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Customers' perceptions of picture presentations on hotel Web sites

Ji-Young Choi

Iowa State University

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Customers' perceptions of picture presentations on hotel Web sites

by

Ji-Young Choi

A thesis submitted to the graduate faculty
in partial fulfillment of the requirements for the degree of

MASTER OF SCIENCE

Major: Hotel, Restaurant, and Institution Management

Program of Study Committee:
Miyoung Jeong, Major Professor
Haemoon Oh
Ann Fiore

Iowa State University
Ames, Iowa
2002

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This is to certify that the master's thesis of

Ji-Young Choi

has met the thesis requirement of Iowa State University

Signatures have been redacted for privacy
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CHAPTER 1. INTRODUCTION

The development of Web technology has helped advanced world businesses into the age of electronic commerce (EC), which welcomes customers from all over the world without physical and geographical barriers. Meanwhile, the Internet is dramatically changing the way people search for information, communicate, make decisions, and purchase their goods and services.

Accessibility to the huge amount of information available on the Web has made possible the rapid sharing of information between businesses, between businesses and their customers, and within different departments of a company (Shaw, Gander, and Thomas, 1997). This ubiquitous nature of the Web has established it into a powerful and effective marketing tool. The Internet or the Web has created the platform for new business models that enable organizations to expand relationships with their customers, decrease operating expenses, and improve productivity and service quality.

The Internet and its Impact

The Internet is a conglomeration of more than 10,000 computer networks linking academic institutions, commercial firms, government organizations, and private individuals across the world (Standing, 2000). Presently, approximately 250,000 commercial Web sites are present on the Internet providing customers with a marketplace for their information search for products and services and online transactions. In 1995, it was reported about 40 million people regularly used the Internet (Top Rankings, 2000). Within just half a decade, the number of regular Internet users has reached to 130.6 million people (Pastore, 2000).
Industry analysts have estimated that the number of Internet users is increasing by 1 million every month (McLaren, 1999). Bell and Tang (1998) commented that it took the Internet 3 years to reach 50 million users, as compared to 38 years for the radio and 13 years for the television. As shown in Figure 1-1, the world Internet population was more than 242 million in January 2000. Nearly half of the users are from the United States (U.S.) and Canada. Europeans accounted for almost one third of users. Angus Reid Group (2000) forecasted that at the current rate of growth there would be 1 billion Internet users by the year 2005.

The rapid advances in Web technology and the growing popularity of the Internet has made Internet shopping into the next revolution in direct marketing (Jones and Vijayasarathy, 1998). A commercial Web site is not only where a company provides information about its products and services, but also where commercial values for making profits are created.
Directors of sales and marketing at independent and franchise companies can gain insights into customers’ buying habits and preferences when they recognize the Web as an integral part of their marketing and distribution strategies.

Online sales volume and revenues have been accelerated as more products and services are available on the Internet (Rao, 2000). Internet shopping is becoming a well-accepted way to purchase many kinds of products and services, including electronics, clothing, flowers, books, housing and travel. In 2000, retail Internet sales in the U.S. were estimated to be more than $900 billion (Rao, 2000) and more than $10 billion is expected to be generated by online bookings by 2003 (Eslick, 1999). The majority of companies that offer Internet access provide customers with a convenient and inexpensive way to become a patron of the Internet community.

Research (Sheldon, 1997) has shown that travel is one of the most popular products sold over the Internet. Travel products such as transportations, hotels, restaurants, and attractions are in continual demand with today’s society. In today’s fast and increasing pace of modernized society, time has become more of a commodity than something many people have much of to spare. Due to this greater value and also limitations on time, there are more needs for travel customers to know about and make plans for their destination before taking trips (Sheldon, 1997; Werthner and Klein, 1999).

Over 900 million travel bookings were made online in 1999 and booking volumes are predicted to climb significantly over the next five years. In the mean time, within a single year, over $2 billion were spent on online bookings for airline tickets and hotels. Industry Association America (1999) estimated that by 2002, between 6% and 10% of all travel reservations would be generated via the Web. Internet transactions are believed to be faster,
easier, and more convenient for customers, compared to contacting travel agents or suppliers directly. Revenues of online travel sales were projected to increase 440% between 1997 and 2000. Online reservations via the Internet have become a dominant way of travel distribution (Tourism Industries of America, 2000).

The Internet in the Lodging Industry

The lodging industry is especially considered a leader in online sales. Hotels have been attempting to establish their brand names and enlarge their market segments through the Internet. As multimedia capabilities such as audio and virtual reality are incorporated into Web sites, it will become easier to describe products and services of hotels to potential customers.

At present, many hotels have introduced online reservation systems so that Internet users can purchase rooms directly via the Internet. Well-designed online reservation service has become a crucial way for hotels to communicate with potential customers by delivering appropriate information to meet customers’ needs before their purchase. As a result, the volume of online hotel reservations has nearly doubled annually over the past three to four years. The American Hotel and Motel Association (AHMA) had expected online transactions in the lodging industry to reach $2.9 billion by 2001 (Tourism Industry of America, 1999).

In the past several years, hotels have invested in the development of distribution technology. For instance, as hotels were searching for complementary products to increase sales volumes, hotel rooms were among the first products to be added to the expanded Global Distribution System (GDS). The use of Internet technologies in the hotel industry has been
accelerated since the mid-1990s. By the end of 1996, 20 of the world's top 25 hotel chains had established a clear presence on the Web (Ayano and Hird, 1997).

Hotel industry publications and trade journals are now focusing on current developments in EC. Key issues include impact of the Internet on the choice of hotels as the most effective distribution channel to meet companies' needs, decrease distribution costs, satisfy customer needs, and improve brand loyalty. The industry's first attempts on the Internet included creating electronic brochures, followed by bookings of hotel rooms, and finally moving to more complex group bookings which included linking a reservation to a group block, various types of meetings, meeting room layout, meal planning, amenities, billing, rate structures, and room lists.

Although many hotels have established their own Web sites to attract and retain customers, the impact of a hotel Web site on customers' purchase behavior has not been reported in the literature. Several studies (Strader and Shaw, 1997; Dholakia and Rego, 1998; Gehrke and Turban 1999; Rowley, 2000; Sawyer, Greely, and Cataudella, 2000) have examined the quality of information on Web sites. Major attributes to measure the quality of information included relevancy, accuracy, timeliness, and completeness of the information provided. These attributes, however, pertain to text-based information rather than effects of graphics or pictures used on the Web.

**Purpose of this Study**

Despite continuous developments in Web-supported multimedia technology, little research has addressed the effects of Web pictures on customers' purchase behavior. Thus, this study aims to identify how customers perceive pictures on the Web and to measure the
effects of different picture presentations on customers' purchase behavior. Specifically, this study attempts to:

1. Determine the impact of different picture presentation formats, picture contents, and reality of pictures on customers' purchase decisions,
2. Identify customers' attitudes toward different picture presentations on the Web,
3. Develop a conceptual framework for measuring effects of different Web picture presentations on customers' purchase decisions, and
4. Provide the lodging industry with a basic guideline of presenting pictures of its products and services on the Web.

The goal of this study is not only to identify customers' needs on the Web, but also to help hotels improve or develop their Web sites based on customers' needs. It may help hotels achieve better relationships with customers and increase their sales volumes. In terms of developing more effective marketing strategies, the effort to research the effects of pictures on hotel Web sites may be a unique contribution to the industry.

