

The Impact of Webpage Layout and Information Presentation Mix of Inn Websites on Consumers' Perceived Legibility: The Moderating Effect of Cross-Strait Cultural Differences

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Abstract: *This research aims to examine the impact of webpage layout and information presentation of B&B websites on users' and consumers' perceived legibility. The growth of tourists from China has been particularly impressive since Taiwanese authorities passed legislation allowing Chinese tourists to travel in Taiwan. This study investigates the views of users from both Taiwan and China to assess perceived cultural differences. The experimental design is divided into four groups involving two factors of inn websites.*

This research targets students in Taiwan and China, who were asked to browse the website and answer the online questionnaire. A total of 352 people participated in this study. The empirical results show that: (1) the webpage layout of the inverted "L" navigation bar related to legibility; (2) the information presentation of static information presentation related to legibility; (3) the interaction of webpage layout and information presentation related to legibility; and (4) in terms of cultural differences, Taiwanese and Chinese students have different levels of legibility, which moderates the relationship between the interaction and legibility.

Keywords: *webpage layout, information presentation, perceived legibility, cultural differences.*

1. INTRODUCTION

With the universal pursuit of leisure and quality of life around the world nowadays, the development of tourism has grown with tremendous speed in all countries. According to statistics from the Tourism Bureau of the Ministry of Transportation and Communications, the percentage of foreigners visiting Taiwan for tourism purposes has increased rapidly since 2001. In 2012, the number of visitors travelling to Taiwan for tourism purposes hit 46,770,330, accounting for approximately 64% of all visitors to Taiwan and surpassing the number of visitors to Taiwan for other purposes by far, thus signifying a booming tourism industry in Taiwan. Such a phenomenon has created many business opportunities for hotels and related industries. To cater to both overseas and domestic tourists, and in response to tourists' in-depth travel trend, general hotels have become a popular choice, besides the tourist hotels. From January 2008 to February 2014, the total number of legally registered general hotels in all cities and counties in Taiwan was 2,824, with a total of 121,958 guest rooms. It could be observed that bed and breakfast (B & Bs) have been particularly prosperous over the past few years and are continuing to grow.

Hotels are tourists' primary accommodation options. In addition to domestic trips in Taiwan, the continuously growing number of foreign visitors in recent years indicates tourists' growing

accommodation needs. The popularization of the Internet has caused hotel websites to become an important source of information and communication channel for both domestic and foreign tourists before making a purchase decision (Schmidt et al., 2007). The Internet is the most frequently used tool to search for information, compare prices, and make purchases (Ruzic & Andrić, 2009). Each hotel should have unique presentation for design and information services on its website, which also indicates its website management mode (Liao et al., 2006). According to Andrić (2009), a website's responsibilities and functions include: (1) attracting users to browse the website; (2) retaining users who are browsing the website; (3) attracting users to revisit the website; (4) facilitating users to make transactions; and (5) providing information of after-sale services. The above shows the Internet's significance in the development of tourism and hotel industries as well as the importance and imperative of website design for hotels. Van Riel & Ouwersloot (2005) further pointed out that users' satisfaction with an interface will affect the users' overall satisfaction, which has a significantly positive effect on the users' continuous use of a website and their intention to give a good review of the interface. While planning for a trip and looking for relevant travel information, tourists' perception of the usefulness of a webpage depends on the information itself, the visual display, interactive elements, and the user's subjective feeling towards the webpage (Perdue, 2002). As such, the interplay between details of the general hotel website design (such as layout and information presentation) and how users feel about these details were the leading motivation behind this study.

