell into Quadrant D (Possible Overkill), genuine hotel customers considered “info on small electronic appliances” (6), “monetary info on mini-bar” (9), “info on laundry services” (10), and “museum & art gallery guide” (38) to be low importance but with relatively high satisfaction.

**Importance and Performance Analysis:
Western Customers as Compared to Asian Customers**

This section compares first the perceived importance of ISSI by Western Customers and Asian customers. Then it compares the perceived performance ratings.

Importance Analysis: Western Customers as Compared to Asian Customers

In the current study, 90 responses were from Asian customers and 165 responses were from Western customers. To analyze two means from Asian customer group and Western customer group, two-tail independent t-tests were conducted. Table 14-1 and Table 14-2 show the ranking of 39 ISSI attributes based on importance as perceived by Western customers and Asian customers. Table 15 shows descriptive

statistics and comparison results for Western customers and Asian customers on the perceived importance level of ISSI.

Overall, Western customers had a 3.26 mean scores for perceived importance level of ISSI; and Asian customers had a 3.80 mean scores. Only two ISSI attributes had above 4.0 importance scores for Western customers; however, more than 10 ISSI attributes had above 4.0 importance scores for Asian customers. The ISSI items for Asian customers with 4.0 or above importance scores were “direction maps” (4.3), “info on hotel shuttle services” (4.28), “direction of in-house dining facilities” (4.26), “city/regional map” (4.21), “info on special dietary menu” (4.18), “location of maps and floor plans” (4.11), “restaurant guide” (4.09), “city tour guide brochure” (4.08), “direction for alarm clock, AC, & CD player” (4.08), “direction for Internet connection outlet” (4.08), and “brochure of introducing hotel history” (4.07). Overall, this ranking information may suggest that Asian customers generally rated ISSI items as having relatively higher importance levels in terms of providing hotel services.

Ten out of the thirty-nine ISSI attributes had statistically significant gap differences between Western customers and Asian customers. And these ISSI attributes are “Hotel Business card with general information” (-0.95, $p < 0.000$), “Info on small electronic appliances” (-0.93, $p < 0.000$), “Info on bathtub” (-1.04, $p < 0.000$), “Brochure of introducing hotel history & development” (-1.48, $p < 0.000$), “Info on complementary seasonal amenities” (-0.82, $p < 0.000$), “Safety deposit box” (-1.08, $p < 0.000$), “Info on foreign currency exchange” (-0.83, $p < 0.000$), “Monetary info on business rental services” (-0.9, $p < 0.000$), “Direction of in-house dining facilities” (-0.74, $p < 0.000$), and “Transportation info” (-1.12, $p < 0.000$). These ten ISSI attributes received negative

scores for gap differences indicating that Asian customers perceived higher important regarding ISSI in US hotels. Hypothesis 4 is formed as follows:

Hypothesis 6-1

H_{0-61} : There are **no** significant perceived *Importance* differences between Western customers and Asian customers.

H_{A-61} : There are significant perceived *Importance* differences between Western customers and Asian customers.

As calculated, the grand mean for the importance level of ISSI was 3.26 for Western customers and 3.80 for Asian customers. This difference was statistically significant at 0.01 level ($t = -3.462$, $df = 254$, $p < 0.01$). Therefore, H_{0-61} was rejected, and the Hypothesis 6-1 failed to reject that there is statistically different perceived importance level between Western customers and Asian customers regarding hotel ISSI attributes in U.S. hotels.

Table 14-1 ISSI Importance Ranking by Western Customers

Service Attribute	Western Customers	
	Mean	Ranking
4. Direction maps	4.33	1
3. Location of maps and floor plans	4.09	2
30. Info on hotel shuttle services	3.84	3
19. Monetary info on Internet services, TV, & game programs	3.82	4
5. Info on recreational facilities	3.79	5
21. Info on special dietary menu	3.77	6
18. Direction for operating phone services	3.76	7
14. Direction for Internet connection outlet	3.74	8
32. City tour guide brochure	3.72	9
15. Directions for alarm clock, AC, & CD player	3.66	10
17. Info on check-out process via WebTV system	3.61	11
13. Info on electronic adapters	3.59	12
31. City/ regional map	3.56	13
29. Direction of in-house dining facilities	3.52	14
33. Restaurant guide	3.38	15
16. Directions for operating TV & WebTV	3.36	16
36. Brochures for local attraction & events	3.34	17
22. Directions for emergency exits	3.33	18
2. Info for hospitality alliance	3.32	19
28. Info on library/ reading room	3.31	20
10. Info on laundry services	3.29	21
37. Brochures for shopping guide	3.24	22
38. Museum & art gallery guide	3.19	23
8. Info on Special aromatherapy articles	3.15	24
35. Direction to local banks	3.09	25
23. Info on complementary seasonal amenities	3.08	26
39. Health service info	3.07	27
9. Monetary info on mini-bar and additional beverages	3.00	28
20. Info on room services & menu items	2.95	29
25. Info on foreign currency exchange	2.93	30
27. Monetary info on business rental services	2.22	30
26. Monetary info on business services	2.87	31
6. Info on small electronic appliances	2.80	32
11. Welcome card	2.78	33
1. Hotel Business card with general information	2.63	34
12. Brochure of introducing hotel history & development	2.59	35
24. Safety deposit box	2.56	36
34. Transportation info	2.55	37
7. Info on bathtub	2.50	38
Grand Mean	3.26	

Table 14-1 ISSI Importance Ranking by Asian Customers

Service Attribute	Asian Customers	
	Mean	Ranking
4. Direction maps	4.30	1
30. Info on hotel shuttle services	4.28	2
29. Direction of in-house dining facilities	4.26	3
31. City/ regional map	4.21	4
21. Info on special dietary menu	4.18	5
3. Location of maps and floor plans	4.11	6
33. Restaurant guide	4.09	7
14. Direction for Internet connection outlet	4.08	8
15. Directions for alarm clock, AC, & CD player	4.08	8
32. City tour guide brochure	4.08	8
12. Brochure of introducing hotel history & development	4.07	11
5. Info on recreational facilities	3.99	12
13. Info on electronic adapters	3.97	13
23. Info on complementary seasonal amenities	3.90	14
2. Info for hospitality alliance	3.88	15
36. Brochures for local attraction & events	3.84	16
17. Info on check-out process via WebTV system	3.83	17
22.Directions for emergency exits	3.83	17
19. Monetary info on Internet services, TV, & game programs	3.80	19
38. Museum & art gallery guide	3.80	19
8. Info on Special aromatherapy articles	3.79	21
18. Direction for operating phone services	3.78	22
25. Info on foreign currency exchange	3.76	23
37. Brochures for shopping guide	3.75	24
6. Info on small electronic appliances	3.73	25
34. Transportation info	3.67	26
24. Safety deposit box	3.64	27
16. Directions for operating TV & WebTV	3.63	28
28. Info on library/ reading room	3.63	28
39. Health service info	3.61	30
1. Hotel Business card with general information	3.58	31
7. Info on bathtub	3.54	32
35. Direction to local banks	3.52	33
26. Monetary info on business services	3.51	34
20. Info on room services & menu items	3.47	35
9. Monetary info on mini-bar and additional beverages	3.44	36
10. Info on laundry services	3.37	37
27. Monetary info on business rental services	3.12	38
11. Welcome card	3.09	39
Grand Mean	3.80	

Table 15 Importance Difference between Western Customers & Asian Customers

	Western Customers		Asian Customers		Western vs. Asian Difference	Sig.
	Mean	Std. Deviation	Mean	Std. Deviation		
Service Attribute						
12. Brochure of introducing hotel history & development	2.59	1.70	4.07	1.07	-1.48	0.000 **
34. Transportation info	2.55	1.91	3.67	1.22	-1.12	0.000 **
24. Safety deposit box	2.56	1.81	3.64	1.32	-1.08	0.000 **
7. Info on bathtub	2.50	1.63	3.54	1.21	-1.04	0.000 **
1. Hotel Business card with general information	2.63	1.39	3.58	1.02	-0.95	0.000 *
6. Info on small electronic appliances	2.80	1.49	3.73	1.32	-0.93	0.000 **
27. Monetary info on business rental services	2.22	1.81	3.12	1.38	-0.90	0.000 **
25. Info on foreign currency exchange	2.93	1.74	3.76	1.12	-0.83	0.000 **
23. Info on complementary seasonal amenities	3.08	1.55	3.90	1.08	-0.82	0.000 **
29. Direction of in-house dining facilities	3.52	1.70	4.26	0.89	-0.74	0.000 **
33. Restaurant guide	3.38	1.66	4.09	1.36	-0.71	0.001 **
31. City/ regional map	3.56	1.56	4.21	1.06	-0.65	0.001 **
8. Info on Special aromatherapy articles	3.15	1.66	3.79	1.04	-0.64	0.001 **
26. Monetary info on business services	2.87	1.76	3.51	1.37	-0.64	0.004 **
38. Museum & art gallery guide	3.19	1.53	3.80	1.24	-0.61	0.001 **
2. Info for hospitality alliance	3.32	1.37	3.88	1.20	-0.56	0.001 **
39. Health service info	3.07	1.74	3.61	1.27	-0.54	0.012 *
20. Info on room services & menu items	2.95	1.69	3.47	1.09	-0.52	0.009 **
37. Brochures for shopping guide	3.24	1.52	3.75	1.08	-0.51	0.005 **
22.Directions for emergency exits	3.33	1.63	3.83	1.09	-0.50	0.010 *
36. Brochures for local attraction & events	3.34	1.58	3.84	1.13	-0.50	0.008 **
9. Monetary info on mini-bar and additional beverages	3.00	1.74	3.44	1.27	-0.44	0.038 *
30. Info on hotel shuttle services	3.84	1.61	4.28	1.03	-0.44	0.020 *
35. Direction to local banks	3.09	1.72	3.52	1.28	-0.43	0.043 *
15. Directions for alarm clock, AC, & CD player	3.66	1.42	4.08	1.00	-0.42	0.014 *
21. Info on special dietary menu	3.77	1.58	4.18	1.24	-0.41	0.036 *
13. Info on electronic adapters	3.59	1.63	3.97	1.38	-0.38	0.065
32. City tour guide brochure	3.72	1.40	4.08	1.08	-0.36	0.038 *
14. Direction for Internet connection outlet	3.74	1.51	4.08	1.15	-0.34	0.068
28. Info on library/ reading room	3.31	1.69	3.63	1.09	-0.32	0.116
11. Welcome card	2.78	1.41	3.09	1.30	-0.31	0.087
16. Directions for operating TV & WebTV	3.36	1.63	3.63	1.14	-0.27	0.162
17. Info on check-out process via WebTV system	3.61	1.39	3.83	1.13	-0.22	0.212
5. Info on recreational facilities	3.79	1.24	3.99	1.02	-0.20	0.189
10. Info on laundry services	3.29	1.45	3.37	1.26	-0.08	0.660
4. Direction maps	4.33	1.05	4.30	0.99	0.03	0.829
3. Location of maps and floor plans	4.09	1.19	4.11	1.06	-0.02	0.858
18. Direction for operating phone services	3.76	1.44	3.78	1.15	-0.02	0.941
19. Monetary info on Internet services, TV, & game programs	3.82	1.28	3.80	1.18	0.02	0.877

Note: *t*-test two tail probability < 0.05 (*); *t*-test two tail probability < 0.01 (**)

Performance Analysis: Western Customers as Compared to Asian Customers

The means of each hotel ISSI attribute and its performance ranking information as perceived by Western customers and Asian customers is presented in Table 16-1 and Table 16-2. The comparison results between Western customers and Asian customers regarding the perceived performance level of ISSI are shown in Table 17.

Western customers had a 2.74 as mean performance score for ISSI attributes, and Asian customers had a 3.33 mean performance scores for ISSI attributes. In other words, Western customers were generally less satisfied with current US hotel ISSI items. For Western customers the top three ISSI attributes in terms of perceive performance level were “direction maps” (3.86), “location of map and floor plans” (3.58), and “info on special dietary menu” (3.39). By comparison, the top three ISSI performance as rated by Asian customers were “direction maps” (3.94), “info on hotel shuttle services” (3.88), and “city/regional map” (3.82). Surprisingly, among all 39 hotel ISSI attributes, “direction maps” had the highest performance for both Western customers and Asian customers. However, three ISSI items had below 2.0 for Western customers; “safety deposit box” (1.99), “transportation info” (1.93), and “monetary info on business rental services” (1.7). One possible explanation for this finding might be that many of the Western customers would expect hotels provide better service performance for these three ISSI to fit their needs.