Following, Chapter 2 will review previous studies related to the role of pictures in advertising and picture presentations of hotels' current Web sites. Chapter 3 will describe the study subjects, experiment design, measurement, study instrument, and data analysis. Chapter 4 will discuss the results of the study. Finally, chapter 5 will summarize this research and provide limitations, implications, and recommendations for future research.
Definition of Terms:

**Format of picture presentation:** the feature of picture presentation on the Web site. In this study, there are several formats to show pictures on the Web site. They are picture presentation with text on the same page and separate links for picture presentations in the format of slide show or video.

**Content of picture presentation:** the areas about pictures showed on the Web site. For instance, they are pictures about bedroom, restaurant, lobby, or other hotel facilities in this study.

**Realism of picture presentation:** the degree of realism that customers can feel from the pictures on the Web site. In particular, the realism of pictures refer to whether or not people appear in the pictures of the Web.
CHAPTER 2. LITERATURE REVIEW

Hotels have enjoyed the use of the Internet as an information distribution and revenue-generating channel (Connoly, Olsen, and Moore, 1998). Since relevant information could be accessed via the Internet anytime and anywhere, the Internet has become an important way for companies to communicate with customers. Travelers could easily visit the Web sites of hotels and destinations and complete the reservation procedures from their own home or office.

The Web has generated a boundless environment allowing individual customers to visit companies' full-color virtual catalogues, to complete on-screen reservation forms, and to provide feedback on products or services (Berthon, Pitt, and Watson, 1996). In 1994, the initiation of the TravelWeb set up a central Web site for lodging companies to provide prompt information on products and services for customers (Bakers, 1995). With the continued growth of Internet businesses, hotel sales representatives predicted that 20% of total annual bookings would be made via the Web by 2005.

Web as Marketing and Advertising Tool

Hospitality studies on the Internet had focused on its marketing and advertising values. Murphy, Forrest, Worting, and Brymer (1996) identified the Internet as a potential hotel marketing medium by creating direct and interactive communication channels between customers and hotels. The online capability of the Internet would be a new way for hotels to build strong relationships with customers by satisfying their needs. Thus, the Web could be a major tool for of external communication, advertising, and marketing, as well as internal
management. According to the Direct Marketing Association (2000), direct marketing generated $1.7 trillion of U.S. sales in 2000 and would generate $2.7 trillion by 2005. Direct marketers’ Web-driven sales were estimated at $24 billion in 2000 and were projected to reach $136 billion in five years.

In the meantime, the Web had become one of the most effective advertising tools, continually addressing the business environment to customers by providing timely information and quick response. In particular, several researchers (Alesandrini and Sheikh, 1983; MacInnis and Price, 1987) indicated that pictures are valuable to understanding the impact of advertising messages.

Picture advertising has always played a dominant role of print advertising (Edell and Staelin, 1983) in (1) drawing customers’ attention; (2) providing brand information to customers; (3) showing how a product is used and who use it; and (4) creating a brand image (Unnava and Burnkrant, 1991). Leong, Ang, and Tham (1996) stated that pictures are more memorable and easier to evoke an image about products and services in consumers’ minds than text.

Pictures are encoded as imaginal codes with verbal codes in the memory while texts are represented by only verbal codes. The ease of formation of dual codes for pictures in comparison with words results in the ‘picture superiority effect’ (the superior memorability of pictures over words) because the greater number of memory codes for pictures act as multiple retrieval sources to those visual information. In addition, pictures including non-verbal cues and visual reinforcement have been suggested to produce superior learning and to be more persuasive than text (Stewart, Hecker, and Graham, 1987). For example, more than
50% of advertisement response variability has been related to nonverbal factors such as pictures, sounds, and smells (Hecker and Stewart, 1998).

Advertising has also played the most important role in tourist destination-marketing strategies (Manfredo, Bright, and Haas, 1992). According to Manfredo et. al (1992), when people decide to take a trip, more than 55% of them are most likely to be influenced by advertising on their destination decision. Since pictures could provide effective visual images and conditions of products and services for customers, they could be considered as the most important communication tool for destination images. Pictures not only present the destinations but also communicate attributes, characteristics, concepts, values, and ideas about the destinations. Pictures are better recalled and greatly affect customers' attitudes toward both brands and products.

However, there has been limited research on the pictorial aspect of tourism destination advertising (MacKay and Fesenmaier, 1997; Laskey, Seaton, and Nicholls, 1994; Olsen, McAlexander and Roberts, 1986; Weaver and Mc Cleary, 1984), especially its implications on Web sites. Laskey et al (1994) research on the use of pictures in travel agency advertising found that pictures improved effectiveness (i.e. improved the customers' attitudes toward the ad and the agency) of informational advertisements.

However, Leven (1998) claimed that the Web was still in need of user-friendly functions to efficiently guide customers to the information they are seeking. Most text-oriented information on the Web might distract customers' attention and interest from the search. In terms of graphics, McNulty (1999) mentioned that the most significant factors are the size and the color depth of the image with regard to downloading time of graphics when designing an advertisement Web page. The most common complaint about the Web was the
lengthy downloading time of Web pages containing large number of graphical images (Taylor, 1999). In general, large size images or high-resolution pictures require much longer time to download. Yoder (1999) claimed that the number of graphic images on a page was also a crucial factor to affect the downloading time. Although graphics aimed to make a Web page more attractive and draw customers' interest, too many graphical images appeared to have an opposite effect. For every 15 seconds it took for the graphics to be loaded before the complete Web page contents could be viewed, there was a risk of losing 20% of the customers (Taylor, 1999). If more than 18 seconds are required for each graphics to be loaded on a Web page, it is highly recommended that the contents of the Web page be arranged into multiple pages (Howe, 1999). Since quality of access and content in both text and graphic information are essential factors for the success of hotel Web sites (Schmid and Lindemann, 1998; Scherlter, 1994), Web sites should maintain a reasonable balance between the two.

Analysis of Online Customers

U.S. online advertising spending was around $5 billion and is expected to increase up to more than $20 billion by 2004 (Lake, 1999). Since significant costs are associated with setup and maintenance of Web sites ($180,000/year according to the Association of National Advertisers, 1999), evaluation of customer’s needs is not only financially beneficial but is also critical for the success of EC business.

Donthu and Garcia (1999) have found that Internet shoppers were relatively older in age and have a higher income than Internet non-shoppers. Internet shoppers were more convenience-seeking, innovative, impulsive, variety-seeking, and less risk-averse than non-
Internet shoppers. They were also less brand and price conscious than non-Internet shoppers. Internet shoppers also have more positive attitudes toward advertising and direct marketing than non-Internet shoppers.

Researchers (Strader and Shaw, 1997) identified Internet shoppers into three different categories based on their shopping behavior: Impulsive buyers, those who are less critical and purchased products quickly; patient buyers, those who purchased products after making some comparisons; and analytical buyers, those who do substantial research before making purchase decisions. In addition, there are also window shoppers, those who just browsed on the Web.

In marketing aspects, MaLare (1999) categorized shopping experiences into two dimensions based on shoppers' characteristics: utilitarian, regarding shopping activities as completing tasks, and hedonic, regarding shopping as an enjoyment. Usually, information quality, downloading time, accessibility, and navigation to other links were important attributes for utilitarian customers on deciding to stay longer and to go through purchase procedures or not. Hedonic customers are more influenced by layout design, color contrast, sensibility of multimedia, and personal involvement, such as games, chat rooms, as well as functional attributes on Web sites. Clearer understanding of each shopper's characteristics could provide insight into many EC purchase behavior that would be useful in the designing of commercial Web sites.

