THE EFFECTS OF WEBPAGES ON **CUSTOMER SATISFACTION: A** RESTAURANT CASE STUDY

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ABSTRACT

Numerous studies have investigated the customer's expectations and satisfaction. Due to the prevalence of e-commerce, this study attempts to take a further look at how the design of web pages could influence consumers' expectations and satisfaction. Both qualitative and quantitative methods are utilized. The customers of TGI Friday's are selected for empirical validation. The findings show that there was a gap between what consumers actually perceived in the restaurant and the information presented on the website. Marketing implications for restaurateurs along with suggestions for future research are provided in the conclusion section.

INTRODUCTION

Customer satisfaction has been an important issue of study for both practitioners and researchers. In recent years, due to the powerful effect of webpages on restaurant goers' purchasing desire, marketers are teeming to develop persuasive webpages to attract more customers. Retrospectively, from the customers'

Advances in Hospitality and Leisure

Advances in Hospitality and Leisure, Volume 1, 217-229

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ISSN: ????-???/doi:10.1016/S0190-1281(04)23015-3

 perspective, surfing on the Internet to search for a desired restaurant could become a necessary information inquiry procedure before choosing a restaurant. Thus, it is important to know what types of web attributes could bring awareness to restaurants as well as enhance customer satisfaction for services.

However, as indicated by Murphy (1999), the details of how to design a website so that visitors will "stay and play" are elusive and there is a lack of scientific research regarding website design. Consequently, this study attempts to take a further look at how the design of webpages could influence consumers' expectations and satisfaction.

Earlier expectation and satisfaction studies like Oliver (1980) once argued that satisfaction can be seen as a function of the expectation level and perception of disconfirmation. By contrast, the study also found a direct effect of expectation on consumer satisfaction. In Yi's (1993) moderating study on ambiguity and consumer satisfaction, he clearly noted that when the product is ambiguous, consumer expectations have direct effects on consumer satisfaction as well as indirect effects through disconfirmation.

The preceding discussions suggest that if a potential customer perceives the restaurant as an ambiguous product (difficult to evaluate the quality), after surfing on the restaurant's website, consumer expectation is likely to have direct effects on consumer satisfaction as he/she visits the restaurant. From restaurateur's viewpoint, whether the above relationship exists is a very important issue for their restaurant's website design. However, as far as the researchers have been aware, there has been no study focused on the relationship between the actual restaurant dining experiences and relevant website design inducing customers.

Accordingly, the aims of this study were to: (1) discover if there is a gap between the restaurant dining experience and the relevant website design; and (2) to further find out if such a gap affects customer satisfaction.

RESTAURANT SELECTION

Since this research focuses on the dis/satisfaction attributes between restaurant and its website, a criterion in selecting study restaurants is that the study website must be freestanding, not part of some local network website. At present, there are many restaurant websites in Taiwan, to employ all of them for the research is not possible. Therefore, in the first stage, only two styles of restaurants were taken into consideration: Chinese and Western style restaurants.

However, fast food restaurants, such as McDonalds, were excluded from the Western style restaurant. The consideration rests on the fact that once a restaurant is selected for research, in the second stage of the research design, only individuals

who have not been to such a restaurant will be asked to browse on the selected restaurant's website. It would be very difficult to find study subjects who have never been to a fast-food restaurant, such as McDonalds.

During the first stage study, 77 respondents, based on a convenience sampling procedure, were asked to write down the name of restaurants they can think about (each of the styles should comprise at least three restaurants). The results indicated that TGI Friday's (45/77, Western style) and Hai Pa Wang (56/77, Chinese style) were most frequently mentioned by the respondents. Subsequently, the websites of TGI Friday's and Hai Pa Wang were further evaluated by the researchers and it was found the two restaurants' websites were quite fit for our experiment in this research.

Finally, as was noted in the previous section, consumer expectations have direct effects on consumer satisfaction when the product is ambiguous (Yi, 1993). Therefore, in order to test the ambiguity (defined as difficult to evaluate quality) of these two restaurants: TGI Friday's and the Hai Pa Wang, Yi's (1993) concept, high ambiguity products (insurance, microwave oven, computer, aspirin, camera, laundry detergent) and low ambiguity products (e.g. soft drinks, bread, jeans, ballpoint pen) were tested. In the last part of the data collection, 74 undergraduate students were invited to evaluate product ambiguity on a seven-point scale. The results were shown in Table 1.