Table 16-1 ISSI Performance Ranking by Western Customers

Service Attribute	Western Customers	
	Mean	Ranking
4. Direction maps	3.86	1
3. Location of maps and floor plans	3.58	2
21. Info on special dietary menu	3.39	3
18. Direction for operating phone services	3.29	4
5. Info on recreational facilities	3.24	5
19. Monetary info on Internet services, TV, & game programs	3.22	6
32. City tour guide brochure	3.17	7
17. Info on check-out process via WebTV system	3.16	8
30. Info on hotel shuttle services	3.09	9
15. Directions for alarm clock, AC, & CD player	3.07	10
2. Info for hospitality alliance	3.06	11
10. Info on laundry services	3.05	12
37. Brochures for shopping guide	2.91	13
13. Info on electronic adapters	2.89	14
14. Direction for Internet connection outlet	2.86	15
16. Directions for operating TV & WebTV	2.84	16
31. City/ regional map	2.80	17
22.Directions for emergency exits	2.79	18
29. Direction of in-house dining facilities	2.79	19
28. Info on library/ reading room	2.78	20
8. Info on Special aromatherapy articles	2.69	21
38. Museum & art gallery guide	2.68	22
11. Welcome card	2.67	23
36. Brochures for local attraction & events	2.67	24
33. Restaurant guide	2.64	25
9. Monetary info on mini-bar and additional beverages	2.6	26
35. Direction to local banks	2.55	27
23. Info on complementary seasonal amenities	2.53	28
20. Info on room services & menu items	2.51	29
6. Info on small electronic appliances	2.47	30
1. Hotel Business card with general information	2.35	31
25. Info on foreign currency exchange	2.28	32
12. Brochure of introducing hotel history & development	2.27	33
26. Monetary info on business services	2.22	34
39. Health service info	2.21	35
7. Info on bathtub	2.05	36
24. Safety deposit box	1.99	37
34. Transportation info	1.93	38
27. Monetary info on business rental services	1.70	39
Grand Mean	2.74	

Table 16-2 ISSI Performance Ranking by Asian Customers

Service Attribute	Asian Customers	
	Mean	Ranking
4. Direction maps	3.94	1
30. Info on hotel shuttle services	3.88	2
31. City/ regional map	3.82	3
3. Location of maps and floor plans	3.73	4
21. Info on special dietary menu	3.70	5
5. Info on recreational facilities	3.68	6
15. Directions for alarm clock, AC, & CD player	3.62	7
2. Info for hospitality alliance	3.55	8
29. Direction of in-house dining facilities	3.54	9
19. Monetary info on Internet services, TV, & game programs	3.51	10
14. Direction for Internet connection outlet	3.48	11
8. Info on Special aromatherapy articles	3.43	12
9. Monetary info on mini-bar and additional beverages	3.43	12
17. Info on check-out process via WebTV system	3.43	12
32. City tour guide brochure	3.43	12
18. Direction for operating phone services	3.39	16
6. Info on small electronic appliances	3.37	17
10. Info on laundry services	3.34	18
12. Brochure of introducing hotel history & development	3.34	18
38. Museum & art gallery guide	3.33	20
1. Hotel Business card with general information	3.31	21
13. Info on electronic adapters	3.29	22
33. Restaurant guide	3.28	23
7. Info on bathtub	3.27	24
23. Info on complementary seasonal amenities	3.27	24
36. Brochures for local attraction & events	3.25	26
25. Info on foreign currency exchange	3.21	27
37. Brochures for shopping guide	3.19	28
16. Directions for operating TV & WebTV	3.15	29
22.Directions for emergency exits	3.15	29
35. Direction to local banks	3.14	31
20. Info on room services & menu items	3.09	32
28. Info on library/ reading room	3.06	33
24. Safety deposit box	3.02	34
11. Welcome card	3.00	35
26. Monetary info on business services	2.91	36
39. Health service info	2.90	37
34. Transportation info	2.87	38
27. Monetary info on business rental services	2.63	39
Grand Mean	3.33	

Table 17 Performance Difference between Western Customers & Asian Customers

	Western Customers		Asian Customers		Western vs. Asian Difference	Sig.
	Mean	Std. Deviation	Mean	Std. Deviation		
Service Attribute						
7. Info on bathtub	2.05	1.55	3.27	1.27	-1.22	0.000 **
12. Brochure of introducing hotel history & development	2.27	1.68	3.34	1.28	-1.07	0.000 **
24. Safety deposit box	1.99	1.74	3.02	1.47	-1.03	0.000 **
31. City/ regional map	2.80	1.70	3.82	1.08	-1.02	0.000 **
1. Hotel Business card with general information	2.35	1.59	3.31	1.12	-0.96	0.000 **
34. Transportation info	1.93	1.79	2.87	1.38	-0.94	0.000 **
25. Info on foreign currency exchange	2.28	1.73	3.21	1.38	-0.93	0.000 **
27. Monetary info on business rental services	1.70	1.71	2.63	1.50	-0.93	0.000 **
6. Info on small electronic appliances	2.47	1.55	3.37	1.28	-0.90	0.000 **
9. Monetary info on mini-bar and additional beverages	2.60	1.75	3.43	1.20	-0.83	0.000 **
30. Info on hotel shuttle services	3.09	1.65	3.88	1.24	-0.79	0.000 **
29. Direction of in-house dining facilities	2.79	1.86	3.54	1.30	-0.75	0.001 **
8. Info on Special aromatherapy articles	2.69	1.71	3.43	1.23	-0.74	0.000 **
23. Info on complementary seasonal amenities	2.53	1.70	3.27	1.26	-0.74	0.000 **
26. Monetary info on business services	2.22	1.70	2.91	1.56	-0.69	0.002 **
39. Health service info	2.21	1.71	2.90	1.33	-0.69	0.001 **
38. Museum & art gallery guide	2.68	1.66	3.33	1.38	-0.65	0.002 **
33. Restaurant guide	2.64	1.72	3.28	1.62	-0.64	0.004 **
14. Direction for Internet connection outlet	2.86	1.58	3.48	1.27	-0.62	0.002 **
35. Direction to local banks	2.55	1.74	3.14	1.34	-0.59	0.006 **
20. Info on room services & menu items	2.51	1.76	3.09	1.28	-0.58	0.007 **
36. Brochures for local attraction & events	2.67	1.69	3.25	1.36	-0.58	0.006 **
15. Directions for alarm clock, AC, & CD player	3.07	1.53	3.62	1.15	-0.55	0.004 **
2. Info for hospitality alliance	3.06	1.55	3.55	1.27	-0.49	0.011 *
5. Info on recreational facilities	3.24	1.45	3.68	1.03	-0.44	0.012 *
13. Info on electronic adapters	2.89	1.76	3.29	1.46	-0.40	0.072
22. Directions for emergency exits	2.79	1.73	3.15	1.31	-0.36	0.095
11. Welcome card	2.67	1.54	3.00	1.22	-0.33	0.083
16. Directions for operating TV & WebTV	2.84	1.67	3.15	1.38	-0.31	0.138
21. Info on special dietary menu	3.39	1.66	3.70	1.32	-0.31	0.128
10. Info on laundry services	3.05	1.56	3.34	1.21	-0.29	0.134
19. Monetary info on Internet services, TV, & game programs	3.22	1.65	3.51	1.27	-0.29	0.154
28. Info on library/ reading room	2.78	1.77	3.06	1.39	-0.28	0.201
37. Brochures for shopping guide	2.91	1.62	3.19	1.43	-0.28	0.168
17. Info on check-out process via WebTV system	3.16	1.58	3.43	1.28	-0.27	0.163
32. City tour guide brochure	3.17	1.57	3.43	1.32	-0.26	0.199
3. Location of maps and floor plans	3.58	1.43	3.73	1.19	-0.15	0.408
18. Direction for operating phone services	3.29	1.58	3.39	1.22	-0.10	0.612
4. Direction maps	3.86	1.24	3.94	1.01	-0.08	0.600

Note: *t*-test two tail probability < 0.05 (*); *t*-test two tail probability < 0.01 (**)

When examining the perceived *performance* differences between Western and Asian customer; the data captured in the study identified the largest performance gaps scores to exist for the following ISSI attributes: “Hotel Business card with general information” (-0.96, $p < 0.000$), “Info on small electronic appliances” (-0.9, $p < 0.000$), “Info on bathtub” (-1.22, $p < 0.000$), “Info on Special aromatherapy articles” (-0.74, $p < 0.000$), “Monetary info on mini-bar and additional beverages” (-0.83, $p < 0.000$), “Brochure of introducing hotel history & development” (-1.07, $p < 0.000$), “Info on complementary seasonal amenities” (-0.74, $p < 0.000$), “Safety deposit box” (-1.03, $p < 0.000$), “Info on foreign currency exchange” (-0.93, $p < 0.000$), “Info on hotel shuttle services” (-0.79, $p < 0.000$), “City/ regional map” (-1.02, $p < 0.000$), and “Transportation info” (-0.94, $p < 0.000$). These 12 ISSI each had a negative gap score, which could indicate that Western customers considered them to have lower ISSI performance level than Asian customers. ISSI attributes that had an especially low performance gap score were “info on bath tub”, “brochure of introducing hotel history & development”, “safety deposit box”, and “city/regional map”. That information is used to consider Hypothesis 6-2.

Hypothesis 6-2

H₀₋₆₂: There are **no** significant perceived *Performance* differences between Western customers and Asian customers.

H_{A-62}: There are significant perceived *Performance* differences between Western customers and Asian customers.

A two-tail independent t-test was conducted on the grand mean of performance to test this hypothesis. As calculated, the performance level of ISSI was 2.74 for Western customers and 3.33 for Asian customers. This difference was statistically significant at 0.01 level ($t = -3.665$, $df = 254$, $p < 0.01$); and H_{0-62} was rejected. So, Hypothesis 6-2 failed to reject that there is a statistically different perceived performance level between Western customers and Asian customers regarding ISSI attributes in U.S. hotels.

Importance-Performance Grid: Western Customers as Compared to Asian Customers

By using the grand-mean values of the importance (3.45) and performance, (2.93), Figure 8 and Figure 9 illustrated the graphical representation of each 39 ISSI attribute perceived importance and performance by Western customers and Asian customers.

From Western customers' point of view, there were 22 ISSI attributes that collected in Quadrant C (Low Priority) in this study. Similar to hospitality educators' perception, "info on bathtub" (7), "safety deposit box" (24), "monetary info business rental services" (27), and "transportation info" (34) were considered the least importance and poorest performance in terms of providing hotel services among the ISSI attributes fallen into Quadrant C. However, only 10 ISSI attributes fell into Quadrant B (Keep Up the Good Work); one possible interpretation is that Western customers perceived ISSI provided by US hotels failed to meet their general needs. On the other hand, five ISSI attributes fell into Quadrant A (Concentrate Here): "hotel

business card with general information (1), “info on electronic adapters” (13), “direction for Internet connection outlet” (14), “direction of in-house dining facilities” (29), and “city/regional map” (31). In other words, Western customers generally perceived these five ISSI attributes as those which provided less than optimal services during their stay in a U.S. hotel. Furthermore, “info for hospitality alliance” (2) and “info on laundry services” (10) were the only two ISSI attributes that fell into Quadrant D (Possible Overkill). This suggested that Western customers considered these two ISSI as being low importance with relatively high level of satisfaction in their performance.

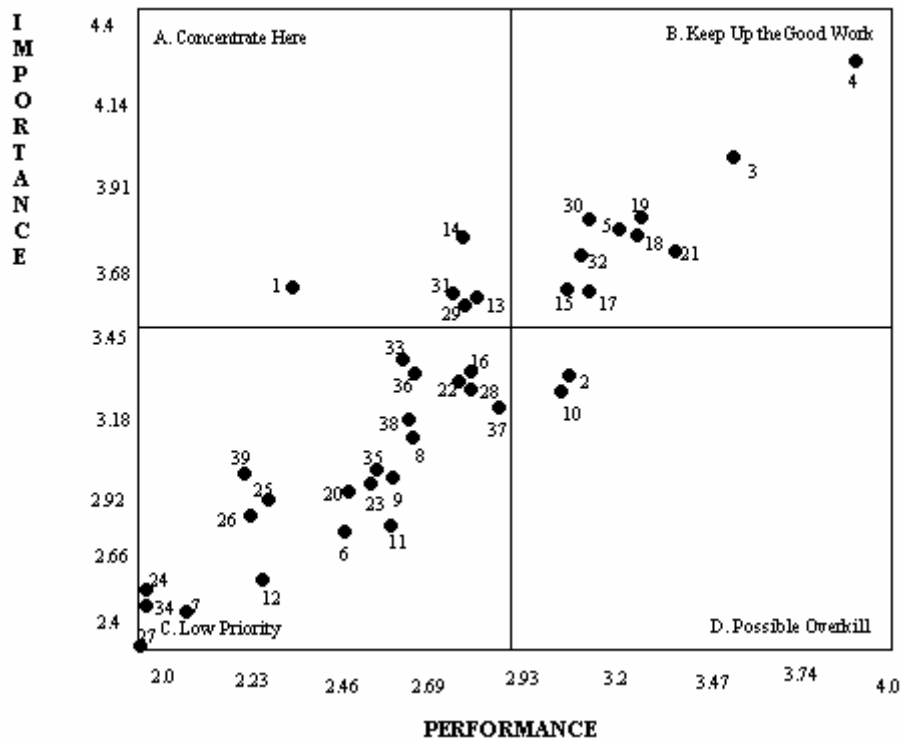


Figure 8. Importance-Performance Analysis Matrix of Western Customers

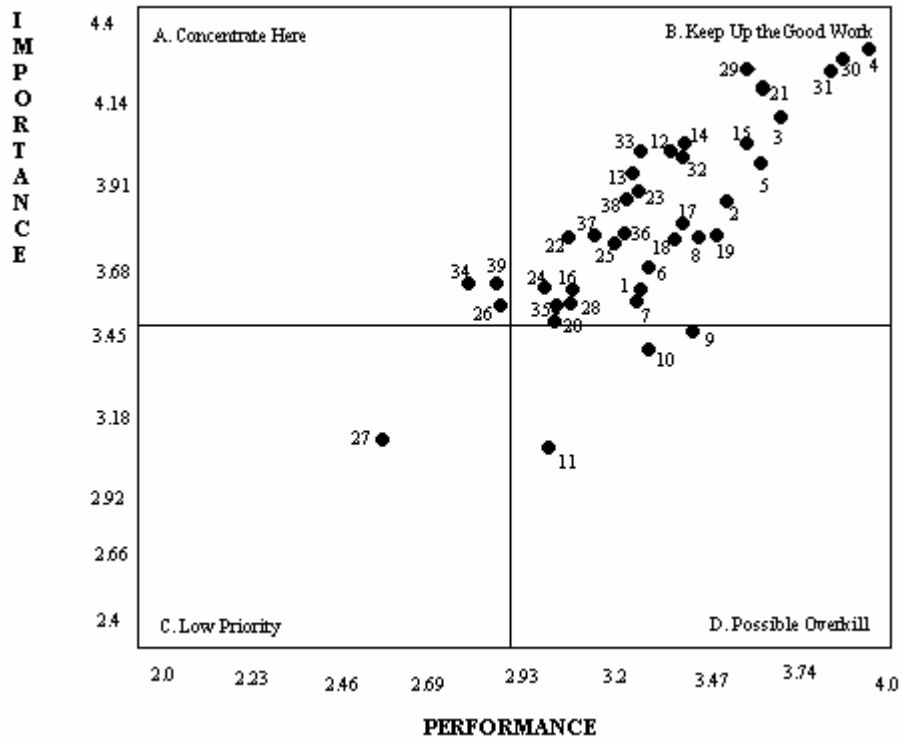


Figure 9. Importance-Performance Analysis Matrix of Asian Customers

Surprisingly, thirty-two out of thirty-nine ISSI attributes were categorized into Quadrant B (Keep Up the Good Work) by Asian customers. In other words, Asian customers generally considered ISSI provided by US hotels to be high importance with relatively high level of performance in terms of providing services. The only attribute which fell into Quadrant C (Low Priority) was “monetary info on business rental services” (27); and it might be because the main purposes of Asian customers traveling to U.S. were “pleasure” and “visiting friends/relatives”. On the other hand, hotel ISSI attributes which fell into Quadrant D (Possible Overkill) included “monetary info on