Figure 2-1 shows an online consumer population in the U.S. The number of people utilizing the Internet in planning their travels has increased during the past several years. The customers who purchased travel products online were younger than the average age of the
traveling population. The online-travel buyers also take 3% more trips than non-online buyers. Planning travels online is also growing up quickly.

![Figure 2-1. Online Purchase Population ("Hospitality directions," July, 1999.)](image)

According to Tourism Industries of America (1999), there was over a 1,500% increase in online travel planning during the past three years. In terms of gender of U.S. shoppers, men were still the dominant users of the Internet (61.3%) (“GVU’s WWW User Survey”, 1999). However, while women are shopping less on the Web, they are doing the majority of the shopping offline. In addition, the number of women shoppers continues to increase. Women were about 52% of Internet users who had been online for less than one year (Martinez, 1999). However, there were no significant differences between men and women in terms of online shopping behavior.
Analysis of Hotel Web Sites

The Web has served as a hotel’s communication tool of learning customers’ expectations and needs and measuring customer satisfaction of their hotel experience. At present, 82 percent of luxury hotels and 76 percent of upscale hotels use the Internet to receive online bookings compared to 68 percent of mid-priced hotels and 54 percent of economy hotels, while 33 percent of budget hotels use the Internet to take reservations (Lodging Hospitality, 2000). Chain-affiliated hotels have typically adopted and utilized more technologies than independent hotels (Siguaw, Enz, and Namasivayam, 2000). Major well-known hotels such as Marriott, Hilton, Best Western, Embassy Suites, Extended Stay America, Hyatt, Sheraton and Wyndham are the earliest benefactors of Internet reservations.

Marriott International, Inc., was one of the pioneers in Web-based reservations, launching its first Web site in 1995. In March 2000, Starwood Hotels and Resorts Worldwide announced the use of Internet Pictures Corporation (iPIX) as its solution of visual content for its Web site. According to Doug Stone, vice president of interactive marketing at Starwood, the Internet had emerged as an important facilitator of EC strategies for the hotel industry. Starwood believed that iPIX would enable the organization to leverage the power of the Internet by adding rich visual content to its Web site and travel portals. It would also improve the online presence of a hotel by sending the better visual content to customers and travel agents.

The graphical interface of the Internet allows customers to look at pictures of hotel rooms and the surroundings. The ability for customers to see actual hotel rooms and surroundings could be a powerful marketing tool as customers could visualize the rooms in which they would prefer to stay. In addition, by researching product and pricing options
through the Web, customers are more in control of the purchase decision process, which enables customers to make decisions more easily.

Similar to a traditional way of business marketing, the ultimate goal of an Internet business was also to find what the customer needed in the EC environment. If a hotel understood what information customers were looking for on the Internet and provided value-added information to them, it could better attract customers to the Web site as well as to the hotel. Many hotels, however, were struggling to identify factors that affect customers’ purchase behavior on the Web. Information quality and Web design could be critical factors that researchers should concentrate on if hotels provided equivalent room rates and services. In particular, different picture presentations on the Web might affect customers’ purchase behavior because pictures can more effectively present the environment and qualities of hotels.

**Content Analysis of Current Hotel Web Sites**

In order to capture the current trends of picture presentations on hotel Web sites, 203 hotel Web sites in New York City (NYC) were selected to analyze and evaluate their contents. The hotel list was obtained from several mega travel Web sites, such as travelocity.com and expedia.com. The main reasons for choosing these 203 hotels in NYC are; first, the online reservation rate in NYC ranked the second in the U.S. after Orlando. Most hotel reservations in Orlando are believed to be more for leisure, while hotel reservations in NYC were for both business and leisure purposes. Second, hotels in NYC contained various segmentations, such as chains, independents, with different levels of services. The content analysis was conducted from October 8 to 13, 2001. Since Web sites
were updated periodically, data were collected at the same period of time in order to receive consistent information. The same computer, the same Internet Service Provider (ISP), and the same Internet browser were used throughout the data collection process.

Figure 2-2 shows the sample hotels with different levels of service. First of all, the hotels were categorized into chain and independent hotels based on their ownership. Then, they were categorized by luxury, upscale, middle scale, and budget or economy hotel ratings by their levels of service. Almost 60% (122 out of 203) of hotels were independent hotels. The largest group was budget/economy-independent hotels, accounting for slightly more than 25% of hotels in NYC, followed by middle scale-independent hotels (21.7%), upscale-chain hotels (13.8%), upscale-independent hotels (11.9%), and middle scale-chain hotels.

![Figure 2-2. Hotel Distribution with Different Levels of Service](image)
Nearly 40% of hotels had six to ten pictures on their Web sites. A third had less than five pictures and slightly less than 25% had more than ten pictures on their Web sites. Five percent of hotels had no picture on their Web sites.

Figure 2-3 illustrates the different areas of the hotels that were selected to be displayed on hotel Web sites. For both chain and independent hotels, the majority of pictures on their Web sites were bedroom pictures, followed by pictures of lobby, the exterior, restaurant, meeting rooms and lounge. Especially, in the attempt to make customer feel more comfortable and secured about staying in a hotel, more than one third of the hotels used hotel pictures that included their guests or staff members.

Figure 2-4 indicates different formats for picture presentation between chain and independent hotels. The various formats of picture presentation basically consisted of
pictures with text and separate link or section for pictures. The separate sections for picture presentation can be categorized as picture gallery, slide show, 360° virtual tour, or video. More than half of hotel Web sites (55%) had separate sections for picture presentation. Among them the largest group was picture gallery (17.2%), followed by slide (12.3%), virtual tour (6.9%), and video (2.5%). Chain hotels used more slide pictures or video shows than independent hotels, while independent hotels used more picture gallery and text with pictures than chain hotels.

![Figure 2-4. Different Formats of Picture Presentations on the Web by Hotels' Ownership](image)

Conceptual Framework and Propositions for the Study

Pictures can relate to the attractiveness and hospitality of a hotel more effectively than text information in the printed advertisement. Therefore, understanding customers' behavior and reaction to not only the text information, but also the visual details of a hotel Web page would be an important key in successful hotel marketing to the customers.
It would be important to study and to identify the impact of picture information on the Web. Customers' purchase behavior would also be believed to be significantly affected by the picture presentations of a Web site. Since little relevant research has been explored the impact of Web pictures on customers' behavior and decision making, six exploratory propositions have been developed in this study based on the content analysis.

**Picture Presentation:** Prior to developing the study propositions, several parameters should be established to measure the impact of pictures on customers’ purchase behavior regarding their size, number, and location of the images. Since the size and number of pictures on the Web are related to downloading time, keeping a balance between usages of pictures and downloading time would be the best suggestion to companies when designing Web sites. On the other hand, Murphy (1999) found that there was no significant impact on location of pictures on the Web such as right vs. left or top vs. bottom. Thus, this study would concentrate on the effects of differences in Web picture presentations. Based on content analyses three constructs, format, content, and realism of the picture presentation, were developed as major factors in the different basic layout of a Web site.

*Proposition 1:* Separate picture presentations, such as in a slide format, are more positively associated with customers’ attitudes toward the Web site than picture presentations with texts.

*Proposition 2:* Pictures of various areas (i.e. bedroom, lobby, restaurant) presented on the Web are more positively associated with customers’ attitudes toward the Web site than pictures shown of only one area.

*Proposition 3:* Pictures including people (i.e. lobby area with staff members or
guests) presented on the Web are more positively associated with customers’ attitudes toward the Web site than pictures without people.

