KANSEI EVALUATION ON MUSEUM WEBSITE DESIGNS

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ABSTRACT

Most of the studies on marketing National Palace Museum focused on the aspect of brand development and marketing strategies. There is relatively little research regarding the Kansei appealing of the Museum's website, not to mention any comparison with other world-class museums has been carried out. According to the report of The Times, National Palace Museum "houses the best collection of traditional Chinese artifacts anywhere in the world." However, as a world-class museum, its website should be a very important platform that greets the international visitors.

Therefore, the purpose of this paper is to analyze the design of world-class museum homepages and National Palace Museum homepage with Kansei Engineering approach in order to gain understanding to what kind of overall feelings does the websites present to its viewers.

Five cases including Louvre, The Metropolitan Museum of Art, The British Museum, The State Hermitage Museum, and National Palace Museum were studied.

The findings of this study aims to benefit the design of museum homepages and contribute to the Internet promotion of museums. Museums can design websites eliciting certain feelings. As a result, more visitors and users could be attracted to visit the website or even the museum.

Keywords: Kansei Engineering, Website Design, Museum, Emotion, Promotion

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1. INTRODUCTION

Prior studies concerning the marketing domain of National Palace Museum (NPM) focused on branding and marketing strategies. To the author's best knowledge, very few researches explored the website design with Kansei Engineering approach. Nevertheless, when doing the preliminary observation of NPM and world-class museum websites, it is found that the websites exhibited various characteristics.

For instance, the homepage of Louvre and The Metropolitan Museum of Art both presented the photo of the museum exterior and changing photos. As for National Palace Museum, the website homepage (see Appendix) neither exhibit any photo of the museum nor present any pictures of their collections. Instead, three static cartoon figures were the theme of the homepage.

However, to the viewers, how do they feel when viewing the website? The designs of museum websites affect the feelings of viewers and their interest of browsing the site. Therefore, by doing this preliminary questionnaire research, the author tries to evaluate the museum website with Kansei methodology.

Five cases were studied in this research, including the homepages of Louvre, The Metropolitan Museum of Art, The British Museum, The State Hermitage Museum, and National Palace Museum. According to the report of The Times, National Palace Museum "houses the best collection of traditional Chinese artifacts anywhere in the world." Therefore, NPM was selected as one of the cases.

The paper attempts to find out the following questions: With Kansei Engineering approach, what adjectives can be used to describe museum homepages? What are the mutual and influential Kansei attributes in the overall design of museum homepages? How do the views feel about the overall design of the museum homepages?

With the picture of museum websites and the corresponding questionnaire research data, the findings of this study serve as a reference for designing website that elicit certain feelings of viewers. The findings may also provide museums website designers to design effective and appealing websites to gain reputation and attract increased viewers or even visitors.

2. RELATED LITERATURE

2.1. Kansei Engineering

Originated in Japan from the 1970s, Kansei engineering methodology "aims to design and develop products or services matching the emotional, psychological feelings and needs of customers." (Dahlgaard, Schütte, and Ayas, 2008). Later, six various types of Kansei Engineering were proposed by scholars in order to provide a structural analysis to facilitate Kansei study. (Schütte, Eklund, Axelsson, and Nagamachi, 2005). The cases of Kansei engineering extended to various applications and could be expanded to couple with the Internet to accomplish consumer satisfaction (Nagamachi, 1997).

Kansei engineering also enables researchers "to comprehend the Kansei of consumers on a psychological basis, to analyze the Kansei using statistical means, and to transfer the

analyzed data into the design domain." (Nagamachi, 2008). With the result of the data analysis, this research would be able to provide feasible findings which could be applied to the design of museum websites. The results, with the website pictures, may also provide the museum website designers as a reference for designing sites eliciting certain emotional feelings of viewers.

2.2. The Significance of Museum Website Design

The rapid development of the Internet as well as the accompanying adoption of the Web throughout the society caused the information globalization, which leads to Website reaching numerous audiences. (Kohrs and Merialdo, 2001). Nowadays, with its numerous users, websites serve as a significant media for promotion. Researchers has pointed out that museums, galleries, including other cultural organizations have been quick in utilizing the Web as a communication mode (Cunliffe, Kritou, and Tudhope, 2001). An arts organization's website is also the shop window where many people visit. (Hill, O'Sullivan, and O'Sullivian, 2003). In the meantime, the design of websites would influence the amount of time viewers spent on the website. "In modern society with great emphasis on speed and efficiency, the success of a website depends largely on whether its style and design elements can draw instant attention and encourage browsers to stay." (Chang and Yang, 2006). Online, a museum can market to and educate audiences (Rentschler and Hede, 2007, p.21). Furthermore, homepages possess "the potential to elicit universally shared emotions in their users, justifying people's attempt to design the homepage to elicit certain target emotions." (Kim, Lee, and Choi, 2003).

To attract more visitors, the design of a website homepage cannot be overlooked. "Designing a site which is attractive on first viewing and interesting enough to promote repeat visit is a key challenge." (Kotler and Keller, 2006). Aside from the on-line visitors, the website could even attract visitors to the actual destination. The Internet plays a crucial part in attracting visitors and assists the planning or reservations of their trips. Thus, the website of a destination has turned into a significant channel of branding. (Lee, Cai, and O'leary, 2005).