mini-bar” (9), “info on laundry services” (10), and “welcome card” (11). Furthermore, the ISSI captured in Quadrant A (Concentrate Here) were “monetary info on business services” (26), “transportation info” (34), and “health service info” (39); in other words, Asian customers expected US hotels to provide better service performance for these three ISSI items. Overall speaking, Asian customers not only expected US hotels to provide services through ISSI, but also considered ISSI important to access hotel services when they traveled to US.

Overall Satisfaction of ISSI

Survey participants were also asked to rate the satisfaction for ISSI items, services accessibility, ISSI service characteristics, and possible difficulties regarding the ISSI attributes (see Table 18).

	N	Mean	Std. Deviation
ISSI directions are easy to find	258	2.290	0.884
ISSI are easy to understand and self-explanatory	258	2.358	1.087
ISSI can improve service quality	254	3.791	0.876

Analysis of the rating (1-very difficult, 2-somewhat easy, 3-fairly easy, 4-extremely easy) of all respondents on the questionnaire items that focused on locating ISSI in hotels they previous stayed in U.S. revealed a mean score of 2.29. In general, the majority of the respondents had no problems of locating the ISSI items (“extremely easy to find” 10.2%; “fairly easy to find” 45.5%; “somewhat easy to find” 27.3%).

In terms of considering ISSI easy to find and self-explanatory, respondents' overall mean score was 2.36 (1-very difficult, 2-somewhat difficult, 3-somewhat easy, 4-fairly easy, 5-extremely easy). Over 38% of the respondents considered that ISSI items were "fairly easy to understand and self-explanatory", and 26.2% of the respondents considered ISSI items were "somewhat easy to understand and self-explanatory". However, a few respondents rated the experience of access hotel ISSI attributes as negative ("somewhat difficult to understand and self-explanatory" 6.5%; and "very difficult to understand and self-explanatory" 5.1%). Moreover, only 54.9% of the respondents reported that the hotels they previous stayed at provided different language versions of ISSI items; and the top three foreign languages that hotels provided to explain ISSI attributes were Spanish, Japanese, and Chinese.

Even though 62.2% of the respondents indicated that having ISSI made it easy for them to access the services whenever they wanted, but 22.5% of the respondents reported "no opinion" toward ISSI's service accessibility. The top five most frequently identified difficulties that respondents reported when accessing the ISSI were: (1) unfamiliar with the ISSI that hotel provided, (2) could not locate the directions that hotel provided to explain the ISSI, (3) language barriers, (4) misinterpretation of the information from hotel employees, and (5) could not recognize the symbols and signs that the hotel used.

When asking respondents' perception toward ISSI satisfaction, a 5-point scale (1-strongly disagree, 2-somewhat disagree, 3-somewhat agree, 4-agree, 5-strongly agree) was employed. Generally speaking, hotel provided ISSI can fairly increase customers' satisfaction level (Mean=3.701). In other words, most respondents agreed

that hotel could improve service quality for customers by providing ISSI attributes (“strongly agree” 18.2%; “agree” 18.2%; and “somewhat agree” 25.1%). Furthermore, over 74% of the respondents indicated that hotels that provided ISSI would increase the probability of guest returning.

Relationship between ISSI Performance and Respondents’ Traveling Behavior and Demographic Profiles

The analysis of variance (ANOVA) test was conducted to examine the relationship between ISSI satisfaction levels and customers’ traveling behavior as well as their demographic characteristics. The basic assumptions for ANOVA were met:

- Normality: Histograms with normal curves for the variables were visually detected.
- Independence: The educator sample used in this study was obtained by using the CHRIE (The Council of Hotel, Restaurant and Institutional Education) online directory, and the online-interest groups were obtained from Yahoo.Com at different language sites. A census survey was applied to both population groups; thus, this assumption was met.

Table 19-1 shows the satisfaction rating for ISSI attributes based on respondents’ traveling behavior. For the satisfaction measurement, a 5-point Likert-type scale was used.

Respondents' Traveling Behavior and Perceived ISSI Performance

For each satisfaction variable, an ANOVA analysis was performed to test if the respondents scored statistically differently based on their traveling behavior. The analysis of the respondents' traveling behavior for the six satisfactory variables found slightly statistically significant differences, and no significant difference was found in the traveling behavior categories “most recent trip” and “nights of stay”. In other words, regardless of when customers travel to U.S. or how many nights customers stayed in U.S. hotels, no statistical significance in satisfaction was perceived differently by respondents.

Table 19-1 Perceived Overall ISSI Performance and Respondents' Traveling Behavior

Perceived Overall ISSI Performance	Purpose of Trip		Most Recent Trip		Night Of Stay		Method of Choosing Hotel		Reservation Method	
	F-value	Sig.	F-value	Sig.	F-value	Sig.	F-value	Sig.	F-value	Sig.
ISSI directions are easy to find	0.74	0.568	1.96	0.085	0.74	0.565	0.56	0.830	1.85	0.090
ISSI are easy to understand and self-explanatory	1.65	0.162	1.24	0.291	1.01	0.404	0.57	0.818	1.05	0.393
ISSI can improve service quality	1.51	0.199	0.13	0.985	0.12	0.976	1.06	0.395	0.90	0.495
ISSI would impact on hotel-selection decision	2.66	0.033*	2.25	0.051	1.70	0.150	2.48	0.010*	2.52	0.022*
ISSI would impact on recommendation	1.51	0.043*	1.77	0.120	0.96	0.433	1.80	0.069	2.90	0.010*
ISSI would increase satisfaction level	1.37	0.246	0.65	0.659	0.40	0.811	0.82	0.595	2.07	0.057

Note: F-test two tail probability < 0.05 (*)

TABLE 19-2 Perceived ISSI Performance Factors and Respondents' Traveling Behavior

Perceived ISSI Performance Factors	Purpose of Trip		Most Recent Trip		Night Of Stay		Method of Choosing Hotel		Reservation Method	
	F-value	Sig.	F-value	Sig.	F-value	Sig.	F-value	Sig.	F-value	Sig.
F1 : General Services	1.853	0.120	3.480	0.005*	1.348	0.253	1.169	0.316	2.178	0.046*
F2 : External ISSI	2.889	0.023*	1.483	0.196	0.678	0.608	3.822	0.000*	2.083	0.056
F3 : Room Comfort & Safety	0.927	0.449	1.265	0.280	1.141	0.338	1.124	0.347	3.073	0.007*
F4: Atmosphere Amenities	1.756	0.139	0.930	0.462	0.734	0.570	1.270	0.254	0.598	0.731
F5 : Augmented Services	2.592	0.038*	3.592	0.004*	1.541	0.191	1.232	0.276	1.140	0.340
F6 : Special Services	5.645	0.000*	1.476	0.199	0.954	0.433	0.964	0.471	0.363	0.902

Note: F-test two tail probability < 0.05 (*)

However, ISSI attributes would impact customers' hotel-selection decision based on their purpose of trip, method of choosing a hotel, and reservation method. Most of the pleasure travelers indicated that ISSI attributes would impact their decisions of hotel-selection ($p=.033$). The majority of conference travelers indicated that ISSI attributes would impact their recommendation to others in the future ($p=0.043$). Location of the hotel and online information were identified as the major factors that impacted the hotel-selection decision ($p=0.01$).

Furthermore, ANOVA analysis was performed to test whether there was a significant relationship between six performance factors and respondents' traveling behavior (Table 19-2). It was found that Factor 4 (Atmosphere Amenities) did not have a significant relationship across five traveling behavior variables. Moreover, no significant relationship found between variable "night of stay" and six performance factors. This indicated that hotel customers have similar perceptions towards ISSI performance regardless how many nights they stayed in a hotel. The significant relationships were found between: (1) Factor 1 (General Services) and "most recent trip" ($p=0.005$), and "reservation method" ($p=0.046$); (2) Factor 2 (External ISSI) and "purpose of the trip" ($p=0.023$), and "method of choosing hotel" ($p<0.000$); (3) Factor 3 (Room Comfort & Safety) and "reservation method" ($p=0.007$); (4) Factor 5 (Augmented Services) and "purpose of trip" ($p=0.038$), and "most recent trip" ($p=0.004$); and (5) Factor 6 (Special Services) and "purpose of trip" ($p<0.000$). Hypothesis 7 states as follows:

Hypothesis 7

H₀₋₇: There is **no** significant relationship between travelers' traveling behavior and their perceived performance of ISSI.

H_{A-7}: There is a significant relationship between travelers' traveling behavior and their perceived performance of ISSI.

This study revealed that over 50% of respondents booked accommodations over the Internet and that online information had a significant impact on their hotel-selection decision ($p=0.022$) and future recommendation to others ($p=0.001$). As resulted, H₀₋₇ was partially rejected. This Hypothesis 7 failed to reject that there is relationship between respondents' traveling behavior and their satisfaction level of ISSI attributes in U.S. hotels.

Respondents' Demographic Profile and Perceived ISSI Performance

Six ISSI satisfaction variables were also selected to examine the relationship between respondents' demographic characteristics and ISSI performance. Table 20-1 shows the results of this ANOVA. The analysis of six satisfaction variable and the demographic variables of gender, age group, education level, occupation, and place of residency revealed some statistically significant differences.

Table 20-1 Perceived Overall ISSI performance and Respondent's Demographic Profile

Perceived Overall ISSI performance	Gender		Age Group		Education Level		Occupation		Place of Residency	
	F-Value	Sig.	F-Value	Sig.	F-Value	Sig.	F-Value	Sig.	F-Value	Sig.
ISSI directions are easy to find	1.47	0.227	0.57	0.682	2.65	0.006*	5.77	0.017*	1.09	0.369
ISSI are easy to understand and self-explanatory	1.77	0.184	1.40	0.234	1.84	0.062	5.95	0.015*	1.7393	0.127
ISSI can improve service quality	0.01	0.917	0.53	0.712	2.33	0.015*	0	--	2.49	0.032
ISSI would impact on hotel-selection decision	0.08	0.775	3.32	0.011*	2.05	0.042	2.68	0.103	4.24	0.001*
ISSI would impact on recommendation	0.98	0.324	2.83	0.025*	1.18	0.311	1.56	0.221	4.16	0.001*
ISSI would increase satisfaction level	0.15	0.703	0.22	0.927	1.03	0.416	0.22	0.641	0.84	0.521

Note: F-test two tail probability < 0.05 (*)

TABLE 20-2 Perceived ISSI Performance Factors and Respondents' Demographic Profile

Perceived ISSI Performance Factors	Gender		Age Group		Education Level		Occupation		Place of Residency	
	F-Value	Sig.	F-Value	Sig.	F-Value	Sig.	F-Value	Sig.	F-Value	Sig.
F1 : General Services	0.747	0.388	6.899	0.000*	3.042	0.011*	4.726	0.000*	6.776	0.000*
F2 : External ISSI	1.379	0.242	0.649	0.629	0.520	0.761	0.884	0.530	0.347	0.884
F3 : Room Comfort & Safety	0.926	0.337	2.609	0.037*	0.684	0.636	0.804	0.600	1.995	0.081
F4: Atmosphere Amenities	0.484	0.487	1.558	0.187	1.996	0.081	1.406	0.195	0.560	0.730
F5 : Augmented Services	0.000	0.991	2.574	0.039*	1.049	0.390	3.167	0.002*	4.481	0.001*
F6 : Special Services	0.223	0.637	1.193	0.315	3.264	0.007*	4.039	0.000*	1.596	0.162

Note: F-test two tail probability < 0.05 (*)

Surprisingly, no significant difference was found between gender groups; this indicated that both male and female customers have similar perceptions regarding the satisfaction level of ISSI attributes. However, the F-value was significant at the 0.05 level, which indicated that the satisfaction means for ISSI attributes differed from each other significantly among respondents' age groups, educational levels, occupations, and places of residency. Significant differences were found for the "26~35 age group" and "above 55 age group" in terms of hotel-selection decision (p=0.011) and future recommendation (p=0.025). Furthermore, the ratings of ISSI attributes impacted the hotel-selection decision for respondents from the Asian region (p=0.001) and the future recommendation to others (p=0.001) were significant. Interestingly, there was a

significant difference ($p=0.006$) in respondents' rating of how easy it was to find ISSI direction. The analysis showed that academic educator or administrator rated these significantly higher than service industry professional did.