**Attitude**: Customers’ attitudes toward the Internet were generally constructed with combined effects of attitudes toward outcomes, social pressure, and perceived behavioral control (Klobas, 1995). In this study, attitudes toward outcomes refer to customers’ attitudes toward using information of picture presentations to make their purchase decision. Perceived behavioral control implies to the extent which customers believe their control over using information of picture presentations for their actual purchase decision. The effects of format, content, and realism of the picture presentations on hotel Web sites could be measured by customers’ overall attitude toward the Web sites.

**Intention**: Customers’ purchase decisions begin with their assessment of necessary information such as cost, accommodations, and locations (Jeong and Lambert, 1999). According to Zeithaml, Berry, and Parasuraman (1996), customers tend to build positive behavioral intention regarding the actual purchase of the product or service when the perceived service quality meets their expectations. In this study, customers’ intention to make their purchase decisions via the Internet was believed to form after evaluating the Web information and having established a positive or negative attitude toward it.

**Recommendation**: After the customers have experienced the Web sites and formed their intention to purchase the product and service, they are also believed to establish willingness to recommend a hotel Web site to others like friends, coworkers or families. Therefore, customers’ recommendations of the Web sites might be another good way to measure their attitudes toward Web sites.

**Proposition 4**: Customers’ attitudes are positively associated with their purchase
intention.

*Proposition 5:* Customers' attitudes are positively associated with their recommendations of Web sites to others.

*Proposition 6:* Customers' purchase intention is positively associated with their recommendations of Web sites to others.

Based on the study propositions established, a conceptual framework was developed (See Figure 2-5). There are three constructs – format, content, and realism - that are believed to influence on customers’ attitudes toward the Web site. Eventually, these attitudes made by three constructs would be tested the relationships with purchase intention and recommendation.

![Figure 2-5. A Conceptual Framework to Measure the Impact of Web Picture Presentations on Customers' Purchase Behavior](image)
CHAPTER 3. METHODOLOGY

This chapter describes the methods used for this study. It consisted of study subject, experimental design, measurement, data collection, and data analyses. First, sampling process was presented in the study subject section. Second, experimental design and instrument included the ways to measure the constructs of the conceptual framework. Third, data collection including the steps of collecting data was followed. Finally, the details of data analyses were described in the data analyses section.

Study Subject

**Phase I.** A pilot test was conducted to check clarity, face validity, relevancy, and wordings of the questionnaire with 32 undergraduate students who were potential customers for online reservations. They enrolled in a large mid-western University.

**Phase II.** Subjects of this study were undergraduate students enrolled in the same university. According to Oh (2000), several reasons supported the use of a student sample: a relatively homogeneous sample induces higher internal consistency by minimizing potential experience effects. Oh (2000) also stated that students are likely to be active Internet users in making future online hotel reservations.

Experimental Design

A 2 x 2 x 2 between subjects design was employed for the format of picture presentation, picture content, and picture realism treatment variables. To test the first three
propositions, eight Web pages were designed to provide the effects of pictures on Web pages. Each factor was presented as one of two conditions, labeled as high or low, resulting in the eight possible combinations (See Table 3-1).

Table 3-1. The Eight Hypothetical Hotel Web pages

<table>
<thead>
<tr>
<th>Web Site</th>
<th>Label</th>
<th>Way of Picture Presentations</th>
<th>Content of Pictures</th>
<th>Reality of Pictures</th>
</tr>
</thead>
<tbody>
<tr>
<td>Site 1</td>
<td>HHH</td>
<td>H</td>
<td>H</td>
<td>H</td>
</tr>
<tr>
<td>Site 2</td>
<td>HHL</td>
<td>H</td>
<td>H</td>
<td>L</td>
</tr>
<tr>
<td>Site 3</td>
<td>HLH</td>
<td>H</td>
<td>L</td>
<td>H</td>
</tr>
<tr>
<td>Site 4</td>
<td>HLL</td>
<td>H</td>
<td>L</td>
<td>L</td>
</tr>
<tr>
<td>Site 5</td>
<td>LHH</td>
<td>L</td>
<td>H</td>
<td>H</td>
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<tr>
<td>Site 6</td>
<td>LHL</td>
<td>L</td>
<td>H</td>
<td>L</td>
</tr>
<tr>
<td>Site 7</td>
<td>LLH</td>
<td>L</td>
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<td>Site 8</td>
<td>LLL</td>
<td>L</td>
<td>L</td>
<td>L</td>
</tr>
</tbody>
</table>

a H: separate section for picture presentations (i.e. slides, video), L: pictures with texts
b H: pictures of various areas (i.e. bedroom, restaurant), L: pictures of one area
c H: pictures with people (i.e. lobby with guests), L: pictures without people

Basically, neutral color was used as the background color of the Web pages. An effort to reduce a color contrast between background and frame design was also made to minimize possible distractions from color effects. In order to more specifically measure the effect of the picture presentation, text information describing the hotel was presented using simple and monotonous words. Aside from the different picture presentations, all other conditions of eight Web pages, such as font, text information, and color were the same.
Based on the results of pilot test, every picture in this study was valid to represent the same level of a hotel. In addition, the same pictures were used under the same combination of constructs.

The hypothetically designed hotel Web pages were presented to subjects, with each subject was directed to view one of the eight Web pages. The subjects required varying amounts of time to download and navigate the Web sites due to differences in numbers and presentations of pictures on different Web sites. Subjects were asked to complete the questionnaire after visiting the assigned Web site.

Instrument

The questionnaire was composed of three parts: demographic information, Web page evaluations, and attitudes toward the Web site. Six demographic questions were developed to identify the study subjects. Three questions were used to determine the subject's familiarity and amount of usage of the Internet, such as “how many hours are spent for using the Internet per week,” and also the subject’s online shopping experience.

**Picture presentations:** Fifteen questions were developed to measure customers’ perception on Web picture presentations: “completeness of information on the Web site,” “responsiveness of the Web site,” “comprehensiveness of information on the Web site,” “detail information of the Web site,” “knowledge of other customers’ use of the hotel based on the Web site,” “role of the Web site as an indicator of fitness with customers’ purpose to stay,” “similarity of effects between checking the Web site and visiting the hotel,” “usefulness of information on the Web site,” “consistency with how I see myself through this
Web page,” “consistency with how others see me,” and three manipulation questions for each treatments. The manipulation questions referred to any “link for pictures,” “pictures of various areas in the hotel,” and “pictures including people.” Each item was measured with a seven-point Likert scale from ‘1’, representing ‘strongly disagree’ to ‘7’, representing ‘strongly agree.’

**Attitude:** Seven questions were developed to measure customers’ attitudes toward the Web. A seven-point semantic differential scale was used to measure each question. The questions were to determine the response of the subject as to whether “visiting the Web site was enjoyable or not,” “using the Web site was difficult or easy,” “obtaining information via the Web site was useless or useful,” “obtaining information via the Web site was helpless or helpful,” “obtaining information of the hotel by the Web site was inefficient or efficient,” and “searching information on the Web site was uninteresting or interesting”. One question also asked about the likeliness of the subject’s desire to actually make a hotel room reservation based on the observed Web page.

**Intention:** Intention and recommendation to use the Web or an online reservation system could predict the actual use of the Web site directly and indirectly. Two items were developed to measure intention to make purchase decisions. A seven-point scale from 1, very unlikely, to 7, very likely, was used to measure each question. Items to measure intention were “willingness/unwillingness to visit this Web site for obtaining information” and “willingness/unwillingness to use this Web site for making a room reservation.”