Callahan (2006) mentioned that studies of website design have raised a number of questions based on the perspective of cultural differences, including: How to present different cultures and styles in a website? Are there any signs to indicate whether website design is leaning toward cultural similarities or cultural differences? If cultural differences exist, what role do such differences play and what is the importance of such differences in website design in practice? All these questions are related to different presentations of website information according to the users' browsing habits and website use due to cultural and background differences. Studies have explored the cultures in China and Taiwan from the perspective of cultural values proposed by Hofstede (1984) and have found that: (1) individualism in Chinese culture, which is more conspicuous than individualism in Taiwanese culture, is still below average; (2) the Taiwanese and Chinese have the same acceptability of power distance, indicating their similar acceptance of unfair distributions of power; (3) the Chinese show a rather intense aversion to uncertainty and expect to be in an unambiguous state; and (4) masculinity in Taiwanese culture, which is more conspicuous than masculinity in Chinese culture, is still below average, revealing that flexible gender roles are accepted in both China and Taiwan. Given that Chinese tourists are among the major tourists in Taiwan and play a significant role in tourism development, this study chose Chinese tourists as the subjects of study. In terms of website design, webpage layout and personalized design should include cultural elements and characteristics of the target population, have a user-centered design, and complete the website with optimal functions to enhance the service efficiency of the entire network. Therefore, prior to website design, it is imperative to consider users' different cultural backgrounds and design webpages that suit foreign visitors' browsing habits, allow maximum information exposure, and enhance user-friendliness. Considering that users' feelings may be subject to cultural differences across the Taiwan Strait, this study used cultural differences as a moderator variable to explore whether the variable would make a difference on users' perceived legibility while browsing a website.

Following a discussion on the motivations behind this study, this paper investigated whether the mix of webpage layout and information presentation for websites of general hotels would affect users' perceived legibility. In addition, it explored the moderating effect of cultural differences on users' perceived legibility while browsing a website.

2. LITERATURE REVIEW

2.1. General Hotels

Accommodations in Taiwan are not always called hotels. Instead, they are given different names in different areas throughout Taiwan and at different phases of the tourism industry. Equivalent terms for "general hotels", such as downtown hotels, inns, hostels, motor inns, and motels are ever-present in all areas across Taiwan (Wu, 2006; Hsu, 2008). The main difference between a general hotel and a tourist-oriented hotel lies in the scale and standard of software equipment as well as the range and scale of services. Taking hotels in municipalities for example, a general hotel normally has five to 50 guest rooms, whereas a tourist-oriented hotel normally holds more than 50 guest rooms. In addition, a

general hotel normally focuses on basic accommodation facilities, whereas restaurants, cafés, conference rooms, and activity rooms are all essential at a tourist-oriented hotel. Therefore, a tourist-oriented hotel's range and standard of services are broader in comparison with a general hotel. According to Ninemeier & Perdue (2006), the hotel industry possesses five basic characteristics: an emphasis on safety, cleanliness, and service; inseparability of manufacturing and sales; perishability; repetitiveness; and labor-intensive features. As for the history and the development of the hotel industry, some researchers have suggested that the hotel industry development before and after Taiwan's retrocession exemplifies different transitions and developments of the hotel industry in Taiwan, due to the various economic and political statuses in different time periods. Wan (2002) investigated hotel and travel websites in Taiwan, and used the website interfaces, variety of information, and online reservation systems as the main criteria for evaluation. The results showed that in Taiwan, the tourism industry relies on the Internet as an important marketing tool.

2.2. Webpage Layout

Pearson & Schaik (2003) mentioned that using a framework to design a webpage layout and the overall web content arrangement is conducive to browsing efficiency when skimming through the information on a website, and this in turn achieves the optimal website use and enhanced efficiency of information searching. On the contrast, website design which is either too complex or out of focus will only discourage users from revisiting the website (Gerald, 2002). Conducting a study of the eye movement trajectories of website users, Spool (1999) discovered that users tend to pay no attention to the bottom 1/3 of the web content, and thus suggested that important information such as promotional links should not be placed at the bottom of a webpage. Conducting an analysis on website users' manner of browsing, Djamasbi et al. (2010) found a correlation between users' website browsing, eye movements, and the visual presentation of webpages. As such, a good webpage layout has a crucial influence on the website users' satisfaction. In addition to displaying a website's focus and framework, a webpage layout should be designed in accordance with users' webpage browsing habits and provide guidance to users for better efficiency. Website design and layout are the most important determining factors of a website's usability. Some studies have incorporated various features of webpage design to assess different website purposes and usability (Cheng-Kui et al., 2010). Other than the concept of practical webpage design, some scholars have put forward elements of webpage layout based on the reciprocal influences of three layout elements: structure, shape, and arrangement, all of which should be taken into consideration in website design. There are various webpage layouts, themes, and styles. Some scholars have mentioned that a website's framework is mainly based on columns and areas. Winston (2012) suggested that the most common website layouts are two-column layouts and three-column layouts; whereas other scholars have mentioned that the main website layouts include one-column layouts, two-column layouts, and three-column layouts. Regarding website design aesthetics, Yano (2007) indicated that most navigation bars in present-day webpage layouts are inverted "L" navigation bars or "upper-corner menu" navigation bars.