As displayed in Table 1, the website of Hai Pa Wang differs significantly from the high ambiguous products (e.g. insurance, laundry detergent, microwave oven, computer, aspirin, and camera). Except ball-point pens, the website of Hai Pa Wang does not set itself apart from low ambiguous products. On the other hand, with the exception of soft drinks, the website of TGI Friday's was significant different from all low ambiguous products (e.g. jeans, ball-point pens, and bread) and no significant difference was found from most of the high ambiguous products (laundry detergent, computers, and cameras). This study finds that the website of TGI Friday has a lower ambiguity. Accordingly, TGI Friday's was selected as the target restaurant for the second stage study.

After the restaurant was chosen, critical incident technique (hereafter abbreviated to CIT) was further used to collect the attributes of consumers' dis/satisfaction of the selected restaurant. An on-site intercept interview procedure was utilized at each of the TGI Friday's branches (front door) in Taipei over a onemonth period. The questionnaire asked for actual personal experiences. In general, respondents answered the following questions:

Q1: Of the TGI Friday's you have eaten in during the last six months, please think about if there was any service that you were dis/satisfied with?

Q2: Please tell us exactly what happened? How you felt?

Table 1. The Mean Difference Between Each Product.^a

	Insurance	Hai Pa Wang	Laundry Detergent	Jeans	Microwave Oven	Computer	Ball-Point Pen	Aspirin	Camera	Soft Drink	TGI Friday's	Bread
Insurance	_											
Hai Pa Wang	1.77^{*}											
Laundry detergent	0.93^{*}	0.83^{*}										
Jeans	1.72^{*}	4.0E-02	0.79^{*}									
Microwave oven	0.70^{*}	1.06^{*}	0.22	1.02^{*}								
Computer	1.20^{*}	0.56^{*}	0.27	0.52^{*}	0.50^{*}							
Ball-point pen	2.37^{*}	0.60^{*}	1.44*	0.64^{*}	1.67^{*}	1.17^{*}						
Aspirin	0.29	1.47^{*}	0.63	1.43*	0.40^{*}	0.90^{*}	2.08^{*}					
Camera	0.95^{*}	0.81^*	2.7E-02	0.77^{*}	0.25	0.24	1.41*	0.66^{*}				
Soft drink	0.56^{*}	0.20	0.63^{*}	0.16	0.86^{*}	0.36	0.81^{*}	1.27^{*}	0.60^{*}			
TGI Friday's	1.24^{*}	0.52^{*}	0.31	0.48^{*}	0.54^{*}	4.0E-02	1.13*	0.94^{*}	0.28	0.32		
Bread ^b	1.78^{*}	1.3E-02	0.85^{*}	5.4E-02	1.08^{*}	0.58^{*}	0.59^{*}	1.48*	0.82^{*}	0.21	0.54^{*}	_

^a Each score represents the mean difference between two products' ambiguity score, as measured on a scale where 1= very easy to evaluate product's quality and 7= very difficult to evaluate product's quality.

^bIn Yi's study cereal was used for ambiguity evaluation, since the cereal is not so popular to the undergraduate students; the study used bread instead of cereal.

^{*}Represents t significant at 0.05 level.

 Furthermore, the respondents were also asked to provide information on their socio-demographic data including gender, marital status, age, education level, occupation, and monthly income. In total, 270 respondents were interviewed. Four samples were excluded because of an incomplete answer. Finally, 266 usable samples remained. 59.4% of respondents were female. 81.2% were single. Most respondents ranged in age from 18 to 27, which was 63.9%. The study group was well educated, with 82.3% holding at least a bachelor's degree. Students and business people accounted for 35.7 and 34.2%, respectively. Since the average income per month was influenced by occupation, most respondents were below NT\$ 60,000 (about U.S.\$ 1765), 35.3% were between NT\$ 0–20,000, 34.2% were between NT\$ 20,001–40,000, and NT\$ 40,001–60,000 were 15.0%.

Subsequently, according to the respondents' critical incidents regarding their meal experiences at TGI Friday's, this study further categorizes the incidents into dis/satisfaction attributes. The procedures were mainly based on Keaveney (1995), Bitner et al. (1994), and Bitner et al.'s (1990) suggestion to complete the CIT classification. The entire procedures were shown in Fig. 1. The first step in data analysis is to determine the appropriate unit of analysis. Therefore, two judges independently coded the 266 samples into 945 separate critical behaviors (including 586 satisfaction behaviors and 359 dissatisfaction behaviors). Upon completing the unit of analysis coding task, the two judges compared their decisions regarding discrete behaviors and resolved disagreements by discussion.