**Recommendation:** Two items were developed to measure recommendations; “willingness or unwillingness to recommend that others visit this Web site for obtaining information” and “willingness or unwillingness to recommend that others use this Web site
for making room reservations.” A seven-point semantic differential scale from 1, very unlikely, to 7, very likely, was used to measure each question. A copy of the questionnaire is included in Appendix A.

Data Collection

A self-administered questionnaire was employed along with the eight hypothetical Web pages. The Web pages were placed on the server of the College of the Family and Consumer Sciences.

First, the faculty and human subject review committee approved the questionnaire of this study. Second, 560 students were contacted in this study and asked to visit the assigned Web page before answering the questionnaire and directed to complete the questionnaire.

Before subjects started browsing the Web site, they were asked to read the direction carefully. Sixty percent of the questionnaires were distributed by visiting classes and the rest by visiting computer labs. Seventy subjects were assigned to evaluate one of the eight different Web pages. Distribution and collection of the questionnaires were conducted from February 18 to March 8, 2002.

Data Analysis

Data were coded and analyzed using the Statistical Package for Social Sciences (SPSS for Windows 10.0). First, frequencies were obtained for all the variables to detect possible outliers and to obtain means and standard deviations for all the demographic items.
Second, the factor analysis was employed to identify a factor structure of respondents' attitudes toward the Web site. Then, ANOVA and t-test were used to test the propositions in this study. Finally, multiple regression analyses were performed to determine the relationships between variables in the conceptual framework of this study.
CHAPTER 4. RESULTS

This chapter presents the results of data analyses. First of all, sample characteristics are discussed followed by relationships between sample characteristics and picture presentations on Web sites. Second, the results of testing study propositions are addressed after the results of manipulation check of three constructs. Finally, the conceptual framework in this study is evaluated based on data analyses.

Sample Characteristics of the Subjects

Five hundred sixty questionnaires were randomly distributed to evaluate the eight Web pages. Of the 560 subjects, 364 questionnaires were collected, resulting in a 65% response rate. The number of responses to each Web page is almost evenly balanced as shown in Table 4-1.

Table 4-1. The Number of Subjects of the Eight Hypothetical Hotel Web pages (n = 364)

<table>
<thead>
<tr>
<th>Web Site</th>
<th>Label</th>
<th>No. of Subjects (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Site 1</td>
<td>HHH</td>
<td>51 (14.0)</td>
</tr>
<tr>
<td>Site 2</td>
<td>HHL</td>
<td>47 (12.9)</td>
</tr>
<tr>
<td>Site 3</td>
<td>HLH</td>
<td>43 (11.8)</td>
</tr>
<tr>
<td>Site 4</td>
<td>HLL</td>
<td>45 (12.4)</td>
</tr>
<tr>
<td>Site 5</td>
<td>LHH</td>
<td>47 (12.9)</td>
</tr>
<tr>
<td>Site 6</td>
<td>LHL</td>
<td>44 (12.1)</td>
</tr>
<tr>
<td>Site 7</td>
<td>LLH</td>
<td>41 (11.3)</td>
</tr>
<tr>
<td>Site 8</td>
<td>LLL</td>
<td>46 (12.6)</td>
</tr>
</tbody>
</table>
The characteristics of the subjects are summarized in Table 4-2. There were more female (212, 59%) than male (149, 41%) subjects. The largest age group was between 19 and 22 years old (59%), followed by those over 25 years old (20%).

<table>
<thead>
<tr>
<th>Table 4-2. Sample Characteristics</th>
</tr>
</thead>
<tbody>
<tr>
<td>Subjects Characteristics</td>
</tr>
<tr>
<td>Gender</td>
</tr>
<tr>
<td>Female</td>
</tr>
<tr>
<td>Male</td>
</tr>
<tr>
<td>Age</td>
</tr>
<tr>
<td>Under 19</td>
</tr>
<tr>
<td>19-22</td>
</tr>
<tr>
<td>23-25</td>
</tr>
<tr>
<td>over 25</td>
</tr>
<tr>
<td>PC Ownership</td>
</tr>
<tr>
<td>Yes</td>
</tr>
<tr>
<td>No</td>
</tr>
<tr>
<td>Time on Internet per Week (Hours)</td>
</tr>
<tr>
<td>0-9</td>
</tr>
<tr>
<td>10-19</td>
</tr>
<tr>
<td>20-29</td>
</tr>
<tr>
<td>30-39</td>
</tr>
<tr>
<td>over 40</td>
</tr>
<tr>
<td>Online Shopping Experience</td>
</tr>
<tr>
<td>Yes</td>
</tr>
<tr>
<td>No</td>
</tr>
<tr>
<td>Times for Online Shopping in Year 2001</td>
</tr>
<tr>
<td>0</td>
</tr>
<tr>
<td>1-4</td>
</tr>
<tr>
<td>5-9</td>
</tr>
<tr>
<td>Over 10</td>
</tr>
</tbody>
</table>
Two hundred and ninety four (81%) subjects owned a personal computer. In terms of time spent on the Internet, 39% of subjects reported 10 to 19 hours a week spent on the Internet. Eighty one percent of the subjects had online shopping experiences. Among the subjects with online shopping experiences, 158 (43%) subjects shopped online 1 to 4 times in the year 2001, 19% over 10 times, and 17% between 5 and 9 times in the year 2001.

Relationships between Demographic Characteristics and Attitudes toward Web sites

t-test for categorical questions such as gender and ANOVA analyses for multiple-choice questions such as age were employed to identify whether the picture presentations differed based on demographic characteristics of the sample. As shown in Table 4-3, there were slight differences in the mean scores of each characteristic. However, there were no statistically significant differences among sample characteristics with picture presentations on the Web.

Table 4-3. Relationships of Picture Presentations on the Web with Sample Characteristics

<table>
<thead>
<tr>
<th></th>
<th>Format of picture presentations</th>
<th>Content of picture presentations</th>
<th>Realism of picture presentations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>149</td>
<td>.52</td>
<td>.53</td>
</tr>
<tr>
<td>Female</td>
<td>212</td>
<td>.51</td>
<td>.51</td>
</tr>
<tr>
<td>Age</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Under 19</td>
<td>18</td>
<td>.56</td>
<td>.72</td>
</tr>
<tr>
<td>19-22</td>
<td>217</td>
<td>.47</td>
<td>.55</td>
</tr>
<tr>
<td>23-25</td>
<td>53</td>
<td>.55</td>
<td>.40</td>
</tr>
<tr>
<td>Over 25</td>
<td>73</td>
<td>.63</td>
<td>.48</td>
</tr>
<tr>
<td>Online shopping</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Experience</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>294</td>
<td>.53</td>
<td>.54</td>
</tr>
<tr>
<td>No</td>
<td>64</td>
<td>.45</td>
<td>.45</td>
</tr>
</tbody>
</table>

a. t-values (p < .05)
b. b. F value from one-way ANOVA
Manipulation Check

A series of t-tests were performed to check the effects of manipulation of three treatments; format, content, and realism of picture presentations (See Table 4-4). Results showed that the manipulation of the three variables provided the desired treatment effects that were statistically significant at the significance level of .05.