2.3. Presentation of Webpage Information

For a website to be both effective and practical, its design features have to take various needs and concerns into consideration. As such, it is important to define the design features as perfectly as possible and include practical and human-centered perspectives, along with website functions and distinctiveness, in order to create an effective website (Cebi, 2013). According to Burnett & Erdelez (2010), many scholars have investigated which factors in the relationship between user-friendliness and the website framework will affect users' behavior of information searching. Visual prompts allow a user to perceive the usability of a website while browsing or searching for information, as well as let users determine whether the web content provides the information that the user needs. In the study of Yu-Hui et al (2009) on usability, the importance of setting norms for proper website use was pointed out. Such norms would preclude the likeability of compromised website usability when a website fails to give major clients clear operating instructions and causes clients to not revisit the website. Lee & Koubek (2010) suggested that the content and arrangement of information, the visual arrangement and the navigation system, along with color and layout are all important features of webpage design. Garrett (2003), Newman & Landay (2000), and Lee and Koubek (2010) categorized the main elements of website design into three domains: information design, navigation design, and visual design. Flavian et al. (2006) mentioned that information design, navigation design, and visual design are all important elements that constitute usability. The synthesis of website design elements such as

information content, webpage layout, sounds, images, and functions constitutes a theme-based website (Cyr, 2008). Reading, processing, and converting information into knowledge and wisdom is essentially modern people's daily routine. Fast reading and digesting large amounts of information equates to efficient acquisition of information. Therefore, both readability and legibility play a key role in designing and constructing a book layout. Iztok, Mirko, & Turk (2008) expounded that the development of computer and communication technologies has allowed the ongoing development and growing prevalence of presenting information in digital formats. When coupled with the Internet's global expansion, computer-based information presentation has become the leading manner of information presentation at present.

2.4. Cultural Differences

Ever & Day (1997) proposed that cultural differences result from people's varied behaviors, world views, communication and thoughts, as a result of cultural shaping. Culture arises through the gradual build-up of influence from historical experiences, values, traditions, and the external environment on individuals. Culture, which is a form of social phenomenon, is often associated with biological traits such as an individual's age, gender, skin color, and body shape, and is commonly referred to in characteristics of cultural differences (Sapienza, 2008). A culture model, which is the product of a combination of various cultural variables, focuses on objective cultural spheres such as cultural observations in the economic and political domains and the way to read numbers and dates. Cultural variables also focus on subjective information, such as value systems and action patterns. Hoft (1996) organized four culture models developed by Hofstede, Hall, Trompenaars, and Victor: (1) Hofstede's culture model, which mainly illustrates that the psychological domain is shaped by thoughts, feelings, and actions; (2) Hall's culture model, in which the primary objective is to determine the right response in a situation to create efficient communication; (3) Trompenaars' culture model, which is mainly about the solutions of people in a group; and (4) Victor's culture model, which mainly expounds the cultural impact on a commercial exchange environment. Using the cultural-dimensions theory developed by Hofstede (1984) to investigate cultural differences across the Taiwan Strait, scholars have found that differences still exist in different dimensions from a micro perspective.

2.5. Cultural Differences in Chinese Communities

Many previous studies (Hofstede, 1980; Lai & Lam, 1986) have postulated that Taiwan, China, Hong Kong, and even Japan and Korea, share similar cultural and social values due to the profound influence of Confucianism. Thus, from a macro perspective, it is generally believed that differences in social and cultural values on both sides of the Taiwan Strait are insignificant given that people in both areas are of the same ethnicity and speak the same language. Harrell (1982) mentioned that if the formation of cultures is through instruction-giving and transformation, social cultures should be subject to the influence of geographic differences, varied political and economic backgrounds, technology development, and a multitude of other contexts, and should further experience cultural transformations and eventual cultural differences. Therefore, viewing cultures on both sides of the Taiwan Strait from a micro perspective, one can observe that divergence in politics, economic background, social structure, technical level, and degree of industrialization after more than 50 years of separate sovereignty has led to cultural and social differences in spite of the communal cultural heritage.