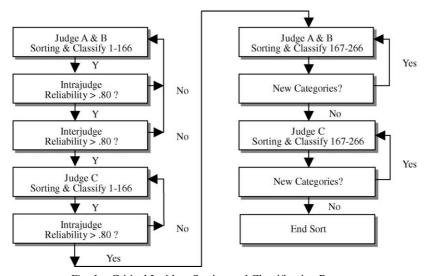


Fig. 1. Critical Incident Sorting and Classification Process.

The next step was to sort the critical behaviors into categories. Two judges (A and B) independently developed categories for samples 1–166 (675 behaviors composed of 427 satisfaction and 248 dissatisfaction). For the following post hoc method of evaluating sample size, the remaining samples 167–266 (as confirmation samples) were not incorporated in this stage.

Next, the intra-judge reliability was examined to determine whether the same judges classified the same phenomena into the same categories over time. The period of test-retest was two weeks (Davis & Cosenza, 1993) and the 0.8 was the threshold. Judges A and B compared their categorization methods and resolved disagreements by discussion. Inter-judge reliability was also conducted in this study, which is a measure of whether different judges classify the same phenomena into the same categories. When the inter-judge agreement between judge A and B exceeded 0.8, their results became the benchmarks (Latham & Saari, 1984).

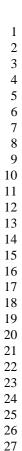
Subsequently, new judge C sorted the 675 behaviors into the categories provided by judges A and B. Judge C was instructed to create new categories if appropriate. When intra-judge reliability (two weeks period) of judge C exceeded 0.8, the classification decisions were then compared against the benchmarks. The results of all the reliability were shown in Table 2.

A sample is of sufficient size for critical incident analysis when the addition of 100 new incidents (here this study used a sample instead) does not create any new categories (Keaveney, 1995). The confirmation of 167–266 sample responses collected in this research yielded 270 behaviors (159 satisfaction behaviors and 111 dissatisfaction behaviors). Judges A and B sorted responses 167–266 into the classification system explained previously with an eye to developing new categories. No new categories emerged in this process, indicating that no further analysis was necessary. Finally, judge C sorted responses 167–266, again, no new categories emerged, and the sorting and classification process was completed. The final classification results are shown in Fig. 2.

As Fig. 2 shows, 12 categories satisfaction attributes emerged: service attitude, flavor, dining environment, atmosphere, quantity of meal, service of speed,

Table 2. Judges' Reliability.

	Judges' Reliability				
	Satisfaction	Dissatisfaction	Total		
Judge A (Intrajudge)	0.9532 (407/427)	0.8952 (222/248)	0.9319 (629/675)		
Judge B (Intrajudge)	0.9087 (388/427)	0.9597 (238/248)	0.9274 (626/675)		
Interjudge (A and B)	0.9180 (392/427)	0.8790 (218/248)	0.9037 (610/675)		
Judge C (Intrajudge)	0.9461 (404/427)	0.8952 (222/248)	0.9274 (626/675)		



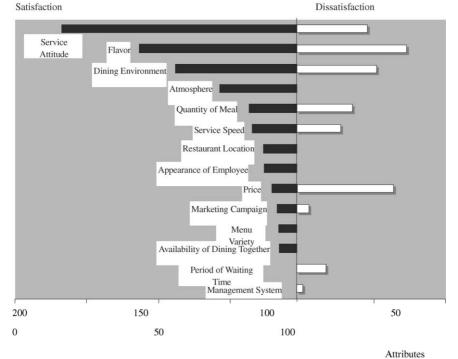


Fig. 2. Attributes/Frequency of Dis/satisfaction.

Frequency

restaurant location, appearance of employee, price, marketing campaign, menu variety, and availability of dining together. On the other hand, 9 categories emerged as dissatisfaction attributes: service attitude, flavor, dining environment, quantity of meal, service speed, price, marketing campaign, period of waiting time, and management system. In total, 14 different categories were emerged either in satisfaction or dissatisfaction attributes.

MEASUREMENT OF THE GAP

Once the attribute classification of the dis/satisfaction of the physical restaurant was completed, the results were further utilized to develop the questionnaire for the dis/satisfaction (gap) testing between the physical restaurant and its website.