Table 4-4. Results of Manipulation Check

<table>
<thead>
<tr>
<th>Manipulated Variable</th>
<th>n</th>
<th>High (N)</th>
<th>Low (N)</th>
<th>t value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Format of Picture Presentations</td>
<td>364</td>
<td>5.81(186)</td>
<td>2.42(178)</td>
<td>-18.84*</td>
</tr>
<tr>
<td>Content of Picture Presentations</td>
<td>363</td>
<td>5.37(188)</td>
<td>2.70(175)</td>
<td>-15.37*</td>
</tr>
<tr>
<td>Realism of Picture Presentations</td>
<td>364</td>
<td>5.96(182)</td>
<td>1.49(182)</td>
<td>-31.89*</td>
</tr>
</tbody>
</table>

* significant at p < .05

Tests of study propositions

1. Dependent Variables

Attitude: Since the seven questions were used to measure attitude, a factor analysis was conducted to identify an underlying construct of respondents' attitudes toward a Web site. The result shown in Table 4-5 indicated that only one factor was extracted out of the seven variables.

Cronbach alpha was used to measure the internal consistency of all items within each construct. The output showed that the alpha for the attitude factor was .88, which indicated high internal consistency of the factor. Therefore, this factor value represented attitude and was used as a dependent variable for t-tests as well as regression analyses for testing the study propositions.
Table 4-5. Result of a Factor Analysis of Seven Attitude Variables

<table>
<thead>
<tr>
<th>Attitude Variables</th>
<th>Factor</th>
<th>$\alpha$</th>
<th>Eigen Value</th>
<th>Variance (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Information provided</td>
<td>.87</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Searching a Web page</td>
<td>.86</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Like using <em>this</em> for room reservation</td>
<td>.84</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Help make a reservation</td>
<td>.82</td>
<td>.88</td>
<td>4.26</td>
<td>60.86</td>
</tr>
<tr>
<td>Visiting a Web page</td>
<td>.80</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Save time</td>
<td>.79</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Using this Web page</td>
<td>.37</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Intention and recommendation:** Since there were only two intention questions and two recommendation questions, their average values were computed respectively. These averages could represent intention and recommendation. They were used as dependent variables for respective regression analyses.

2. Relationships between the three constructs (format, content, and realism) and attitudes toward Web sites

An independent sample t-test was performed to evaluate the first three propositions that specified the relationships between the three treatments and customers’ attitudes toward Web sites. Results were presented in Table 4-6.
Table 4-6. Mean Differences of Three Constructs on Customers’ Attitudes toward Web Sites

<table>
<thead>
<tr>
<th>Construct</th>
<th>N</th>
<th>Mean</th>
<th>t Value</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Format of Picture Presentations</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Low</td>
<td>176</td>
<td>-.08</td>
<td>-1.40</td>
</tr>
<tr>
<td>High</td>
<td>185</td>
<td>.07</td>
<td></td>
</tr>
<tr>
<td><strong>Content of Picture Presentations</strong></td>
<td></td>
<td></td>
<td>-4.90 **</td>
</tr>
<tr>
<td>Low</td>
<td>174</td>
<td>-.26</td>
<td></td>
</tr>
<tr>
<td>High</td>
<td>187</td>
<td>.24</td>
<td></td>
</tr>
<tr>
<td><strong>Realism of Picture Presentations</strong></td>
<td></td>
<td></td>
<td>-2.38 *</td>
</tr>
<tr>
<td>Low</td>
<td>181</td>
<td>-.12</td>
<td></td>
</tr>
<tr>
<td>High</td>
<td>180</td>
<td>.13</td>
<td></td>
</tr>
</tbody>
</table>

* significant at p < .05  
** significant at p < .01

As a result of the independent sample t-test, *Proposition 1;* Separate picture presentations, such as in the format of slides, are more positively associated with customers’ attitude towards the Web site than picture presentations with texts, was rejected at the significance level of .05. In terms of format of picture presentations, picture presentations combined text on the same page and separate section showed no differences in effects towards customers' attitudes toward the hotel based on the hotel Web pages.

*Proposition 2;* Pictures of various areas (i.e. bedroom, lobby, restaurant) presented on the Web are more positively associated with customers’ attitudes toward the Web site than pictures shown in only one area, was accepted at the significance level of .01. There was statistically significant difference between showing one area of hotel and several various areas of a hotel in customers’ attitudes.

The results of t-test also supported *Proposition 3;* Pictures including people (i.e. at lobby with staffs or guests) presented on the Web are more positively associated with
customers' attitudes toward the Web site than pictures without people at the significance level of .05. Pictures including people affected customers' attitudes toward the hotel Web site.

3. Relationships among Attitude, Intention, and Recommendation

   Based on the result of correlation results of the analysis shown in Table 4-7, Proposition 4; customers' attitudes are positively associated with their purchase intention, was supported at the significance level of .01. Thus, there was a positive relationship between attitude and intention.

   Proposition 5; customers' purchase intention is positively associated with their recommendations of Web sites to others, was supported at the significance level of .01. In addition, Table 4-7 illustrated that Proposition 6; customers' attitudes are positively associated with their recommendations of Web sites to others, was supported at the significance level of .01.

Table 4-7. Pearson Correlation Test among Attitude, Intention, and Recommendation

<table>
<thead>
<tr>
<th></th>
<th>Attitude</th>
<th>Intention</th>
<th>Recommendation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Attitude</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Intention</td>
<td>.711*</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Recommendation</td>
<td>.783*</td>
<td>.789*</td>
<td>1</td>
</tr>
</tbody>
</table>

*significant at p < .01
Evaluation of the Conceptual Framework

Multiple regression analyses were utilized to further identify the causal relationships between variables in the conceptual framework. The results are listed in Table 4-8.

1) Recommendation = Intention + Attitude + Format + Content + Realism

2) Intention = Attitude + Format + Content + Realism

3) Attitude = Format + Content + Realism

Table 4-8. Comparisons of Beta Values for Path Analyses

<table>
<thead>
<tr>
<th></th>
<th>Regression 1&lt;sup&gt;a&lt;/sup&gt;</th>
<th>Regression 2&lt;sup&gt;b&lt;/sup&gt;</th>
<th>Regression 3&lt;sup&gt;c&lt;/sup&gt;</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Beta</td>
<td>t-value</td>
<td>Beta</td>
</tr>
<tr>
<td>Format</td>
<td>-0.63</td>
<td>-2.26*</td>
<td>0.04</td>
</tr>
<tr>
<td>Content</td>
<td>0.25</td>
<td>0.86</td>
<td>0.07</td>
</tr>
<tr>
<td>Realism</td>
<td>0.24</td>
<td>0.89</td>
<td>-0.06</td>
</tr>
<tr>
<td>Attitude</td>
<td>0.44</td>
<td>10.97**</td>
<td>0.70</td>
</tr>
<tr>
<td>Intention</td>
<td>0.48</td>
<td>11.96**</td>
<td></td>
</tr>
<tr>
<td>R Square</td>
<td>.73</td>
<td></td>
<td>.51</td>
</tr>
<tr>
<td>F-value</td>
<td>188.75**</td>
<td></td>
<td>94.77**</td>
</tr>
</tbody>
</table>

<sup>a</sup> Y = Recommendation

<sup>b</sup> Y = Intention

<sup>c</sup> Y = Attitude

* significant at p < .05

** significant at p < .01

As a result of multiple regression analyses shown in Table 4-8, there were statistically significant relationships between the content of picture presentation and attitude (p < .01), between realism of picture presentation and attitude (p < .05), between attitude and purchase
intention (p < .01), between attitude and recommendation (p < .01), and between purchase intention and recommendation (p < .01).

As a result, several correlations were found in the conceptual framework (See Figure 4-1). The regression analyses showed that the regression model was statistically significant at the level of .05. The $R^2$ was .73, .51, and .08. They indicated about 73% of the variance in Recommendation was explained by three Constructs, Attitude, and Intention, about 51% of the variance in Intention was explained by three Constructs, and Attitude, and 8% of the variance in Attitude was explained by three Constructs.