The research of Hofstede (1980); Chong, Cragin, & Scherling (1983); Lai & Lam (1986); and Birnbaum & Wang (1985) can be drawn upon to compare managers on both sides of the Taiwan Strait, and one can observe differences in cultural values, such as individualism, power distance, uncertainty aversion, and masculinity-femininity. For example, Chinese people are more supportive of individualism than Taiwanese people are. In terms of power distance, there is no significant difference between the Chinese and Taiwanese, and both have high scores. In addition, Chinese people's uncertainty aversion is higher than that of Taiwanese people, indicating that Chinese people are more afraid of newness and changes. In terms of masculinity-femininity, the score for Chinese people is lower than that for Taiwanese people, indicating that Chinese people stress interdependence, intuition, and ordinariness. All of these illustrate that cultures across the Taiwan Strait vary to some extent if observed from a micro perspective.

2.6. The Correlation between Cultural Differences and Webpage Design

Planning and designing a webpage with comprehensive web design features is not an easy task. The complexity can vary depending on different website users' needs and feelings about a website (Lee &

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Koubek, 2010). Shen et al. (2006) proposed the concept of culture centered design (CCD) and expounded that web design should focus on the target users along with cultural patterns or environments in relation to these users. Barber & Badre (2001) proposed webpage interface design elements constituted by website characteristics in the culture dimension. Elements which constitute website interface design include color preferences, fonts, formats, images, metaphors, languages, sounds, motion pictures, text or picture preferences, general navigation tools, and the possible preferences of different groups. By utilizing promotional materials and designs that are applicable in the entire world to create opportunities online, many companies and organizations consider their webpages to be a virtual company entrance, and they aspire to attract more clients from different countries by means of their websites. In the case of high product homogeneity, companies should make use of special visual techniques to display images to potential clients. If international clients have preferences for or attach much importance to aesthetics, corporate website design that especially caters to clients' cultural backgrounds could boost the company's chances of securing business contracts, taking advantage of opportunities, and creating profit (Callahan, 2006). Katharina and Abraham (2013) explicated that businesses which make use of cultural differences to design desirable interfaces for users could enhance user satisfaction, business revenues, and market share, and they further stated that a user interface with cultural adaptivity could enhance the users' visual preferences while browsing and using the interface. Cyr & Head (2013); and Cyr, Bonanni, Bowes, & Ilsever (2005) further investigated the impact of elements such as the information content, design of the navigation bar, and the visual design of a webpage on user satisfaction with and trust in the webpage, under the presumption that users would be subject to the influence of cultural differences.

A number of studies (Marcus, 2003; Marcus & Gould, 2000; Callahan, 2006; Dormann & Chisalita, 2002; Rajkumar, 2003; Robbins & Stylianou, 2002; Cyr & Head, 2013) have probed into the influence of cultural differences on webpage design by drawing upon Hofstede's five cultural dimensions as the theoretical basis.

In summary of the above studies, the mix of webpage layout and information presentation has an impact on perceived legibility under the premise of cultural differences. This study attempted to investigate the influence of cultural differences on the overall webpage and users' perceived legibility, as well as use cultural differences as the moderator variable to understand the moderating effect. The following hypotheses are proposed:

H1: Webpage layout has a significant influence on perceived legibility.

H2: The information presentation mix of a webpage has a significant influence on legibility.

H3: The interplay between a webpage's layout and information presentation has a significant influence on perceived legibility.

H4: The influence of the interplay between a webpage's layout and information presentation on perceived legibility is moderated by cultural differences.