In this stage, the investigation was conducted in the computer classrooms at one university that was located in Taipei, Taiwan. Initially, 461 undergraduate students were invited to participate in this investigation. Since the participants in this stage were required to those who potential consumers who had never visited TGI Friday's before. The requirement is designed to prevent the respondents' prior physical restaurant experience of TGI Friday's influencing the respondents' judgement. Therefore, only 208 samples were retained for valid analysis. Of all the respondents, most were from the Department of Computer Science, amounting to 62.6%, seconded by International Trade of 13.5%. Males amounted to 62.5%, while females were 37.5%. The disparity between the sexes was due to the students mainly from the Department of Computer Science. Most respondents ranged in age from 20 to 22, accounting for 68.8%, followed by those under 19, accounting for 18.8%.

During the investigation, first the researchers asked the respondents to browse carefully over each page of the TGI Friday's website, the homepage of TGI Friday's is shown in Fig. 3.

The respondents were instructed to ignore those functional problems of the website such as the downloading speed, format of web page . . . etc., they only had to concentrate on the website's content problems, that is, to the 14 dis/satisfaction attribute questions (e.g. How much information could be perceived about the Dining Environment on the website. How much information could be perceived about the Service Speed on the website) in the questionnaire. Furthermore, were the dis/satisfied with the amount of information they could perceive of the 14 dis/satisfaction attributes were also measured.



Fig. 3. Homepage of T.G.I. Friday's.

The Gap Between the Restaurant and its Website.

Attributes	Information Perceived ^a	Dis/satisfaction ^b	R
Dining environment	2.7644	3.0529	0.61*
Service speed	2.7067	2.9567	0.67^{*}
Quantity of meal	2.9087	3.0817	0.57^{*}
Atmosphere	2.9087	3.1538	0.63^{*}
Period of waiting time	2.6683	2.8462	0.65^{*}
Service attitude	2.6779	3.0000	0.66^{*}
Flavor	3.4808	3.4904	0.71^{*}
Management system	2.8365	3.0192	0.59^{*}
Price	3.6154	3.3029	0.45^{*}
Marketing campaign	3.1346	3.1538	0.69^{*}
Restaurant location	3.6731	3.6010	0.69^{*}
Appearance of employee	2.6923	2.8942	0.65^{*}
Menu variety	3.4663	3.4183	0.73^{*}
Availability of dining together	2.9471	3.0240	0.70^{*}

^a Each score represents the mean of each of the attributes that can be perceived by the respondents on TGI Friday's website and it was measured on a five-point Likert-type scale where 1 = very few and 5 = verv much.

The gap between the physical restaurant and its website. The result is shown in Table 3. From the 208 potential customers' perspectives, among the 14 dis/satisfaction attributes for the physical restaurant, nine attributes were perceived as giving little information on the web by the respondents while they browsed on TGI Friday's website, the other 5 attributes (flavor, price, marketing campaign, restaurant location, and menu variety) were perceived only between general and much information level. In Table 3, an interesting phenomenon can also be found in the dis/satisfaction column. The higher mean score of dis/satisfaction regarding the 14 attributes were restaurant location (3.6010), flavor (3.4904), menu variety (3.4183), price (3.3029), and marketing campaign (3.1538). These five attributes are exactly the same as the attributes where more information was perceived by the respondents on TGI Friday's website. Besides, with respect to the correlation between these two variables (information perceived and dis/satisfaction level), higher correlation can also be found in four (flavor/0.71, marketing campaign/0.69, restaurant location/0.69, and menu variety/0.73) out of the above five attributes.

Apparently, it seems that a gap exists between the TGI Friday's offerings and its website's offerings. Nine out of the 14 attributes were perceived insufficient

^bEach score represents the level of dis/satisfaction regarding to the 14 attributes that were browsed by the respondents. It was measured on a five-point Likert-type scale where 1 = very dissatisfied and 5 = veryvery satisfied.

^{*}Represents significant at 0.01 level.

on the web and the dis/satisfaction level of these nine attributes were very close to the general level, some even between the general and dissatisfied level (service speed/2.9567, period of waiting time/2.8462, and appearance of employee/2.8942). The other five attributes, namely, the flavor, price, marketing campaign, restaurant location, and menu variety, though they are a little bit higher than the above nine attributes on the dis/satisfaction measure, they are still a little bit away from the satisfied level or very satisfied level.