Also, in analyzing the demographic characteristics with the six performance factors (Table 20-2), no significant relationship was found between six performance factors and gender groups. This indicated that both male and female customers have similar perceptions regarding ISSI performance. Moreover, Factor 2 (External ISSI) and Factor 4 (Atmosphere Amenities) did not report a significant relationship with five demographic variables. However, an F-value with significance of $p<0.05$ indicated that there was a significant relationship between: (1) Factor 1 (General Services) and "age group" ($p<0.000$), "education level" ($p=0.011$), "occupation" ($p<0.000$), and "place of residency" ($p<0.000$); (2) Factor 3 (Room Comfort & Safety) and "age group" ($p=0.037$); (3) Factor 5 (Augmented Services) and "age group" ($p=0.039$), "occupation" ($p=0.002$), and "place of residency" ($p=0.001$); and (4) Factor 6 (Special Services) and "education Level" ($p=0.007$), and "Occupation" ($p<0.000$). This finding informed hypothesis 8 as follows:

Hypothesis 8

$H_{0.8}$: There is **no** significant relationship between customers' demographic characteristics and their perceived performance of ISSI.

$H_{A.8}$ There is significant relationship between customers' demographic characteristics and their perceived performance of ISSI.

H₀₋₈ thus was partially rejected. The Hypothesis 8 failed to reject that there is different perceived satisfaction level from respondents' demographic profile information.

ISSI Performance Dimensions

There were 39 ISSI (informative service setting items) attributes used in this study. Factor analysis was used to condense the number of attributes and to confirm the notion that underlying performance dimensions existed for hotel customers. By utilizing the *data reduction* function of the Statistical Package for Social Sciences 11.5 (SPSS, 2001) possible underlying factors were examined for all 39 ISSI attributes.

First of all, the Kaider-Meyer-Olkin (KMO) statistic was calculated as 0.938 for this study. Because the KMO was above 0.8, the ISSI variables could be considered interrelated, and they shared common underlying dimensions. Second, the Bartlett's Test of Sphericity was conducted in order to test the significance of the correlation matrix ($\chi^2=5833.617$, $df=741$, $p<0.000$). Both tests indicated that factor analysis was appropriate for this study. Table 21 shows the results of the factor analysis.

Table 21 Factor Analysis Result of Perceived Performance of ISSI attributes in US hotels

	F1	F2	F3	F4	F5	F6
F1 General Services						
27. Monetary info on business rental services	0.748					
34. Transportation info	0.733					
26. Monetary info on business services	0.704					
24. Safety deposit box	0.701					
20. Info on room services & menu items	0.664					
22. Directions for emergency exits	0.642					
25. Info on foreign currency exchange	0.603					
29. Direction of in-house dining facilities	0.571					
7. Info on bathtub	0.552					
12. Brochure of introducing hotel history & development	0.527					
23. Info on complementary seasonal amenities	0.513					
F2 External ISSI						
36. Brochures for local attraction & events		0.765				
37. Brochures for shopping guide		0.738				
38. Museum & art gallery guide		0.698				
35. Direction to local banks		0.681				
31. City/ regional map		0.621				
32. City tour guide brochure		0.591				
33. Restaurant guide		0.580				
F3 Room Comfort & Safety						
19. Monetary info on Internet services, TV, & game programs			0.713			
18. Direction for operating phone services			0.673			
4. Direction maps			0.647			
3. Location of maps and floor plans			0.607			
16. Directions for operating TV & WebTV			0.540			
F4 Atmosphere amenities						
10. Info on laundry services				0.731		
11. Welcome card				0.566		
13. Info on electronic adapters				0.525		
F5 Augmented Services						
6. Info on small electronic appliances					0.646	
1. Hotel Business card with general information					0.636	
2. Info for hospitality alliance					0.622	
F6 Special Services						
28. Info on library/ reading room						0.726
21. Info on special dietary menu						0.689
30. Info on hotel shuttle services						0.522
Eigenvalues	16.147	2.48	2.076	1.466	1.248	1.154
Percentage of variance (%)	41.402	6.358	5.322	3.760	3.199	2.960
Cumulative variance	41.40	47.76	53.08	56.86	60.04	63.00

Note: KMO Measure of Adequacy = 0.938;
Bartlett Test of Sphericity = 5833.617 (p<0.000)

After the viability of the factor analysis was determined, an exploratory factor analysis using principal component with varimax rotation was used to identify underlying factors according to which hotel customers evaluated the performance of hotel ISSI attributes. The ISSI with a factor loading of 0.5 or higher were clustered together; and the results of the factor analysis produced a clear factor structure with relatively appropriate factors. Most ISSI performance variables loaded fairly reasonably on the selected factors; seven out of thirty-nine ISSI items were excluded from this process.

Form the varimax-rotated factor matrix, six factors were extracted that explained 63% of the overall variance. These six factors were named as “general services”, “external ISSI”, “room comfort and safety”, “atmosphere amenities”, “augmented services”, and “special services”. The “general services” factor had the highest eigenvalue (16.147), and it represented 41.40% of the explained variance. The second highest eigenvalue (2.48) was “external ISSI” factor, and this represented 6.35% of the explained variance in the sample.

The “room comfort and safety” factor included ISSI attributes such as “monetary info on Internet services, TV, & game programs”, “direction for operating phone services”, “direction maps”, “location of maps and floor plans”, and “directions for operating TV & WebTV”. This factor had 2.076 in eigenvalue, and this represented 5.32% of the explained variance in the sample.

The “atmosphere amenities” factor included the following ISSI attributes: “info on laundry services”, “welcome card”, and “info on electronic adapters”. The next two

factors were identified as “augmented services” and “special services”. The “augmented services” factor accounted for 3.76% of the variance with an eigenvalue of 1.466. The “special services” factor contained three items and explained 2.96% of the variances, with an eigenvalue of 1.154. The items associated with this factor included “info on library/ reading room”, “info on special dietary menu”, and “info on hotel shuttle services”.

Determinants of the Impact of ISSI on Respondents’ Satisfaction, Recommendation, and Hotel-Selection Decision

The equation score was regressed against the factor scores of the six ISSI performance dimensions derived from the factor analysis; then a regression analysis was conducted to find out whether the six ISSI performance dimensions had significant influence on customers’ satisfaction level, future recommendation, and hotel-selection decision. The regression analysis for the three equations of this study was presented in Chapter 3. To predict the goodness of fit of the regression model, the multiple coefficient R, coefficient of determination (R^2), and F-ratio were examined.

The Impact on Customers’ Decision of Hotel-selection

Analysis of the data revealed the coefficient of determination (R^2) was 0.258, which indicated that 25.8% of the variance in the model was explained by the five ISSI performance factors. The R of the independent variables (i.e., the six ISSI performance factors) on the dependent variable (Y_{HS}) was 0.508; which showed that the customers’ perceived hotel-selection decision was influenced by these six ISSI performance

factors. Moreover, the F-ratio had a value of 14.494 ($p < 0.000$), which indicated that the results of this regression model could hardly have occurred by chance.

The values of variance of inflation (VIF) and tolerance for each performance factor are used to test the extent of multicollinearity and collinearity. No VIF values exceeded 10.0; which indicated that there was no multicollinearity, and there was no collinearity case that explained more than 10% of any predictor variable's variance.

Dependent Variable					
Hotel-selection decision					
F = 14.494 (P < 0.000)					
Independent Variables in the Equation	β	Standardized Beta	t	Sig.	VIF
Constant	3.054		46.216	0.000	
X5: Augmented Services	0.350	0.319	5.331	0.000	1.003
X2: External ISSI	0.267	0.239	3.990	0.000	1.003
X1: General Services	0.235	0.213	3.570	0.000	1.001
X6: Special Services	0.224	0.205	3.427	0.001	1.002
X4: Atmosphere Amenities	0.152	0.135	2.265	0.025	1.004
Independent Variable Not in the Equation					
X3: Room Comfort & Safety	0.043	.038	0.631	0.529	
Multiple R=0.508					
$R^2 = 0.258$					
Adjusted $R^2 = 0.241$					
Standard error= 0.965					

As shown in the table above, five out of the six factors appeared as significant ($p < 0.05$) independent variables in this regression model. The t-statistic test was used for testing whether the five performance factors contributed information to the dependent variable (Y_{HS}). In this study, five factors emerged as significant (t-value < 0.05) independent variables in the proposing model ($Y_{HS} = \beta_0 + B_1X_1 + B_2X_2 + \dots + B_nX_n + \epsilon$), then can be written as follows:

$$Y_{HS} = 3.054 + 0.319X_5 + 0.239X_2 + 0.213 X_1 + 0.205X_6 + 0.135X_4$$

Where,

Y_{HS} : Customers' hotel-selection decision

X_5 : Augmented Services (Factor 5)

X_2 : External ISSI (Factor 2)

X_1 : General Services (Factor 1)

X_6 : Special Services (Factor6)

X_4 : Atmosphere Amenities (Factor 4)

The results of the regression analysis showed that there was a positive relationship between the five independent variables because the five coefficients carried positive signs. The partial correlation coefficient, β , was used to indicate the impact. Overall speaking, the probability of customers hotel-selection decisions that was impacted by ISSI performance changed by 1.111 (0.319+ 0.239 +0.213 + 0.205+ 0.135) for each unit change in the five factors. Furthermore, the relative importance of the factors in contributing to the variance of customers' satisfaction level (dependent variable: Y_{HS}) was explained by the standardized Beta (Standardized $\beta = 0.319$, $p < 0.000$). The results revealed that, a one-unit increase in performance with "augment services" would lead to positive 31.9% of impact on customers' decision of hotel-selection. Hypothesis 2 is formed as follows:

Hypothesis 2

H_{0-2} : There is **no** significant positive impact of current ISSI performance on customer's hotel-selection decision.

H_{A-2}: There is a significant positive impact of current ISSI performance on customer's hotel-selection decision.

Based on the data analysis, the regression model adopted in this study could have not occurred by chance and it is statistically significant. Thus, H₀₋₂ was rejected. The Hypothesis 2 failed to reject that there is a significant relationship between perceived ISSI performance and respondents' hotel-selection decision.

The Impact on Customer's Recommendation

The R² of independent variables (i.e., the six ISSI performance factors) on the dependent variable (Y_{HR}) was 0.41; which showed that the six ISSI performance factors had an impact on customers' rating of whether they would recommend the hotel. The F-ratio of this model had a value of 7.11 (p<0.000). The coefficient of determination (R²) was 0.168 indicating that 16.8% of the variance in the model was explained by the six ISSI performance factors.

Dependent Variable					
Likelihood on recommendation					
F =7.11 (P<0.000)					
Independent Variables in the Equation	β	Standardized Beta	t	Sig.	VIF
Constant	3.178		48.043	0.000	
X4: Atmosphere Amenities	0.221	0.206	3.276	0.001	1.006
X1: General Services	0.195	0.187	2.971	0.003	1.000
X2: External ISSI	0.180	0.172	2.730	0.007	1.005
X5: Augmented Services	0.168	0.161	2.563	0.011	1.001
X3: Room Comfort & Safety	0.139	0.131	2.089	0.038	1.004
X6: Special Services	0.131	0.127	2.023	0.044	1.000
Multiple R=0.41					
R ² = 0.168					
Adjusted R ² = 0.145					
Standard error= 0.975					

The t-statistic test was used for testing whether the six performance factors contributed information to the dependent variable (Y_{HR}). Interestingly, all six factors appeared as significant ($p < 0.01$) independent variables in this regression model. The model was written as follows:

$$Y_{HS} = 3.178 + 0.206X_4 + 0.187X_1 + 0.172X_2 + 0.161X_5 + 0.131X_3 + 0.127X_6$$

Where,

Y_{HR} : The impact on customers' recommendation of the hotel

X_4 : Atmosphere Amenities (Factor 4)

X_1 : General Services (Factor 1)

X_2 : External ISSI (Factor 2)

X_5 : Augmented Services (Factor 5)

X_3 : Room comfort & Safety (Factor 3)

X_6 : Special Services (Factor 6)

The results of the analysis showed that there was a positive relationship between all six independent variables because positive signs of coefficients were carried in this regression model. Based on the standardized Beta that computed in this regression model, the probability that a customer's recommendation was impacted by ISSI performance changed by 0.984 ($0.206 + 0.187 + 0.172 + 0.161 + 0.131 + 0.127$) for each unit change in these six performance factors. The values of variance of inflation (VIF) and tolerance for each performance factor are used to test the extent of multicollinearity and collinearity. No VIF values exceeded 10.0; which indicated

neither multicollinearity nor collinearity occurred in this model. Hypothesis 3 is formed as follows:

Hypothesis 3

H₀₋₃: There is **no** significant positive impact of current ISSI performance on determinants of customer's likelihood of recommendation.

H_{A-3}: There is significant positive impact of current ISSI performance on determinants of customer's likelihood of recommendation.