3. RESEARCH METHOD

3.1. Research Structure

Based on the above hypotheses, a research framework involving webpage layout, information presentation, and users' perceived legibility was proposed, as shown in Figure 1:

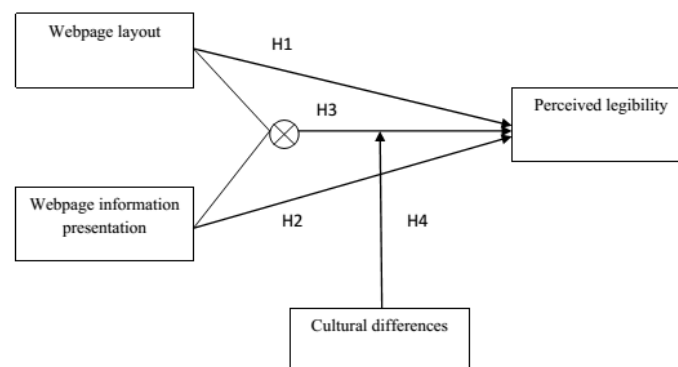


Fig1. Research framework

3.2. Elements of the Webpage Experiment

3.2.1. Webpage Layout

With reference to Winston’s (2002) observation of commonly-seen webpage layouts, two basic webpage layouts were chosen for further explorations in this study: (1) the inverted “L” navigation bar; and (2) the upper-corner navigation bar.

3.2.2. Information Presentation

In webpage design, static information presentation and dynamic information are the most commonly seen information presentation styles. However, users’ webpage browsing habits might vary due to different information presentation styles on a website. In static information presentation (text + image), text and images presented in a static formation. In dynamic information presentation (text + dynamic image), text and images are presented in a dynamic and changing fashion.

3.2.3. Webpage Design: Mix of Webpage Layout and Information Presentation

In this study, four experimental webpage scenarios were designed by pairing two webpage layouts with two information presentation styles. The four experimental mixes are shown in Table 1.

Table1. Elements of the webpage experiment

Webpage designs of four webpage layout and information presentation mixes	
An inverted “L” navigation bar (left column)	Static information presentation (text + image)
	Dynamic information presentation (text + dynamic image)
An upper-corner navigation bar	Static information presentation (text + image)
	Dynamic information presentation (text + dynamic image)
Website language	Mandarin

3.2.4. Cultural Differences

A comparison of the studies of Hofstede (1980) and Lai & Lam (1986) found that cultural differences in values, including individualism, power distance, uncertainty aversion, and masculinity-femininity, exist on both sides of the Taiwan Strait. This study randomly selected 240 Chinese and Taiwanese students from Ming Chuan University’s Taipei, Taoyuan, and Kinmen campuses as the experimental participants of this study.

4. STATISTICAL ANALYSIS AND RESULTS

4.1. Composition of Experimental Participants

Webpages for the experiment were designed by pairing a webpage layout with an information presentation style so that each webpage was made up of a different combination of variables. The experimental webpages appeared before the experimental participants in a random manner. Participants in the pre-tests were also included as participants of the experiment. The investigation lasted for two weeks, during which a total of 352 questionnaires were collected.

As revealed by the data from the collected questionnaires, 69.6% of the experimental participants were female and 30.4% were male; however, this study chose 50% of the male student population and 50% of the female student population as the experimental participants for the convenience of subsequent analysis and comparison. The data also revealed that 38.6% of the experimental participants searched for travel or accommodation information at least once a month, 27.6% of the experimental participants booked accommodation online at least once a year, 25.6% of the experimental participants stayed at a hotel twice a year, 34.1% of the experimental participants stayed at a hotel for two days a year on average, and 26.1% of the experimental participants traveled twice a year on average.