As an overview, this study finds that the 14 dis/satisfaction attributes emerged from the TGI Friday's that did not fully reflect its website's content design. It also implies that a potential problem might exist if any potential customers browse on TGI Friday's website and attempt to find some important information about the physical restaurant before actually going there for dining. The potential customers would probably find some important attribute information regarding the physical restaurant that are apparently insufficient or even do not exist, as a result, the potential customers' expectation regarding the physical restaurant would be affected. However, according to Yi's (1993) arguments that consumer expectations have direct effects on consumer satisfaction. The above situation may possibly affect the customers' satisfaction directly while they are actually dining in TGI Friday's.

CONCLUSIONS AND IMPLICATIONS

Potential customers surfing the Internet to gain information from the restaurant website should expect more than experienced customers. However, it seems that marketing practitioners remain unsure about the marketing strategies most appropriate to the Internet (Maignan & Lukas, 1997). But from this study a more tangible direction may have evolved.

This research demonstrated that the amount of information provided on the websites could affect customer satisfaction towards the services. As in Yi's theory (1993), it could further affect customer's dining experience as well. The implication for a restaurant's website is that web designers should strategically highlight the information concerning the best offerings dear to their customers.

In addition, several findings are worth noting most. First, in TGI Friday's, the most important attribute affecting customer satisfaction on dining experience was service attitude. However, with the constraints demonstrated on the TGI Friday's website, the information of service attitude perceived by the respondents was very low (2.6779). This variation might be due to the attribute being less tangible compared to other attributes such as: price or restaurant location.

However, as indicated by Murphy et al. (1996), the web has unlimited storage space coupled with multi-media capabilities. Also the presentation possibilities of a website are limited by the restaurateur's imagination and financial considerations. With development and popularization of wideband networks and Asymmetric Digital Subscriber Line (ADSL), nowadays enterprises could definitely offer faster and more diversified services on websites. Virtual reality, talking web pages, online movies, multimedia or other means are able to surpass the constraints of current technology regarding the current problems on restaurant's website.

Advances in technology have definitely made room for creative website designs. But more importantly, restaurateurs should make their sites in a way that allows potential customers to perceive the important attributes before they actually go there. For example, a few pictures with waiters/waitresses smiling as they serve the customers might be a good way to reflect the restaurants service attitude.

In this present study the 14 emergent dis/satisfaction attributes were obtained via qualitative approach. The study suggests that practitioners should consider using some website techniques and technologies such as: the on-line survey, polls, guest books, data-warehousing, and data-mining (Olsen & Connolly, 2000; Ziperovich, 2002) to replace the qualitative method. The methods entail several advantages such as cost saving and efficiency. Additionally, the website administrator could update the content more promptly.

Since TGI Friday's was selected as the only study restaurant, this shortcoming limits the general application of the study. Nevertheless, as Wang et al. (2000) and Wang et al. (2002) stated that Taiwan and China are similar in race, culture, and language, the result of this study could be generalized to the huge Chinese market (presently TGI Friday's has 11 branches in Taiwan, 3 branches in Beijing, 1 branch in Shanghai, and 1 branch in Tianjin).

This study merely used Yi's (1993) research concept with regard to the customer satisfaction relationship between the website design and the actual dining experience. If consumers obtain higher satisfaction when dining in the restaurant as a consequence of higher perceived satisfaction on the restaurant's website is still unclear. This seems to be a fruitful area for further research. In addition, future research might use the experimental method to investigate the customer's clicking behaviors on the 14 dis/satisfaction attributes and other content elements. If a positive relationship exists between the clicking behaviors within the 14 dis/satisfaction attributes, the result might further support and reinforce the idea this study has proposed, that is, to integrate the possible satisfaction attributes pertaining to dining experiences into restaurant websites as much as possible.

In conclusion, as indicated by Murphy et al. (1996), future marketing success will be found in giving the customer the easiest, most rewarding access to relevant information before, during, and after the dining experience. Besides, Vandermerwe

(1993) also noted that those companies that are and will be most successful have started to look at the customer's entire experience, from the pre- to the post-purchase stage. Our study only focused on "before and during." Obviously, more research is still needed to understand the relationship between the before, during, and after concepts so as to increase the knowledge on customers' dining in relation to website design.

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