Therefore, H₀₋₃ was rejected. The Hypothesis 3 failed to reject that performance scores of hotel ISSI attributes in U.S. do have significant impact on customers' likelihood of future recommendation.

The Impact on Customer's Level of satisfaction

The R² of independent variables (i.e., the six ISSI performance factors) on the dependent variable (Y_S) was 0.332; which showed that customers satisfaction level with these six ISSI performance factors was positive. There was 11% of the variance in the model explained by the ISSI performance factors because the coefficient of determination (R²) is reported as 0.11 for this study. In addition, the F-ratio had a value of 8.896 (p<0.000) of this regression model, indicating that the results of this equation could not have occurred by chance. In this model, no VIF values exceeded 10.0; which indicated that there was no multicollinearity, and there was no collinearity case that explained more than 10% of any predictor variable's variance. Moreover, the t-statistic test was used for testing whether the performance factors contributed information to the dependent variable (Y_S).

Dependent Variable					
Increase guest satisfaction level		F =8.896 (P<0.000)			
Independent Variables in the Equation	β	Standardized Beta	t	Sig.	VIF
Constant	3.694		65.045	0.000	
X4: Atmosphere Amenities	0.212	0.237	3.647	0.000	1.003
X3: Room Comfort & Safety	0.153	0.173	2.687	0.008	1.002
X2: External ISSI	0.127	0.144	2.241	0.026	1.003
Independent Variables Not in the Equation					
X1: General Services	0.087	0.099	1.549	0.123	
X5: Augmented Services	0.100	0.114	1.797	0.074	
X6: Special Services	0.082	0.095	1.492	0.137	
Multiple R=0.332					
$R^2 = 0.11$					
Adjusted $R^2 = 0.098$					
Standard error= 0.839					

Only three factors appeared as significant ($p < 0.01$) independent variables in this regression model. The proposing model can be expressed as follows:

$$Y_S = 3.694 + 0.237X_4 + 0.173X_3 + 0.144X_2$$

Where,

Y_S : Customers' level of satisfaction with ISSI

X_4 : Atmosphere Amenities (Factor 4)

X_3 : Room comfort & Safety (Factor 3)

X_2 : External ISSI (Factor 2)

Furthermore, the relative importance of the factors in contributing to the variance of customers' satisfaction level (dependent variable: Y_S) was explained by the standardized Beta. Of the three dimensions, "atmosphere amenities" had the greatest effect (Standardized $\beta = 0.237$, $p < 0.000$), followed by "room comfort & safety"

(Standardized $\beta = 0.173$, $p=0.008$), and “external ISSI” (Standardized $\beta = 0.144$, $p<0.026$). Overall, the probability of a customer’s satisfaction level impact by ISSI performance changed by 0.554 ($0.237 + 0.173 + 0.144$) for each unit of change in these three variables. Similar to the previous two regression models, the results of the regression analysis showed that there was a positive relationship between the three independent variables because all coefficients carried positive signs. Hypothesis 1 is formed as follows:

Hypothesis 1

H_{0-1} : There is **no** significant positive impact of current ISSI performance on customer’s satisfaction level.

H_{A-1} : There is significant positive impact of current ISSI performance on customer’s satisfaction level.

As resulted, H_{0-1} was rejected, indicating that there is significant relationship between ISSI performance and hotel customer’s satisfaction level.

CHAPTER V

SUMMARY, CONCLUSIONS AND RECOMMENTIONS

Summary

The purpose of this study was to ascertain any differences in perceptions between (1) hospitality educators and hotel customers and (2) Western customers and Asian customers; as well as ascertain the importance and performance of ISSIs (informative service setting items) in US hotels. The major objectives of this study were to:

- (1) Explore and compare the ISSI attributes that were perceived to be important by (a) hospitality educators and hotel customers and (b) Western customers and Asian customers; as well as the perceived performance of those attributes.
- (2) Conduct an Importance-Performance Analysis (IPA) to map the importance and performance of ISSI attributes in US hotels.
- (3) Identify the ISSI attributes that related to customers' satisfaction level.
- (4) Determine the relationship between ISSI attributes and customers' hotel-selection decisions
- (5) Determine the relationship between ISSI attributes and customers' recommendation of the hotel.

The population of this study consisted of hotel customers and hospitality educators. The educator sample used in this study was a census of the Council of Hotel, Restaurant and Institutional Education (CHRIE); and approximately 1000 CHRIE members were invited to participate in the online survey. By using the “groups” function, 180 online-interest groups (see Table 5) were obtained from Yahoo.Com; and the size of each group was ranged between 3 to 3000 people. Overall, approximately 2000 subjects (1000 online-group population and 1000 CHRIE population) were contacted via electronic message and 502 surveys were returned. Only 275 out of 502 responses were usable. Furthermore, to learn more about the customers’ perceptions towards hotel ISSI, this sample was also divided in two groups: Western customers and Asian customers.

The questionnaire was developed through literature review and industrial information gathering. The study employed a self-administered online survey with four major sections. The first section asked questions related to respondents’ travel behavior. The second section listed thirty-nine hotel ISSI attributes and survey participants were asked to rate the *importance* and *performance* of these ISSI. The third section consisted of questions related to customers’ satisfactory and perceived experience regarding hotel ISSI. The final section of the survey consisted of demographic question related to gender, age, educational level, occupation, and place of residency.

Discussions of the Findings

In recent decades, the significant growth and diverse business environment in hospitality industry has been increasingly competitive; therefore, it is strategically important for U.S. hoteliers to understand the services attributes perceived by hotel customers. For this reason, the Important-Performance Analysis was adapted in this study in order to gain insight of customers' perceptions regarding ISSI (Informative Service Setting Items) in U.S. hotels.

Analysis of the data revealed that 34.5% of the respondents traveled to the U.S. for "pleasure" and 29% of the respondents traveled because of "business" purpose. Respondents' choices of a hotel were based on the "location of the hotel" (36.9%), "online information" (16.5%), and "included in the package" (10.6%). When booking hotel accommodations, the most common methods respondents used was "book over Internet" (42.4%); however, there were 30% of the Asian customers reported "use a travel agent" (30%) was the major approach when booking a hotel accommodation. There was not enough information gathered regarding the hotels that respondents stayed when previously traveled to U.S. There is no data analysis involving hotel chains or brands.

Importance-Performance Analysis (IPA) was employed to compare the overall perceived ISSI by all customers. The mean scores of each of the 39 ISSI attributes of its importance (grand mean=3.45) and performance (grand mean=2.93) were computed and plotted into IPA grid. Only one ISSI item fell in "concentrate here" quadrant, while

three ISSI items fell into “possible overkill” quadrant. Surprisingly, the IPA grid resulted in a semi linear plotting; however, no relevant research literature can be found to explain this phenomenon. Furthermore, hospitality educators and hotel customers differed in their *importance* rating of ISSI attributes ($t = -2.012$, $df = 254$, $p < 0.05$) and also in their *performance* rating ($t = -1.65$, $df = 254$, $p < 0.05$). Western customer and Asian customers also differed in both *importance* rating ($t = -3.462$, $df = 254$, $p < 0.01$) and *performance* rating ($t = -3.665$, $df = 254$, $p < 0.01$) of ISSI attributes in this study.

The results (Figure 6, Figure 7, Figure 8, and Figure 9) show that hospitality educators, hotel customers, Western customers, and Asian customers have very different perception regarding the importance-and-performance of hotel ISSI. However, there were few ISSI attributes categorized into same quadrant among these four groups. All four groups reported that the “info on laundry services” (10) was *Possible Over Kill*, and “monetary info on business rental services” (27) was *Low Priority*. And there were eight ISSI attributes reported by all four groups as *Keep Up the Good Work*, and these attributes were “location of maps and floor plans” (3), “direction maps” (4), “info on recreational facilities” (5), “info on check-out via WebTV system” (17), “direction for operating phone services” (18), “monetary info on Internet, game programs” (19), “info on special dietary menu” (21), “info on hotel shuttle services” (30), and “city tour guide brochure”(32). The managerial implication to hoteliers is that continuing resources should be directed to maintaining and improving these ISSI attributes. Each group reported different ISSI in *Concentrate Here* quadrant; the possible implication is that hoteliers first need to understand their targeting customers segments in order to plan or serve better ISSI.

As for factor analysis, the ISSI items with factor loading of 0.50 or higher were clustered together; seven out of the thirty-nine ISSI items were excluded from this process. This study identified six underlying ISSI factors that have influence on customers' satisfaction level, their future recommendation, and their hotel-selection decisions. These six factors are: "general services", "external ISSI", "room comfort and safety", "atmosphere amenities", "augmented services", and "special services". The analysis of the respondents' traveling behavior for the six performance factors found slightly statistically significant differences. Also, the analysis of six performance factors and the demographic variables of gender, age group, education level, occupation, and place of residency revealed some statistically significant differences.

The suggested loading into the "general services" factor (Eigenvalue=16.147) were: "Monetary info on business rental services", "Transportation info", "Monetary info on business services", "Safety deposit box", "Info on room services & menu items", "Directions for emergency exits", "Info on foreign currency exchange", "Direction of in-house dining facilities", "Info on bathtub", "Brochure of introducing hotel history & development", and "Info on complementary seasonal amenities". And the suggested loading items onto the "external ISSI" (Eigenvalue=2.48) were: "Brochures for local attraction & events", "Brochures for shopping guide", "Museum & art gallery guide", "Direction to local banks", "City/ regional map", "City tour guide brochure", and "Restaurant guide". The "room comfort and safety" factor included such ISSI attributes as "Monetary info on Internet services, TV, & game programs", "Direction for operating phone services", "Direction maps", "Location of maps and

floor plans”, and “Directions for operating TV & WebTV”. The “atmosphere amenities” factor included the following ISSI attributes: “Info on laundry services”, “Welcome card”, and “Info on electronic adapters”. The last two factors were identified as “augmented services” (Eigenvalue= 1.466), and “special services” (Eigenvalue= 1.154) included “Info on library/ reading room”, “Info on special dietary menu”, and “Info on hotel shuttle services”.

The regression model in this study revealed that five out of the six factors appeared as significant independent variables to Y_{HS} (The impact on customers’ decision of hotel-selection). All six appeared as significant to the dependent variable Y_{HR} (The impact on customer’s recommendation of the hotel); however, there were only three out of the six factors which appeared as significant independent variables to Y_S (Customer’s level of satisfaction with ISSI). As the products and lodging facilities are relatively homogenous, hotel industry should not be perceived by providing only common services. More importantly, the supplemented services provided by hotels need to be differentiate between hotels. Even though the underlying factors were found among 39 ISSI attributes and those factors appeared statistically significant to the dependent variables in this study, a successful hotel should always improve its services/products that relate to better performance to meet customers’ special needs and expectations.

Implications

When customers come in contact with hospitality self-serve products and services, their satisfaction with the experience is derived at least partially from the quality of the interaction (i.e. *Informative Service Setting Items* in this study). These interactions may be direct, such as when customers engage in physical service consumption; or indirect, such as when the ISSI attributes simply blend together as part of the establishment's atmosphere. In either case, satisfying the customer encounter and enhancing the perception of service quality could positively influence the likelihood of repeat patronage. Dissatisfying encounters could have the opposite effect.

This study empirically demonstrated the importance and performance of ISSI attributes in hotel businesses in predicting choice behavior; the results of this study have important strategic and marketing implications. Finkelstein (1989) stated that hospitality and service attributes are most likely to be perceived and evaluated within the context in which customers experienced them. For instance, satisfaction with hotel attributes may emerge from the customers' assessment of their competence in choosing or returning to a lodging facility. Therefore, satisfaction with the hotel ISSI attributes that help to increase the customers' competence can be assessed as ISSI; these ISSI can also reinforce customers' likelihood of future recommendation of the hotel to others. Thus, marketing managers can find the results of this study insightful when attempting to attract target customers.

The approach taken in this study should prove to be practically and financially useful to the hoteliers in terms of appraising the importance and performance of ISSI

quality influencing choice. Haywood (1988) stated that hotel managers recognize their dependency on repeat patronage; regular customers do not only affect revenues, they also provide predictability, security and enjoyment for those involved in the service encounter. As the concept of diverse customer segments and cultural tourism, it is important that hotels offer and promote unique services and ISSI. To the extent that hotel managers find this type of approach diagnostically useful, two recommendations are suggested:

- (1) Competitive analysis: The IPA model can be used to assess the ISSI service attributes for a hotel and its principal competitors. In other words, a change in similar level of service quality upon competitor can be determined effectively; and the effects of competitor actions can also be assessed.
- (2) Segment-level analysis: The methods used in this study can be used to estimate ISSI attributes for customer segments. Segment-specific analysis techniques allow the managers to investigate the differential effects of the various ISSI attributes across customer segments. The managers then can have better understanding which ISSI attributes are most important to the various customer segments. This information would be very useful when targeting segments of customers (Zeithaml, 1988).

Rather than taking customer encounters for granted, or assuming that customer behaviors are beyond control, progressive managers in a hospitality environments where customers congregate are taking proactive steps to manage customer profiles to leverage the degree of compatibility between customers (Pranter & Martin, 1991). Surprisingly, many respondents in this study cannot recall which hotel they stayed

previously when traveled to U.S. No statistical findings of customer perceptions between hotels can be explored. On the other hand, Spreng, MacKenzie, and Olshavsky (1996) pointed out that prior research consistently found that there was a significant relationship between satisfaction and repurchase intention, and that important consequence of customer satisfaction was increased repurchase intentions. In this study, the investigations revealed that positive results that customers experienced from hotel ISSI attributes could greatly influence on customers' satisfaction level, their likelihood of future recommendation, and their hotel-selection decision.