A comparison of Chinese and Taiwanese students’ Internet habits and accommodation choices found that the percentage of Chinese students who ever had used the Internet at least once to look for travel and accommodation information was higher than the percentage of Taiwanese students (39.2%), and that the percentage of Chinese students who ever had the habit of using the Internet at least once was also higher. In terms of the students’ experience of using a website to book accommodation, most Chinese students (29.5%) had at least two experiences of using a website to book accommodation,

which was higher than the percentage of Taiwanese students who had done the same. In the duration of stay at a hotel, both student groups showed a higher and similar percentage of staying at a hotel for two days. As for the number of trips per year, most Taiwanese students (22.2%) and Chinese students (30.1%) traveled twice per year, although the percentage of Chinese students was higher. However, the percentage of Taiwanese students who travelled at least five times a year (17.6%) was higher than that of the Chinese students (13.1%). As revealed by comparing the two groups' percentages for searching for relevant information online and accommodation experience, the Chinese students were more reliant on webpage information. Also, the statistics showed that as high as 35.2% of the Taiwanese students opted not to search for travel and accommodation information online. These Taiwanese students might have obtained the information they needed via other channels (e.g., family, friends, travel agencies, newspapers, and magazines).

4.2. Validity and Reliability Analysis

In terms of the construct validity, the expert validity was established and the questionnaire's overall validity was enhanced by entrusting scholars and experts to examine the choice of words for each question item against the research constructs and make modifications or offer corresponding suggestions. According to the criteria for judgments proposed by Kaiser (1974), a KMO value may differ between 0 and 1, and a higher KMO value indicates more common factors between variables. In this study, the component matrix of factor analysis was above the standard value of 0.7, the explained variation was as high as 71.325%, the KMO value was 0.921, and the significance of Bartlett's test of sphericity was 0.000 ($p < .001$), which reached a level of significance.

For a better understanding of the questionnaire's reliability and consistency, reliability analysis was performed on the official questionnaire to determine the stability and internal consistency of the question items. This study also adopted Cronbach's alpha as the benchmark of internal consistency. A higher Cronbach's alpha indicates better internal consistency, and the Cronbach's coefficient alpha in this study was 0.956, indicating both superb reliability and internal consistency.

4.3. Tests of Webpage Layout and Information Presentation, and the Interaction of Webpage Layout and Information Presentation

4.3.1. Webpage Layout Tests

As revealed by the data of the independent samples t-test, the t-value of the effects of different webpage layouts on the users' perceived legibility was -2.348, which reached a level of significance. The effect of an inverted "L" navigation bar design on the users' perceived legibility ($M=43.977$) was significantly greater than that of an upper-corner navigation bar on the users' perceived legibility ($M=42.278$). The F value was 5.512 and the p value was $0.019 < .05$, reaching a level of significance and indicating that both an inverted "L" navigation bar and an upper-corner navigation bar had significantly different effects on the users' perceived legibility. Further, the η^2 value was 0.016 and the statistical power was 0.649, indicating that the proportion of the perceived legibility variance explained by the webpage layout variable was 1.6% and that the accuracy rate of such inference was 64.9%. The results are shown below in Table 2.

Table 2. Analysis of webpage layout effect on users' perceived legibility (t test)

Construct	Mean	Standard deviation	T value
Webpage Layout			
An upper-corner navigation bar	42.278	7.324	-2.348*
An inverted "L" navigation bar (left column)	43.977	6.206	
Analysis	The effect of an inverted "L" navigation bar on users' perceived legibility is significantly greater than the effect of an upper-corner navigation bar		

+ $p < 0.1$ * $p < .05$ ** $p < .01$ *** $p < .001$

As revealed by the results of the examinations and analyses, H1 was validated, confirming that webpage layout has a significant effect on users' perceived legibility.

4.3.2. Webpage Information Presentation Tests

As revealed by the data of the independent samples t-test, the t value of the effect of different information presentations on the users' perceived legibility was -1.761, which reached a level of significance and indicated that both dynamic information presentation and static information presentation had a significant effect on the users' perceived legibility. The effect of static information presentations on the users' perceived legibility (M=43.767) was significantly greater than the effect of dynamic information presentations (M=42.489). The F value was 3.100 and the p value was $0.079 < 0.1$, which reached a level of significance. Further, the η^2 value was 0.009 and the statistical power was 0.419, indicating that the proportion of the perceived legibility variance explained by the information presentation variable was 0.9 % and that the accuracy rate of such inference was 41.9%. The results are shown below in Table 3.