![Figure 4-1. Path Analysis of the Conceptual Framework](image-url)
CHAPTER 5. CONCLUSION AND SUGGESTIONS

Since Web sites have become popular communication and transaction channels between companies and customers, well-designed Web sites are important for companies to attract more customers in the EC environment. In the hospitality industry, the volumes of hotel reservations generated through the Internet have nearly doubled annually during the past three or four years (Rao, 2000).

The purpose of this study was to identify the perceptions and feedbacks of customers on hotel Web sites. In this chapter, the relationships among the constructs in the conceptual framework and their implications are discussed in the conclusion section. Finally some limitations of the study are considered and suggestions are made for future research.

Conclusion

The hospitality industry is expected to generate 40 percent of hotel bookings through the Internet (PhoCusWright, 2000). According to the PhoCusWright (2001), an online travel research firm, online reservations have nearly doubled in the past three years (See Table 5-1).

Table 5-1. Changes of Online Reservations (PhoCusWright, 2001)

<table>
<thead>
<tr>
<th></th>
<th>1999</th>
<th>2000</th>
<th>2001</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hotel branded Web sites</td>
<td>$597,000</td>
<td>$1,090,000</td>
<td>$1,900,000</td>
</tr>
<tr>
<td>Intermediary travel sites</td>
<td>$524,000</td>
<td>$1,040,000</td>
<td>$2,000,000</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>$1,121,000</strong></td>
<td><strong>$2,130,000</strong></td>
<td><strong>$3,900,000</strong></td>
</tr>
</tbody>
</table>
I. Relationships between Customers' Attitudes and Picture Presentations

Based on the content analyses of this study, more than 68 percent (132 / 203) of hotels in NYC have their own Web sites while the others introduced their hotels on various travel Web sites, such as Expedia.com. With advanced technology, almost half of these Web sites have had separate sections for picture presentations rather than using a combination of pictures with texts on the same page. Previous studies (Strader and Shaw, 1997; Gehrke and Turban 1999; Sawyer, Greely, and Cataudella, 2000) summarized three crucial aspects for successful Web sites in respect to textual presentations: quality of access, quality of content, and ability to customize the system. This study aimed to identify the effects of picture presentations on the effectiveness of commercial Web pages regarding these important factors of Web evaluation.

Format of Picture Presentations on Web sites

Easy access to Web sites is one of the basic aspects regarding quality of Web sites. The information phase especially requires detailed considerations of providing customers' easy navigations and searching capabilities so that information or products can be found conveniently and efficiently.

In particular, separate sections for picture presentations require more media programs such as slide shows, 3Ds, or video players compared to the format of picture presentations with texts on the same page. Even though technological improvements have greatly reduced difficulties in accessing and playing these programs, the results of this study showed that most people still prefer easy and fast access and navigation rather than the extra steps.
required for more elaborate picture presentations. In terms of the question “this Web page saved my time,” the mean score of picture presentations combined with texts on the same page (4.59 out of 7) was slightly higher compared to picture presentations in separate section (4.47 out of 7). In the mean time, the format of picture presentations mentioned above did not show any significant impact on subjects’ attitudes toward Web sites.

**Content of Picture Presentations on Web sites**

Hotels have focused on the information content of their Web sites to ensure comprehensive, detailed and accurate information since information quality has been identified as one of the most important factors customers consider in evaluating the quality of the services (Strader and Shaw, 1997). However, the nature of hotel information such as rates, amenities, map, local attractions, and weather forecasts could make maintenance of the information quality cumbersome.

One way of maintaining high quality hotel information while eliminating some of the unwielding text information is to provide comprehensive and detailed contents or images of the location, attractions, and atmosphere of the hotel on the hotel Web pages. This study tested if there was any difference in customers’ attitudes toward presentations between showing pictures of one area and showing pictures of various hotel areas. As a result, there was a significant positive relationship between customers’ attitudes and presentations showing various hotel areas on the Web sites. It strongly supports that quality of content is important in the customers’ perception of what is quality information.
Realism of Picture Presentations on Web sites

Another crucial point is that information on the hotel Web sites should provide a chance for customers to feel the realism of the information. A problem in this respect is the complexity and differences of customers’ demand and personal interest in the Web information. In this study, three questions were asked to receive the opinions on how people respond to Web pictures with people present or absent. The questions seeked to establish whether the Web page allowed some ideas for the customers to know how others use or enjoy their stay in the hotel, whether the hotel fits with the customers plans during the stay, and whether visiting the hotel Web page was personable and would give a similar sense as with an actual visit to the hotel.

Picture presentations with people around had slightly higher mean scores than picture presentations without people. This indicates that picture presentations including people have a more positive influence on customers’ attitudes. It proved that customers feel more secured and convinced about the quality of the hotel when seeing Web pictures that have hotel staff and customers in them rather than pictures displaying only hotel amenities. Friendly hotel staff or happy customers in pictures could be very attractive for potential customers in making their decisions.

2. Intention to Make Reservations and Recommendations to Others

Measuring customers’ intention to make reservations in the future could predict their potential behavior. Recommendation of the hotel Web sites to others for obtaining information and making reservations could be another indicator of customers’ favorable attitudes toward the hotel Web sites.
In this study, 62 percent of total variations of customers’ intention and 61 percent of total variations of recommendation were explained by their favorable attitudes. Therefore, a favorable attitude is a strong indicator to predict customers’ purchase intention and recommendation.

Implications

Results of this study have several implications for hoteliers and researchers in the EC area. First of all, this study provided a conceptual framework for measuring visual information quality on hotel Web sites. By adopting the concept of visual effects on advertisements, this study introduced more effective and competitive marketing tool to hoteliers and researchers in the EC environment.

Second, the results of this study showed that the content and realism of picture presentations have significant relationships with customers’ attitudes toward Web sites. Hotels should be considerate of customers’ needs in developing their Web sites design. For instance, they could choose pictures of various areas that include their staff members and customers. Customer-oriented Web sites could ultimately bring more market shares and larger profits to hotels.

Third, hotels could use their expenditures for marketing and advertising more efficiently if they know what works better for them. Since Web site design and maintenance is costly, the results of this study could provide a better strategy for hoteliers to save unnecessary expenditures on their Web sites.
Limitations and Suggestions for Future Research

There are several limitations in this study. First of all, results of this study might be different with different groups of people. The subjects of this study were all undergraduate students at a mid-western University. Due to the higher education level and comparatively younger age, college students tend to be more active in using the Internet, compared to other groups of people. Therefore, the sample of this study may not represent all customers. Future studies are recommended among subjects with a broader age range and different educational background.

Second, the survey was conducted with students in the middle of the semester. Since it was not the real reservation decision, they might not have given the most considerable and thoughtful answers compared to when making actual reservations. Thus, if the data were collected in an actual purchase situation, the results could be different. The best way of obtaining data might be through real hotel reservations. However, in case of using a real hotel Web site, brand and price effects would be carefully considered to measure customers’ attitudes on the Web site.

In addition, due to time and budget limitations, pictures on the eight Web sites used for evaluation were downloaded from different sources. Even though the efforts of choosing pictures with the same service level were made, there were still limitations of differentiating high from low treatments. In addition, pictures on the eight Web sites were comparatively small in this study since it was difficult to collect pictures with the same size and quality. Future research is recommended to use original pictures from the same hotel rather than downloaded ones from different resources. Also, in testing the different format of picture presentation, only a slide show was used for testing the effects of picture presentations in
separate sections in this study. If separate sections for picture presentations had pictures of large size and multiple ways of showing pictures such as 3D or video, the results could be different from this study.