Day (1969) stated that repeat patronage was associated with customer characteristics and suggested that this was because many behaviorally loyal customers were influenced mainly by opportunity and routine rather than by preference. Based on the results from the Importance-Performance Analysis in this study, hoteliers can provide just-in-time ISSI for customers to enhance hotel service satisfaction. Moreover, hoteliers can also use the IPA techniques to understand the different needs for ISSI across customer behavior, personality characteristics, and purchase attitude toward hotel services. Also, when Day used a product of attitude and repeat patronage as a measure of loyalty, he found that demographic variables were related to this measure better than they were to a measure of repeat patronage on its own. The information gained in this study can benefit the hotel industry so that it can offer and design products, services, and Informative Service Setting Items (ISSIs) that fit the evolving needs from diverse of customers nowadays.

Recommendations & Future Research

Global travel and tourism is important to economics worldwide; thus improvement of service quality in the lodging industry is imperative. When tourists decide to travel abroad, they consider not only the attractiveness of the destination, but also how the journey can benefit them. Therefore, if a destination wants to attract and then satisfy its tourists, it must expend efforts to develop lodging facilities and provide positive service experiences that satisfy travelers. Many hotel companies are realizing that their offering is partly a tangible product and partly intangible services. This study revealed that customers used perceived ISSI attributes in their hotel-selection decisions.

Suggestions for future research here are that the way forward is to work backwards from actual behavior. In other words, repeated activity or varied activity could form the basis of developing an attitudinal and personality psychology approach to a definition of loyalty. Such approaches would contribute to the understanding of the concepts of both attachment and loyalty as it applies to hospitality brand recognition. Future research might replicate this study in international markets to see if different ISSI attributes exist in Europe and Asia lodging companies. Future research could also help hoteliers in the U.S. hotels industry to understand their tangible services that are provided through ISSIs (informative service setting items). For example, this could be replicated in a specific hotel chain to identify the impact of ISSI that customers used in selecting the hotel. Moreover, this study did not examine whether the perceived ISSI service quality differed by hotel categories; future studies could examine the perceived

ISSI service for a particular type of hotel, so that the results could be more insightful for hoteliers to differentiate their marketing strategies in order to serve their target customers.

Another study might investigate the actual usage pattern of ISSI attributes for hotel customers from various nationalities. Finally, one could research in detail the reasons why and how ISSIs fail to increase the level of customer satisfaction and their affect on future hotel-selection decisions. Such information could aid in target marketing segments and operational strategies. It would improve understanding of different needs for hotel ISSI attributes across customer behavior and personality characteristics. It can also provide a strategic plan for hotelier to develop and improve on limit budget restriction. Therefore, the impact of service quality on the financial viability of hospitality companies suggest a need to better understand the relationship between service attributes and customer choice behavior. In addition, hotel managers require information and tools to make better-informed decisions. The goal of this study was to contribute to both of those needs.

Bibliography

- Ananth, M., Demicco, F.J., Moreo, P.J., & Howey, R H. (1992). Marketplace needs of mature travelers in the American lodging industry. *The Cornell Hotel and Restaurant Administration Quarterly*, 33 (4). p.12~p.24.
- Anonymous. (1993). Designing a Contemporary hotel service culture. *International Journal of Service Industry Management*, 4 (2). p.63~p.72.
- Baloglu, S. (2002). Dimensions of customer loyalty: Separating friends from well wishers. *Cornell Hotel and Restaurant Administration Quarterly*, 43 (1). p.47~p.57.
- Bare, M. & Turkel, S. (2003). Superior service sells guestrooms. *Lodging Hospitality*, 59(6). p.32.
- Barsky, J.D. & Labagh, R. (1992). A strategy for customer satisfaction. *Cornell Hotel and Restaurant Administration Quarterly*, 33(5). p.32~p.39.
- Berry, L. (1987). 8 keys to top service at financial institutions. *American Banker*, 152 (152). p.4.
- Berry, L.L. & Lampo, S.K. (2000). Teaching an old service new tricks: The promise of service redesign. *Journal of Service Research*, 2 (3). p.265~p.275.
- Berry, L.L., Parasuraman, A. & Zeithaml, V. A. (1994). Improving service quality in America: Lessons learned; Executive commentary. *The Academy of Management Executive*, 8 (2). p. 32~p.50.
- Bhatty, M., Skinkle, R., & Spalding, T. (2001). Redefining customer loyalty, the customer's way. *Ivey Business Journal*, 65 (3). p.13~p.17.
- Bitner, M.J. (1990, April). Evaluating service encounters: The effects of physical surroundings and employee responses. *Journal of Marketing*, 54. p.69~p.82.
- Bitner, M.J. (1992, April). Servicescapes: The impact of physical surroundings on customers and employees. *Journal of Marketing*, 56. p.57~p.71.
- Boulding, W., Kalra, A., Staelin, R., & Zeithaml, V.A. (1993, February). A dynamic process model of service quality: From expectations to behavioral intentions. *Journal of Marketing Research*, 30. p.7~p.27.

- Brandy, M.K. & Cronin Jr., J.J. (2001). Customer orientation: Effects on customer service perceptions and outcome behaviors. *Journal of Service Research*, 3 (3). p.241 ~p.249.
- Brown, T.J. (1997). Using norms to improve the interpretation of service quality measures. *The Journal of Services Marketing*, 11 (1). p.66. ~p.76.
- Brown, T.J., Churchill, G.A., & Peter, J.P. (1993). Improving the measurement of service quality. *Journal of Retailing*, 66 (1). p.127 ~p.139.
- Calhoun, J. (2001). Driving loyalty by managing the total customer experience. *Ivey Business Journal*, 65 (6). p.69~p.73.
- Callan, R. J. & Kyndt, G. (2001). Business travelers' perception of service quality: A prefatory study of two European city center hotels. *International Journal of Tourism Research*.3. p.313 ~p.323.
- Cameron, S. (2000). Understanding cultural differences: Tips for working with international staff and campers. *The Camping Magazine*, 13 (4).
- Chadee, D. D. & Mattsson, J. (1996). An empirical assessment of customer satisfaction in tourism. *The Service Industries Journal*, 16 (3). p. 305 ~p.320.
- Choi, T.Y. & Chu, R. (2000). Levels of satisfaction among Asian and Western travelers. *The International Journal of Quality & Reliability Management*, 17(2). p.116~p.128.
- Churchill, A.G. (1996). *Basic Marketing Research*. Orlando, FL: Dryden Press.
- Clow, K. E. & Beisel, J. L. (1995). Managing consumer expectations of low-margin, high-volume service. *The Journal of Services Marketing*, 9 (1). p.33~p.47.
- Cobanoglu, C. (2001). Business traveler's hotel selection and satisfaction, USA. (Doctoral dissertation. Oklahoma State University, 2001). AAT3023914.
- Conner, F. (1999). Travelers' habits, travel trends. *Cornell Hotel and Restaurant Administration Quarterly*, 40 (2). p.12.
- Cooper, D.R. & Schindler, P.S. (1998). *Business Research Method* (6th Ed). Singapore: McGraw-Hill Book Co.
- Cronbach, L J. (1951). Coefficient alpha and the internal structure of tests. *Psychometrika*, 16. p.297~p.334.

- Cronin, J.J. & Taylor, S.A. (1992). Measuring service quality: A reexamination and extension. *Journal of Marketing*, 56(3). p. 55 ~p.68.
- Cronin, J.J. & Taylor, S.A. (1994). SERVPERF versus SERVQUAL: Reconciling performance-based and perceptions-minus-expectations measurement of service quality. *Journal of Marketing*, 58(1). p. 125 ~p.131.
- Day, G.S. (1969). A two-dimensional concept of brand loyalty. *Journal of Advertising Research*, 9. p.29~p.35.
- de Brentani, U. (1995). New industrial service development: Scenarios for success and failure. *Journal of Business Research*, 32 (2). p.93~p.103.
- Di Paula, A. (1999). Assessing customer values: Stated importance versus derived importance. *Marketing News* 33 (12). H39.
- East, R., Gendall, P., Hammond, K., & Lomax, W. (2005). Consumer loyalty: Singular, additive or interactive? *Australasian Marketing Journal*, 13 (2). p.10~p.27.
- Edgett, S. (1994). The traits of successful new service development. *Journal of Service Marketing*, 8 (3). p.40~p.49.
- Edvardsson, B. (1992). Service breakdowns: A study of critical incidents in an airline. *International Journal of Service Industry Management*, 3 (4). p.17~p.29.
- Enz, C. A. & Siguaw, J. A. (2000). Best practices in service quality. *Cornell Hotel and Restaurant Administration Quarterly*, 41 (5). p.20 ~p.29.
- Erdem, T. & Swait, J. (2004). Brand credibility, brand consideration, and choice. *Journal of Consumer Research*, 31 (1). p.191~p.199.
- Finkelstein, J. (1989). *Dining out: A sociology of modern manners*. Cambridge: Polity Press.
- Ford, R. E. & Heaton, C. P. (2000). *Managing the Guest Experience in Hospitality Organization*. Albany, NY. Delmar.
- Fottler, M. D. Ford, R. C., Reberts, V., Ford, E. W., & Spears Jr. J. D. (2000). Creating a healing environment: the importance of the service setting in the new consumer-oriented healthcare system/ Practitioner application. *Journal of Healthcare Management*, 45 (2). p.91~p.106.
- Friedman, M. L. & Smith, L. J. (1993). Consumer evaluation processes in a service setting. *The Journal of Service Marketing*, 7 (2). p.47 ~p.60.

- Gabbie, O., & O'Neill, M. A. (1996). SERVQUAL and the Northern Ireland hotel sector: a comparative analysis – part 1. *Managing Service Quality*, 6 (6). p.25~p.33.
- Gabbie, O., & O'Neill, M. A. (1996). SERVQUAL and the Northern Ireland hotel sector: a comparative analysis – part 2. *Managing Service Quality*, 7 (1). p.43~p.50.
- Gilbert, D. C. & Morris, L. (1995). The relative importance of hotels and airlines to the business traveler. *International Journal of Contemporary Hospitality Management*, 7 (6). p.19~p.25.
- Gilbert, D. C. & Morris, L. (1995). The usefulness of critical incident technique analysis in isolating travel satisfactions. *International Journal of Contemporary Hospitality Management*, 7 (4). p.5~p.9.
- Goldsmith, M. (October, 1999). Conflict resolution. *Executive Excellence*, 16 (10). p. 17 ~p.19.
- Gould-Williams, J. (1999). The impact of employee performance cues on guest loyalty, perceived value and service quality. *The Service Industries Journal*, 19 (3). p.97 ~p.115.
- Grossbart, S., Hampton, R., Rammohan, B., & Lapidus, R.S.(1990). Environmental dispositions and customer response to store atmospherics. *Journal of Business Research*, 21 (3). p.225~p.242.
- Gumus, M. & Koleoglu, N. (2002). Factor analysis on service attributes of Canakkale municipality. *The TQM Magazine*, 14(6). p. 373 ~p.375.
- Hair, J.F., Anderson, R.E., Tatham, R.L., & Black, W.C. (1998). *Multivariate data analysis with Readings*. New Jersey: Prentice-Hall Inc.
- Hardin, T. (2002). You call this #%*\$@ service? *Successful Meeting*, 51 (1). p.49~p.52.
- Harris, K., Baron, S., & Ratcliffe, J. (1995). Customers as oral participants in a service setting. *The Journal of Service Marketing*, 9 (4). p.64 ~p.75.
- Hartline, M.D. & Jones, K.C. (1996). Employee performance cues in a hotel service environment: Influence on perceived service quality, value, and word-of-mouth intentions. *Journal of Business Research*, 35 (3). p.207~p.216.
- Haywood, K.M (1988). Repeat patronage: Cultivating alliance with customer. *International Journal of Hospitality Management*, 7 (3). p.225 ~p.237.

- Hemmasi, M., Strong, K.C., & Taylor, S.A. (1994). Measuring service quality for strategic planning and analysis in service firms. *Journal of Applied Business Research*, 10 (4). p.24 ~p.33.
- Hofstede, G. (1980). *Cultures' Consequences: International Differences in Work Related Values*. Beverly Hills: Sage publications.
- Hofstede, G. (1991). *Cultures and Organization: Software of the Mind*. London: McGraw-Hill.
- Hoon, S. J. (1992). Overseas investment – looking ahead: looking abroad. *Far Eastern Economic Review*, 155 (32). p.37~p.39.
- Huddleston, P., Whipple, J., & VanAuken, A. (2004). Food store loyalty: Application of a consumer loyalty framework. *Journal of Targeting, Measurement and Analysis for Marketing*, 12 (3). p.213~p.231.
- Husbands, W. (1989). Social status and perception of tourism in Zambia. *Annals of Tourism Research*, 16 (2). p.237~p.252.
- Hutton, J.D. & Richardson, L.D. (1995). Healthscapes: The role of the facility and physical environ. *Health Care Management Review*, 20 (2). p.48~p.62.
- ITA Office of Travel & Tourism Industries. (2001, April). Top 55 Overseas Markets for International Visitors Arrivals to the United States 2000 and 1999. Retrieved February 2004 from the World Wide Web: <http://www.tinet.ita.doc.gov/view/f-2000-202-001/index.html>
- ITA Office of Travel & Tourism Industries. (2005, May). International Arrivals to U.S. – Historical Visitation 1997-2004. Retrieved October 2005 from the World Wide Web: <http://www.tinet.ita.doc.gov/view/f-2004-04-001/index.html>
- Jacoby, J. & Kyner D.B. (1973, February). Brand loyalty vs. repeat purchasing behavior. *Journal of Marketing Research*, 10. p.1~p.9.
- Jakasa, E. (1999). Consumer research in the restaurant environment, Part 1: A conceptual model of dining satisfaction and return patronage. *International Journal of Contemporary Hospitality Management*, 11 (5). p.205~p.222.
- Jarvis, L.P. & Wilcox, J.B. (1977). True vendor loyalty or simply repeat purchase behavior? *Industrial Marketing Management*, 6. p.9~p.14.
- Katz, J.R., Swanson, D.L., & Nelson, L.K. (2001). Culture-based expectations of corporate citizenship: A propositional framework and comparison of four cultures. *International Journal of Organizational Analysis*, 9 (2) p.149~p.169.