Table3. Analysis of the effect of information presentation on users' perceived legibility (t test)

Construct	Number	Mean	Standard deviation	T value
Webpage Layout				
Dynamic Information Presentation	176	42.489	7.080	-1.761 ⁺
Statistic Information Presentation	176	43.767	6.531	
Analysis	The effect of static information presentations on users' perceived legibility is significantly greater than the effect of dynamic information presentations.			

+ $p < 0.1$ * $p < .05$ ** $p < .01$ *** $p < .001$

As revealed by the results of the examinations and analyses, H2 was validated, thus confirming that the presentation of webpage information has a significant effect on users' perceived legibility.

4.3.3. Tests Test of the Interaction between Webpage Layout and Information Presentation

As revealed by an analysis of variance summary table pertaining to the effect of the overall webpage design, i.e., the product of the interaction between webpage layout and information presentation on users' perceived legibility, the F value was 50.009 and the statistical significance (p value) was $0.000 < .05$, which reached a level of significance. In terms of the correlation coefficient, the statistical power was 1.000, indicating the association between the overall webpage variable and users' perceived legibility. The perceived legibility variance explained by the overall webpage variable was 86% and the accuracy rate of such inference was 100% from the perspective of the statistical power. The results are shown below in Table 4.

Table4. Analysis of webpage layout and information presentation variances

F VALUE	Significance	Observed power
50.009***	.000	1.000
R ² =868 (Adjusted R ² =860)		

+ $p < 0.1$ * $p < .05$ ** $p < .01$ *** $p < .001$

From the above statement about the elements of webpage designs, it could be inferred that cultural differences cause people of different ethnic groups to develop different webpage usage habits. The mean scores of each group's preferences for the four experimental webpage designs indicated a number of findings. First, the Chinese students' mean scores for the experimental webpage with an upper-corner navigation bar and static information presentation (41.932) and the experimental webpage with an inverted "L" navigation bar and static information presentation (43.643) were higher. This demonstrated the Chinese group's preference for webpage designs utilizing these features. Second, the Taiwanese students' mean scores for the experimental webpage with an upper-corner navigation bar and dynamic information presentation (43.727) and the experimental webpage with an inverted "L" navigation bar with static information presentation (46.217) were higher. This demonstrated the Taiwanese group's preferences for webpage designs using these features. Third, the webpage design that was preferred overall by the test participants was an inverted "L" navigation bar with static information presentation.

As revealed by the results of the analyses, H3 was validated, thus confirming that the interaction between webpage layout and information presentation has a significant effect on users' perceived legibility.

4.4. Tests of the Effect of Independent Variables and Moderators in Regression Analysis on Users' Perceived Legibility

In the regression analysis, the perceived legibility variance explained by a webpage's overall presentation, users' cultural differences, and the interaction between the two variables was 85.3%, and the overall significance of the regression model (the F value) was 4.733, which reached a level of significance ($p < .01$). In terms of the beta regression coefficient of individual variables and the t-value of the significance test, the beta regression coefficients of the two predictor variables and the interaction between the two predictor variables were 0.954 ($p < .05$), 0.190 ($p < .05$) and -0.188 ($p < .05$), respectively, all of which reached a level of significance. Thus, the impact of a webpage's overall effect on users' perceived legibility varied due the users' cultural differences. The beta regression coefficient of the moderator (the interaction between the two predictor variables) was a negative value, indicating that cultural differences had a significantly negative moderating effect on the users' perceived legibility.

According to the results of the post hoc comparisons, users in different groups experienced different perceived legibility when browsing a webpage's overall design. The beta regression coefficients of the Taiwanese group and the Chinese group were 0.929 ($p < .05$) and 0.907 ($p < .05$), respectively. Both values reached a level of significance and were positive values, indicating both groups' positive impact on the perceived legibility of a webpage's overall design, as well as each group's different perceived legibility due to differences in the webpages' overall designs.

Table 6. Mediating effects tested with regression analysis

Independent variables	B value	T value	R ²	ΔR ²	ΔF
The webpage's overall presentation	.954	36.839***	.853	.853	4.733**
Cultural differences	.190	2.289*			
Interaction between the two variables	-.188	-2.176*			
Post hoc comparison of cultural differences					
China	.929	33.064***	.863		
Taiwan	.907	28.412***	.823		

+ $p < 0.1$ * $p < .05$ ** $p < .01$ *** $p < .001$

As revealed by the results of the examinations and analyses, H4 was validated, thus confirming that the interaction between webpage layout and information presentation has a significant effect on users' perceived legibility.