Finally, since the design of the study did not include the possibility of interactions among the three constructs - format, content, and realism of picture presentations - the interactive effects were not measured. However, it is likely that the three constructs might influence one another. Thus, future research might be done to see if there is any difference when the three constructs are combined and compared. Moreover, there are needs for future research to find out the impact of other Web sites components on customers’ attitude and hence their purchase behavior.
APPENDIX A.

SURVEY INSTRUMENT
Dear Respondent:

This study is being conducted to measure customers’ purchase behavior on the picture presentations of the Web, and to develop suggestions for the hotel industry. By participating in this survey, you will help the hotel industry better understand customers’ purchase behavior on their Web pages.

It will take about 10 minutes to complete this survey. Your participation is voluntary and all the information you provide will be kept in strict confidentiality. Data will be analyzed only in aggregation.

Thank you very much for your cooperation in this study. I look forward to receiving your response. If you have any questions regarding this survey, please feel free to contact me.

Sincerely,

Jiyoung Choi  
Graduate Researcher  
(515) 572-6166  
cjv@iastate.edu

Miyoun Jeong, Ph. D.  
Major Professor  
(515) 294-3038  
mjeong@iastate.edu
Please read carefully before you start to respond this questionnaire!!!

Assume you need to make a hotel reservation for this spring break. While you are searching several hotel Web sites, you seem to be satisfied with the location and room rate of the ‘Hotel Miami’. Now, you are visiting its Web site in order to get more information about this hotel. You already checked its room rate, location, direction, local attractions and etc. Next, what you ONLY need to consider is the hotel condition, such as amenities. Please KEEP IN MIND, this Web page is a PART of Hotel Miami’s Web site, so you ONLY need to EVALUATE THIS WEB PAGE AS IT IS!!!

Please go to http://www.fcs.iastate.edu/hrim/choi/hhh.htm and check the information provided. After experiencing the Web page, please come back to the questionnaire and complete the questions.

Directions. After carefully reading each question below, please circle the number that best indicates your opinion using the following scale.

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Strongly Disagree</td>
<td>Neutral</td>
<td>Strongly Agree</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

1. The hotel Web page provided complete information for me to make a purchase decision. 1 2 3 4 5 6 7

2. I believe this Web page was very responsive. 1 2 3 4 5 6 7

3. The information on the Web page was very comprehensive to know the hotel. 1 2 3 4 5 6 7

4. The information provided was in detail to describe the hotel. 1 2 3 4 5 6 7

5. This Web page tells me how other customers use this hotel. 1 2 3 4 5 6 7

6. This Web page tells me this hotel fits for my travel purpose. 1 2 3 4 5 6 7

7. Checking this Web page gave me the same effect as visiting this hotel. 1 2 3 4 5 6 7

8. Overall, the Web page was useful for making decision. 1 2 3 4 5 6 7
9. This Web page had a link for hotel pictures. 1 2 3 4 5 6 7
10. The pictures of the hotel were various areas of the hotel. 1 2 3 4 5 6 7
11. The pictures on this Web page included people. 1 2 3 4 5 6 7
12. This Web page was consistent with how I see myself. 1 2 3 4 5 6 7
13. This Web page was consistent with how others see me. 1 2 3 4 5 6 7

Directions. Please rate each of the following statements based on your overall attitudes toward this hotel Web Page. Circle the number that best indicates your opinion.

1. Visiting this hotel Web page was 1------2------3------4------5------6------7 unenjoyable enjoyable
2. Using this hotel Web page was 1------2------3------4------5------6------7 difficulty easy
3. Information provided by this hotel Web page was 1------2------3------4------5------6------7 useless useful
4. Information provided by this hotel Web page helped me make a room reservation. 1------2------3------4------5------6------7 strongly disagree strongly agree
5. Obtaining information of this hotel via the Web page saved my time. 1------2------3------4------5------6------7 strongly disagree strongly agree
6. Searching information on this Web page was 1------2------3------4------5------6------7 boring interesting
7. I like using this Web to a make decision for room reservation. 1------2------3------4------5------6------7 strongly disagree strongly agree
8. I will visit this hotel Web page for obtaining information. 1------2------3------4------5------6------7 strongly disagree strongly agree
9. I will use this hotel Web page for making a room reservation. 1------2------3------4------5------6------7 strongly disagree strongly agree
10. I will recommend this hotel Web page for obtaining information to others. 1------2------3------4------5------6------7 strongly disagree strongly agree
11. I will recommend this hotel Web page for making a room reservation to others. 1------2------3------4------5------6------7 strongly disagree strongly agree
Directions. Please tell us about you.

1. Gender: □ Male □ Female
2. Age: □ under 19 yr. old □ 19 – 22 yr. old □ 23 – 25 yr. old □ over 25 yr. old
3. Own Personal Computer? □ Yes □ No
4. How much do you use the Internet per week?
   □ 0 – 9 hr. □ 10 – 19 hr. □ 20 – 29 hr. □ 30 – 39 hr. □ over 40 hr.
5. Have you purchased any products or services via the Internet? □ Yes □ No
   5-1 If ‘Yes’ on question 5, how many times have you purchased via the Internet since last year (January 01, 2001)?
      □ 0 □ 1 – 4 times □ 5 – 9 times □ 10 and over times
6-1. ‘To achieve a goal’ or ‘complete a task’ is my attitude while I’m online shopping.
        1-------2-------3-------4-------5-------6-------7
        strongly disagree strongly agree
6-2. ‘It is fun and I enjoy it’ is my attitude while I’m online shopping.
        1-------2-------3-------4-------5-------6-------7
        strongly disagree strongly agree

Thank You for your Time and Cooperation!!!
APPENDIX B.

HUMAN SUBJECTS REVIEW COMMITTEE APPROVAL
Iowa State University Human Subjects Review Form

Checklist for Attachments

The following are attached (please check):

13. ☒ Letter or written statement to subjects indicating clearly:
   a) the purpose of the research
   b) the use of any identifier codes (names, #’s), how they will be used, and when they will be removed (see item 18)
   c) an estimate of time needed for participation in the research
   d) if applicable, the location of the research activity
   e) how you will ensure confidentiality
   f) in a longitudinal study, when and how you will contact subjects later
   g) that participation is voluntary; nonparticipation will not affect evaluations of the subject

14. ☐ A copy of the consent form (if applicable)

15. ☐ Letter of approval for research from cooperating organizations or institutions (if applicable)

16. ☒ Data-gathering instruments

17. Anticipated dates for contact with subjects:

   First contact
   01/14/2002
   Month/Day/Year

   Last contact
   04/01/2002
   Month/Day/Year

18. If applicable: anticipated date that identifiers will be removed from completed survey instruments and/or audio or visual tapes will be erased:

   Month/Day/Year

19. Signature of Departmental Executive Officer

   If the PI or co-PI is also the DEO, a Dean signature authority must sign here.

   Signature
   Date
   Department or Administrative Unit

20. Initial action by the Institutional Review Board (IRB):

   ☒ Project approved
   ☐ Pending Further Review _____________________________________________ Date
   ☐ Project not approved _____________________________________________ Date
   ☐ No action required _____________________________________________ Date

21. Follow-up action by the IRB:

   Project approved ☐ _____________________________________________ Date
   Project not approved ☐ _____________________________________________ Date
   Project not resubmitted ☐ _____________________________________________ Date

   Rick Sharp
   Name of IRB Chairperson

   Signature of IRB Chairperson
   Date
REFERENCES


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