- Keegan, W. J. & Green, M. S. (2000). *Global Marketing* (2nd Ed.) New Jersey: Prentice-Hall inc. p. 378~p.380.
- Keyt, J.C., Yavas, U. & Riecken, G. (1994). Importance-performance analysis: A case study in restaurant positioning. *International Journal of Retail & Distribution* 22 (5). p.35~p.41.
- Kirwin, P. (1991). The satisfaction of service. *Lodging Hospitality*, 47 (6). p.66 ~p.68.
- Knutson, B. (1988). Frequent travelers: Making them happy and bring them back. *Cornell Hotel and Restaurant Administration Quarterly*, 29 (1). p.83 ~p.87.
- Kollat, D. T., Engel, J.F., & Blackwell, R.D. (1970). Current problems in consumer behavior research. *Journal of Marketing Research*, 7 (3). p.327~p.333.
- Kotler, P. (1973). Atmosphericics as a marketing tool. *Journal of Retailing*, 49 (4). p.48.
- Lewis, R.C. (1984). Isolating differences in hotel attributes. *Cornell Hotel and Restaurant Administration Quarterly*, 25 (3). p.64~p.77.
- Lockyer, T. & Fraser, R. (1993). Tourism growth and the impact of totally quality management. Paper presented at the conference of PATA/WTO Human Resource for Tourism Conference, Bali.
- Longa, L. (1995, April). Lousy hotel service? The problem may get lost in the translation. *Wall Street Journal*. F1.
- Lovelock, C. (2001). A retrospective commentary on the article “New tools for achieving service quality.” *Cornell Hotel and Restaurant Administration Quarterly*, 42 (4). p.39 ~p. 46.
- Lovelock, C. , Patterson, P.G., & Walker, R.H. (1998). *Service Marketing*. Sydney: Prentice-Hall.
- Marquardt M. J. & Engel, D. W. (1993). *Global Human Resource Development*. New Jersey: Prentice Hall. p.2~p.5, p.13~p.14, p.292~p.296.
- Martilla, J.A. & James, J.C. (1977). Importance performance analysis. *Journal of Marketing* 41. p.77~p.79.
- Martin, C.R. & Horne, D.A. (1993). Service innovation: Successful versus unsuccessful firms. *International Journal of Service Industry Management*, 4 (1). p.49~p.65.

- Martin, C.R. & Horne, D.A. (1995). Level of success inputs for service innovations in the same firm. *International Journal of Service Industry Management*, 6 (4). p.40~p.56.
- Matilla, A. (1999). Consumers' value judgments: How business travelers evaluate luxury-hotel services. *Cornell Hotel and Restaurant Administration Quarterly*, 40 (1). p.40 ~p.46.
- McCleary, K. W. & Weaver, P. A. (1992). Simple & safe. *Hotel and Motel Management*, 207 (12). p.23~p.26.
- McCull, A., Smith, A., White, P., & Field, J. (1998). General practitioners' perceptions of the route to evidence based medicine: A questionnaire survey. *British Medical Journal*, 316 (7128). p.361~p.366.
- McDougall, G.H. & Levesque, T.J. (1994). A revised view of service quality dimensions: A empirical investigation. *Journal of Professional Services Marketing*, 11(1). p.182 ~p.209.
- Mehta, S.C., Lalwani, A.K. & Han, S.L. (2000). Service quality in retailing: Relative efficiency of alternative measurement scales for different product-service environments. *International Journal of Retail & Distribution Management*, 28(2). p62~p.70.
- Meuter, M.L., Ostrom, A.L., Roundtree, R.I., & Bitner, M.J. (2000). Self-service technologies: Understanding customer satisfaction with technology-based service encounters. *Journal of Marketing*, 64 (3). p.50~p.65.
- Naisbitt J. (1994). The new centre of world power. *Asian Business*, 30 (6). p.42~p.45.
- Namasivayam, K. & Hinkin, T. R. (2003). The customer's role in the service encounter: The effects of control and fairness. *Cornell Hotel and Restaurant Administration Quarterly*, 44 (3). p.26 ~p.36.
- Ndhlovu, J. & Senguder, T. (2002). Gender and perception of service quality in the hotel industry. *Journal of American Academy of Business*, 1 (2). p.301 ~p.308.
- Nebel, E. C. III, Rutherford, D., & Schaffer, J. D. (1994). Reengineering the hotel organization. *Cornell Hotel and Restaurant Administration Quarterly*, 35 (5). p.88 ~p.97.
- Nicholls, J.A.F., Gilbert, G. R., & Roslow, S. (1998). Parsimonious measurement of customer satisfaction with personal service and the service setting. *The Journal of Consumer Marketing*, 15 (3). p.239~p.246.

- Nie, W. & Young, S. T. (1997). A study of operations and marketing goal consensus in the banking industry. *International Journal of Operations & Production Management*, 17 (8). p. 806~p. 815.
- Niininen, O., Szivas, E., & Riley, M. (2004). Destination loyalty and repeat behavior: An application of optimum stimulation measurement. *The International Journal of Tourism Research*, 6 (6). p.439~p.448.
- O'Neill, M. & Palmer, A. (2001). Survey timing and consumer perceptions of service quality: An overview of empirical evidence. *Managing Service Quality*, 11 (3). p.182 ~p.190.
- O'Neill, M., Palmer, A., & Charters, S. (2002). Wine production as a service experience – the effects of service quality on wine sales. *The Journal of Service Marketing* 16 (4). p.342~p.360.
- Oliver, R.L. (1981). Measurement and evaluation of satisfaction processes in retail settings. *Journal of Retailing*, 57 (3). p.25~p.48.
- 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. p.41~p.50.
- Parasuraman, A., Zeithaml, V. A., & Berry, L. L. (1988).SERVQUAL: a multiple-item scale for measuring consumer perception of service quality. *Journal of Marketing*, 61 (1). p.12~p.40.
- Parasuraman, A., Zeithaml, V. A., & Berry, L. L. (1990). *Delivering Quality Service: Balance customer perceptions and expectations*. New York: The Free Press.
- Parasuraman, A., Zeithaml, V. A., & Berry, L. L. (1993). Reassessment of expectations as a comparison standard in measuring service quality: implications for future research. *Journal of Marketing*, 58 (January). p.111~p.123.
- Pedhazur, E.J. (1997). *Multiple Regression in Behavioral Research (3rd Ed)*. Forth Worth, TX: Harcourt Brace College Publishers.
- Peter, J. P. & Donnelly, Jr. J. H. (1997). *A Preface to Marketing Management (7th Ed.)*. Boston: The McGraw-Hill Companies, Inc. p.246~p.249.
- Pranter, C.A. & Martin, C.L. (1991). Compatibility management: Roles in service performance. *The Journal of Services Marketing*, 5 (2). p.43 ~p.53.
- Qu, H.L. & Brown, T. J. (2001). Thailand's international travel image. *Cornell Hotel and Restaurant Administration Quarterly*, 42 (2). p.82 ~p.95.

- Reichheld, F.E. (1996). *The loyalty effect: The hidden force behind growth, profits and lasting value*. Boston, MS: Harvard University Press.
- Richard, M. D. & Allaway, A.W. (1993). Service quality attributes and choice behavior. *The Journal of Service Marketing*, 7 (1). p.59~p.68.
- Roderick, G.A. (1996). The intangible amenities. *Successful Meetings*, 45(10). p.201 ~p.202.
- Rowe, M. (1998) Why service still stinks. *Lodging Hospitality*, 54 (12). p.77 ~p.80.
- Saleh, F. & Ryan, C. (1991, July). Analyzing service quality in the hospitality industry using SERVQUAL Model. *The Service Industries Journal*, 11 (3). p. 324~p. 344.
- Sampson, S. E. & Showalter, M.J. (1999, July). The performance importance response function: Observations and implications. *The Service Industries Journal*, 19 (3). p.2~p.15.
- Schneider, B, & Bowen, D. E. (1993). The service organization: Human resources management is curcial. *Organizational Dynamics*, 21 (4). p.39~p.53.
- Schneider, B. (1994). HRM – a service perspective: Towards a customer-focused HRM. *International Journal of Service Industry Management*, 5 (1). p.64~p.77.
- Sewell, C. & Brown, P.B. (1990). *Customers For Life*. New York: Pocket Books.
- Spienlli, M. A. & Canavos, G. C. (2000). Investigating the relationship between employee satisfaction and guest satisfaction. *Cornell Hotel and Restaurant Administration Quarterly*, 41 (6). p.29 ~p.33.
- Spreng, R.A., MacKenzie, S.B., & Olshavsky, R.W. (1996). A re-examination of the determinants of consumer satisfaction. *Journal of Marketing*, 60 (1). p.15~p.32.
- SPSS (2001). *Statistical Package for Social Sciences*. Chicago, IL: SPSS, Inc.
- Staroba, K. (1992). Inside Hotel Service. *Association Management*, 44 (7). p.61 ~p.67.
- Taninecz, G. (1990, June). Business traveler survey. *Hotel and Motel Management*, 205. p.29~p.32.
- Vandamme, R. & Leunis, J. (1993). Development of a multiple-item scale for measuring hospitality service quality. *International Journal of Service Industry Management*, 4 (3). p.30~p.49.

- Wakefield, K. L. & Blodgett, J. G. (1994). The importance of servicescapes in leisure service setting. *The Journal of Service Marketing*, 8 (3). p.66~p.78.
- Wanger, G. (1994). Satisfaction guaranteed? *Lodging Hospitality*, 50 (6). p.45 ~p.46.
- Weaver, P. A. & Oh, H. C. (1993). Do American business travelers have different hotel service. *International Journal of Contemporary Hospitality Management*, 5 (3). p.16~p.22.
- Weiermair, K. (2000). Tourists' perceptions towards and satisfaction with service quality in the cross-cultural service encounter: implications for hospitality and tourism management. *Managing Service Quality*, 10 (6). p.397 ~p.409.
- Westbrook, R.A., & Reilly, M.D. (1983). Value-percept disparity: An alternative to the disconfirmation of expectations theory of consumer satisfaction. In R.P. Bagozzi & A.M. Tybout (Eds.). *Advances in Consumer Research*. (p.256~p.261). MI: Association for Consumer Research.
- Wilensky, L., & Buttle, F. (1988). A multivariate analysis of hotel benefit bundles and choice trade-offs. *International Journal of Hospitality Management*, 7(1). p.29~p.41.
- Wong, A., Dean, A. M., & White, C. J. (1999). Analyzing service quality in the hospitality industry. *Managing Service Quality*, 9 (2). p.136 ~p.146.
- Woodside, A.G., Frey, L.L. & Daly, R.T. (1989, December). Linking service quality, customer satisfaction and behavioral intention. *Journal of Health Care Marketing*, 9. p.5~p.17.
- World Tourism Organization. (2003, October). WTO Tourism Highlights, Edition 2003: Changes in market behavior and weak world economy dictate tourism trends. Retrieved October2003 from the World Wide Web:
<http://www.world-tourism.org/newsroom/Releases/2003/october/highlights.htm>
- Zeithaml, V.A. (1988, July). Consumer perceptions of price, quality and value: A means-end model and synthesis of evidence. *Journal of Marketing*, 52. p.2~p.22.
- Zeithaml, V.A., & Bitner, M.J. (1996). *Service Marketing*. New York: McGraw-Hill

Appendix A
– Cover Letter –

Greetings,

My name is Shinyi Lin, and I am a doctoral student in Hospitality Administration from Oklahoma State University. I am seeking your participation in an online survey regarding your experiences related to service items used in hotels.

The purpose of this survey is to gain perspective into the **importance** and **performance** of hotel Informative Service Setting Items. The online survey will take no more than fifteen minutes to complete, and all responses will be submitted in private to ensure absolute anonymity. Your participation in this study is voluntary. By filling out the survey, you are indicating your consent to participate in this survey.

Please be kind to complete the survey at

<http://freeonlinesurveys.com/rendersurvey.asp?id=96586>

by September 14, 2005.

If you have any further questions regarding survey, you may contact Dr. Sue C. Jacobs, IRB Chair at 415 Whitehurst, Oklahoma State University, Stillwater, OK 74078, USA; (405)744-1676

Thank you very much for your assistance!

Shinyi Lin, PhD Student

Oklahoma State University, School of Hotel & Restaurant Administration

210 HESW, Stillwater, OK 74078

shinyi@okstate.edu



Appendix B
– The Questionnaire –

ISSI (informative service setting items) are items used in hotels to give information or assistance to the guest without having “human contact”.

They are used to:

- (1) provide an opportunity to meet or exceed customer expectations in the overall service experience,
- (2) create and enhance the moods of both customers and employees, and
- (3) be part of the service itself and helping create a memorable experience.