5. CONCLUSION

This study found that the mix of webpage layout and information presentation has a significant influence on users' perceived legibility. Further investigations found that different webpage design elements have a different impact on users' perceived legibility. In terms of users' perceived webpage legibility, users with more cultural differences would develop a different degree of feelings toward whether a webpage's design and content met their needs, which made it clear that it is imperative to make a prudential assessment of different user groups in order to create webpage designs that meet users' needs and enhance users' perceived legibility of a webpage. This study's results and literature review coincided with many scholars' relevant discussion and research results.

In this study, the regression analysis results suggested a significant negative effect. This indicated that when users had greater cultural differences, an overall webpage design which failed to utterly meet different user groups' demands for webpage browsing and operation would undercut the users' perceived legibility of the webpage. It also meant that under the premise of cultural differences, user groups' varied cultural backgrounds would have a different degree of effect on the perceived legibility of webpage designs.

5.1. Managerial Implications

This study assumed a manager's perspective to search for webpage designs that could attract more potential customers and explore the interaction between a webpage's different elements and its practicality for users. Furthermore, this study probed into the preferences of consumers with different cultural backgrounds and created differentiated designs to boost consumers' willingness to continue browsing a webpage or make purchases. Therefore, in addition to its application in the tourism

industry, this study also made concrete, practical, and important contributions to trade, business, and even e-commerce.

Given the popularization of the Internet, a majority of businesses are extensively using websites as a channel to promote products, attract customers, or interact with clients. As a website's structure and the visual presentation of a webpage may directly affect customers' overall evaluation of a business, enhancing potential customers' intent to browse and understand a business's website may increase the chances of business activities occurring.

5.2. Theoretical Implications

Besides probing into the effect of webpage layout, information presentation, and other design details on users' perceived legibility, this study also validated the relevance of webpage design and cultural differences on users' perceived legibility, usability, and satisfaction while browsing a webpage, as proposed by numerous scholars (Marcus & Gould, 2000; Callahan, 2006; Katharina & Abraham, 2013; Cyr & Head, 2013). Future scholars intending to study Internet-related issues should provide more complete and all-encompassing coverage of webpage design elements. In addition, experiments should be conducted to detect whether other webpage design elements also have an impact on other dimensions under the users' various needs.

Along with the trend of flourishing tourism, discussions and explorations of B&Bs and international tourism hotels have been springing up one after another. However, there is scarce research on the websites of general hotels. Relatively speaking, studies of the hotel industry have rarely delved into research pertaining to webpage design, and the majority of studies are about theories of regional development, service quality, customer satisfaction, or website content and consumers' inner needs. There are few investigations into the webpage layout and information presentation of general hotels' websites.

5.3. Research Limitations

The best effort has been made to conduct the experiment under strict, rigorous, and objective monitoring. Nevertheless, large-scale sampling could not be performed due to restrictions in the experiment environment, which also resulted in a restricted explanatory power and external validity. In addition, this study's 2 x 2 factorial design experiment involving variables of webpage layout and information presentation was unable to cover other possible design elements and fully explain the impact of other elements.

5.4. Suggestions for Future Studies

Future research should consider expanding the population of research participants, as users in other age or occupation groups might result in different effects and develop different perceptions of a webpage's legibility. Future studies are suggested to choose different user groups for research and expand the scope of sampling to achieve better external validity.

With regard to potential webpage design elements that may affect users' perceived overall legibility of a webpage, future researchers are suggested to think about other possible influencing factors, come up with more detailed and comprehensive webpages, enhance the comprehensiveness of the overall research direction and structure, and create research value at a higher level.

The literature review revealed the importance of cultural differences for webpage designs. In order to have a deeper understanding of whether other webpage design details are important factors of users' perceived legibility with the existence of greater cultural differences, subsequent researchers are suggested to perform relevant research on different nationalities and ethnicities to heighten the overall value of the research and analysis.

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