Section I: Travel Behavior

1. What was the main purpose of your most recent trip in U.S.?

- Pleasure
- Business
- Visiting Friends/ Relatives
- Meeting/ Conference
- Others, please specify _____

2. How long ago was your most recent trip in U.S.?

- Less than 1 month
- 2~6 months
- 7~12 months
- 1~2 years
- More than 2 years

3. How many nights did you stay at the hotel on your most recent trip in U.S.?

- 1~3 nights
- 4~6 nights
- 7~9 nights
- 10 nights or more

4. How did you choose the hotel where you stayed?

- Location of the hotel
- Brand name
- Recommended by travel agent

Frequent guest program

Online information

Recommended by friends/relatives

Included in the package

Others, please specify _____

5. How did you book your hotel commendations?

Use a travel agent

Book over the Internet

Call a toll free reservation number

Call the hotel directly

Use a hotel directory

Others, please specify _____

6. What is the brand of the hotel you stayed?

Best Western Int'l

Doubletree Hotels

Hilton Hotels Corp.

Hyatt Hotels/ Hyatt Int'l

Holiday Inn Worldwide

La Quinta Inn

Marriott Int'l

Ramada Inn

Red Roof Inns

Sheraton Hotel Corp.

Walt Disney Co.

Westin Hotels & Resorts

Others, please specify _____

Section II

The following is a list of attribute which could play a role as **Informative Service Setting Items**. Please select the level of Importance and Performance from 1 to 5 for each statement.

Please use the following scales:

Importance of an ISSI

- 1- Not important at all
- 2- A little important
- 3- Somewhat important
- 4- Important
- 5- Very important
- NA- Not applicable

Performance of an ISSI

- 1-Very Poor performance
- 2- Poor performance
- 3- Neutral performance
- 4- Good performance
- 5- Excellent performance
- NA – Not applicable

Hotel Informative Service Setting Items	IMPORTANCE Low ←-----→ High	PERFORMANCE Low ←-----→ High
1. A hotel business card with general information on it about the hotel	1 2 3 4 5 NA	1 2 3 4 5 NA
2. Information for hospitality alliance (e.g. frequent guest program, reservation system, airline alliance, etc.)	1 2 3 4 5 NA	1 2 3 4 5 NA
3. Sign boards in the lobby and each floor with location maps and floor plans	1 2 3 4 5 NA	1 2 3 4 5 NA
4. Signs directing customers to elevators, restrooms, parking-lot, and different wings of hotel	1 2 3 4 5 NA	1 2 3 4 5 NA
5. Directions and operating hours of recreational facilities (e.g. fitness room, swimming pool, tennis court, etc.)	1 2 3 4 5 NA	1 2 3 4 5 NA
6. Information on operating small electronic appliances (e.g. iron, coffee-maker)	1 2 3 4 5 NA	1 2 3 4 5 NA
7. Information on operating bathtub or shower	1 2 3 4 5 NA	1 2 3 4 5 NA
8. Information/ingredients on special aromatherapy atmosphere articles (e.g. massage mousse)	1 2 3 4 5 NA	1 2 3 4 5 NA
9. Monetary information on mini-bar, room service, and additional self-serve beverages (e.g. coffee, tea bags)	1 2 3 4 5 NA	1 2 3 4 5 NA
10. Monetary information/options on laundry services	1 2 3 4 5 NA	1 2 3 4 5 NA
11. A welcome card to greet the guests	1 2 3 4 5 NA	1 2 3 4 5 NA
12. A brochure of introducing hotel history/ operational development, etc.	1 2 3 4 5 NA	1 2 3 4 5 NA
13. Information on electronic adapters needed to use your own appliances	1 2 3 4 5 NA	1 2 3 4 5 NA
14. Directions on how to use the Internet connection/outlet	1 2 3 4 5 NA	1 2 3 4 5 NA

Hotel Informative Service Setting Items	IMPORTANCE Low ←-----→ High	PERFORMANCE Low ←-----→ High
15. Directions for operating alarm clock and Air-Conditioning	1 2 3 4 5 NA	1 2 3 4 5 NA
16. Directions for operating the TV/WebTV and remote control	1 2 3 4 5 NA	1 2 3 4 5 NA
17. Information on check-out processes via Web-TV system	1 2 3 4 5 NA	1 2 3 4 5 NA
18. Directions for operating the phone to make both domestic and international phone calls	1 2 3 4 5 NA	1 2 3 4 5 NA
19. Information for Internet connection, TV and Games programs	1 2 3 4 5 NA	1 2 3 4 5 NA
20. Information on room services and menu items	1 2 3 4 5 NA	1 2 3 4 5 NA
21. Information on special dietary menu items that are available	1 2 3 4 5 NA	1 2 3 4 5 NA
22. Signs/direction for fire escape, emergency exits, 2 or shelter locations in the hotels	1 2 3 4 5 NA	1 2 3 4 5 NA
23. Information/location on complementary seasonal amenities (e.g. umbrella, convenient raincoat, etc.)	1 2 3 4 5 NA	1 2 3 4 5 NA
24. Location and direction for operating safety deposit box	1 2 3 4 5 NA	1 2 3 4 5 NA
25. Information on foreign currency exchanges	1 2 3 4 5 NA	1 2 3 4 5 NA
26. Monetary information on business services (e.g. copying and fax services, express mailing services, etc.)	1 2 3 4 5 NA	1 2 3 4 5 NA
27. Monetary information on business equipment rental services (e.g. cellular phone/notebook rental, limousine rental, etc.)	1 2 3 4 5 NA	1 2 3 4 5 NA
28. Information on operating hours of library/reading room	1 2 3 4 5 NA	1 2 3 4 5 NA
29. Direction and operating hours of in-house dining facilities	1 2 3 4 5 NA	1 2 3 4 5 NA
30. Information on operating hours of hotel shuttle services	1 2 3 4 5 NA	1 2 3 4 5 NA
31. City/regional map	1 2 3 4 5 NA	1 2 3 4 5 NA
32. City tour guide brochure (e.g. tour package, etc.)	1 2 3 4 5 NA	1 2 3 4 5 NA
33. Local restaurant/pub guide	1 2 3 4 5 NA	1 2 3 4 5 NA
34. Transportation information (e.g. train schedule, bus route, etc.)	1 2 3 4 5 NA	1 2 3 4 5 NA
35. Direction to local banks (e.g. foreign currency exchange)	1 2 3 4 5 NA	1 2 3 4 5 NA
36. Brochure for local entertainment, attraction, and event information (e.g. flea market, theater, music festival, state carnival, theme park, camping ground, zoos, etc.)	1 2 3 4 5 NA	1 2 3 4 5 NA
37. Brochure for shopping guides (e.g. department store, designer boutique, etc.)	1 2 3 4 5 NA	1 2 3 4 5 NA
38. Museum and art gallery guide	1 2 3 4 5 NA	1 2 3 4 5 NA
39. Health service information (e.g. location of local hospital/clinic, etc.)	1 2 3 4 5 NA	1 2 3 4 5 NA

Section III

1. On your most recent trip to the U.S. did you consider the ISSI (informative service setting items) directions that were provided by the hotel easy to find?

- Extremely easy to find
- Fairly easy to find
- Somewhat easy to find
- Very difficult to find

2. On your most recent trip to the U.S. did you feel that the ISSI provided by the hotel was easy to understand and self-explanatory?

- Extremely easy to understand and self-serve
- Fairly easy to understand and self-serve
- Somewhat easy to understand and self-serve
- Somewhat difficult to understand and self-serve
- Very difficult to understand and self-serve

3. Did the hotel provide these ISSI (informative service setting items) in different language versions?

- No
- Yes

If the hotel provided ISSI in different languages, what were they? (Please select **ALL** that apply)

- Japanese
- Germany
- French
- Korean
- Italy
- Chinese
- Spanish
- Others, please specify _____

4. Do you think having ISSI makes it easy for you to access the services whenever you want?

- Yes
- No
- No opinion

5. Generally, what difficulties have you encountered relative to ISSI in the hotels? (Please select **ALL** that apply)

- Language barriers
- Could not recognize the symbols and signs that the hotel uses
- Unfamiliar with the ISSI that hotel provided

- Could not locate the directions that hotel provides to explain the ISSI
- Misinterpretation the information from hotel employees
- Do not know the reason
- Others, please specify _____

6 Do you think by providing ISSI a hotel improve service quality for customer?

- Strongly agree
- Agree
- Somewhat agree
- Somewhat disagree
- Strongly disagree

7. Do you think hotels providing ISSI would have impact on your decision of hotel-selection?

- Strongly agree
- Agree
- Somewhat agree
- Somewhat disagree
- Strongly disagree

8. Do you think hotels provide ISSI (Informative Service Setting Items) would increase the probability of service performing?

- Yes
- No

9. Do you think hotels providing ISSI would have impact on your recommendation of the hotel to others?

- Strongly agree
- Agree
- Somewhat agree
- Somewhat disagree
- Strongly disagree

10. Do you think hotels providing ISSI increase hotel guest satisfaction?

- Strongly agree
- Agree
- Somewhat agree
- Somewhat disagree
- Strongly disagree

Section IV: Demographics

1. What is your gender?

- Male Female

2. What is your age?

- Under 25 26~35 36~45 46~55 Above 55

3. What is your educational level?

- High school Associate degree (2 years) Bachelor degree (4 years)
 Master degree Doctorate degree Other, please specify _____

4..What is your Professional occupation?

- Hospitality educator/administrator Hospitality industry employee Students
 Business/Financial professional Academic educator/administrator
 Engineering/Sciences professional Service industry professional Homemaker
 Others, please specify _____

5. What is your place of home residency?

- North America South America Europe
 Asia Africa Australia / New Zealand

~ THANK YOU ~

Appendix C
– Institutional Review Board (IRB) Approval –

Oklahoma State University Institutional Review Board

Date: Friday, May 20, 2005
IRB Application No HE0562
Proposal Title: Perceptions of Travelers and Hospitality Educators on Informative Service Setting Items in U.S. Hotels

Reviewed and Processed as: Exempt

Status Recommended by Reviewer(s): Approved Protocol Expires: 5/19/2006

Principal Investigator(s)

Shinyi Lin
800 E. Hall of Fame Ave #512
Stillwater, OK 74075

Lynda Martin
Box 13014-SFA Station
Nacodoches, TX 759623

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.

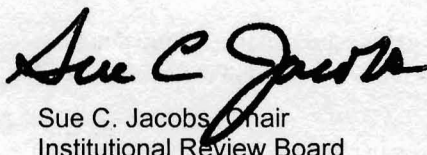
The final versions of any printed recruitment, consent and assent documents bearing the IRB approval stamp are attached to this letter. These are the versions that must be used during the study.

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, emct@okstate.edu).

Sincerely,



Sue C. Jacobs, Chair
Institutional Review Board

VITA

Shinyi Lin

Candidate for the Degree of

Doctor of Philosophy

Thesis: A STUDY OF CUSTOMERS' PERCEPTIONS TOWARDS INFORMATIVE SERVICE SETTING ITEMS IN U.S. HOTEL INDUSTRY

Major Field: Human Environmental Sciences

Biographical:

Education: Received Bachelor of Management Business Administration degree in Statistics from Tam-Kang University in June, 1998; Master of Business Administration degree in Hotel, Restaurant, and Tourism Management from University of New Orleans in August, 2000. Completed the requirements for the Doctor of Philosophy degree with a major in Human Environmental Sciences at Oklahoma State University, Stillwater, Oklahoma, in May 2006.

Experience: Event and Operation Assistant, Hospitality Business Alliance summer program at Oklahoma State University, Summer of 2002. Front Desk Recipient, Ambassador Hotel, Taipei, Taiwan, Spring of 2003. Teaching and Research Assistant, Oklahoma State University, 2001-2004.

Name: Shinyi Lin

Date of Degree: May, 2006

Institution: Oklahoma State University

Location: Stillwater, Oklahoma

Title of Study: **A STUDY OF CUSTOMERS' PERCEPTIONS TOWARDS
INFORMATIVE SERVICE SETTING ITEMS IN U.S. HOTEL
INDUSTRY**

Pages in Study: 167

Candidate for the Degree of Doctor of Philosophy

Major Field: Human Environmental Sciences

Scope and Method of Study: The purpose of this study was to uncover how the hotel ISSI(informative service setting items) were being perceived by hotel customers, and how these perceptions affect customers' satisfaction and their hotel-selection decision. Thus, the research design for this study was a cross-sectional descriptive research that investigated customers' perceptions of ISSI. An online survey was conducted. Data analysis in this study included the following techniques: frequency, compared-means, independent t-test, Analysis of Variance (ANOVA), Importance-Performance Analysis (IPA), Factor analysis, and Multiple Regression Analysis.

Findings and Conclusions: Importance-Performance Analysis (IPA) was employed to compare the overall perceived ISSI Hospitality educators and hotel customers differed in their *importance* rating of ISSI attributes ($t = -2.012$, $df = 254$, $p < 0.05$) and also in their *performance* rating ($t = -1.65$, $df = 254$, $p < 0.05$). Western customers and Asian customers also differed in both *importance* rating ($t = -3.462$, $df = 254$, $p < 0.01$) and *performance* rating ($t = -3.665$, $df = 254$, $p < 0.01$) of ISSI attributes. Also, this study identified six underlying ISSI factors that have influence on customers' satisfaction level, their future recommendation, and their hotel-selection decision. The regression model in this study revealed that the six factors appeared as significant independent variables to three major dependent variables.

ADVISER'S APPROVAL: Dr. Hailin Qu