Besides, the websites provide viewers worldwide to an easily accessible platform for information. In the prior researches discussing the design of websites, a considerable amount focused on the design of homepages. (Campbell and Wells, 1996) (Kim, Lee, and Choi, 2003). According to the statistics, in 2008, the National Palace Museum Official Site Chinese browsers accounts for 87.87% of the total browsers (80.95% Chinese and 6.92% Simplified Chinese). The second highest is English version (8.71%). To world-class museums, websites homepages are an important source for promotion. Therefore, this research selected the homepages of museums websites as the cases.

As for the number of visitors in the museum, according to the 2008 NPM annual report, the total visitors to National Palace Museum in 2008 were 2,244,284 people. Among the total visitors, 801,808 visitors came from other countries while 1,442,476 come from local citizens (Taiwan). The overseas visitors accounts for 36% of the total visitors. Compared to the statistic of 2006, the overseas visitors increased 15%. According to the official site of France Diplomatie, the Louvre became the world's most visited museum in 2006, establishing a new record of 8.3 million visitors. The proportion of foreign visitors is 67%.

3. METHODOLOGY

Participants: Thirty participants including 12 males and 18 females participated in this questionnaire survey. The participants include 28 graduate school students and 2 undergraduate students in Taiwan. As for the age, 20 participants were in the category range of 16 to 25 years old, and 10 participants were in the category of 26 to 35 years old. Among the participants, 11 had background in design.

Kansei Evaluation Process: The research process involves selecting the homepages of five world-class museum websites. The standard of selection depends on the amount of museum collections. The Kansei engineering methodology in this research involves the collection of expressive adjectives describing the website design. First, 36 adjectives describing website designs were collected from journals. Then, nine graduate students selected the appropriate adjectives describing the five website cases. After the discussion, the similar ones were categorized. One of each group of similar adjectives was selected. According to the rank, the top 11 voted adjectives were chosen. The factors in the questionnaire included the expressive adjectives describing the design of the museum websites, including international, professional, formal, elegant, abundant, vibrant, modern, concise, creative, and conservative. Among the eleven provided adjectives, the word "conservative" should be considered relatively negative compared to the other adjectives since the homepage should be "attractive on first viewing and interesting enough to promote repeat visit." (Kotler and Keller, 2006). However, "conservative" generally lacks interesting or novel attributes. Except "conservative," the other adjectives are positive in meaning. After the adjectives were collected, the questionnaire was developed.

Questionnaire Survey: To gain understanding to the Kansei evaluation on the design of museum websites, a preliminary questionnaire survey was conducted. Quantitative research is undertaken if the research objectives require information to be generated about how many people hold certain view or fit into certain categories (Hill, O'Sullivan, and O'Sullivan, 2003). This research adopts online questionnaires as the tool of data collection because it helps to understand a specific topic in general. "If the questionnaire is well constructed, processing the data can also be fast and relatively straightforward." (Wallace, 1998, p.9).

To provide the participants with the actual experience and feeling of the museum homepages, the links to each museum were posted on top of each section in the online questionnaire. Therefore, the participants evaluated the Likert scale questions after viewing the homepages. The questionnaire had five sections, in each section, one museum homepage link was provided. Beneath the link, the eleven adjectives were displayed with the Likert scale ranging from Stronly Agree to Strongly Disagree. The instruction asked the participant to view the homepage and select the item according to their feeling toward the corresponding website.

The questions concerning gender, age, education, and background were included in the questionnaire in order to gain understanding to the backgrounds of participants. The background questions could also be used as factors for further analysis in the future.

4. RESULT

The collected data was processed in Excel to calculate the percentage of each factor (the adjectives). The total participants were 30 people. Since 100 cannot be fully divided by 30, to calculate the scores into the form of percentage, each score was timed 3.33. As a result, the total percentage was 99.9% instead of 100%. The picture of each homepage and the score of each factor were presented as follows. Beneath each table, the corresponding discussions and comparison were provided.
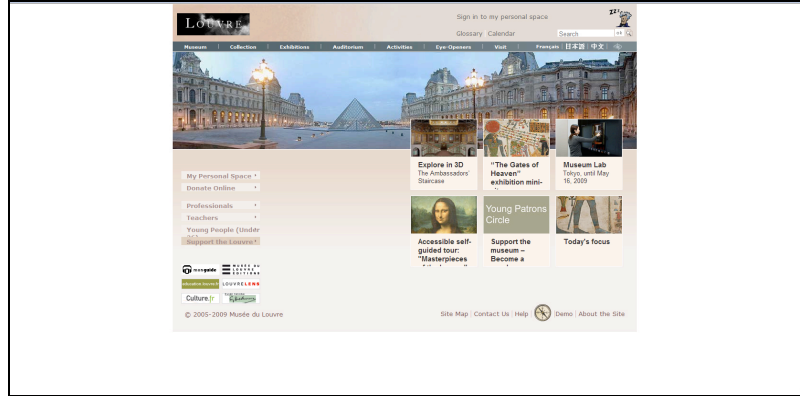

Figure 1: The homepage of Louvre, France

Table 1: The adjectives describing the homepage of Louvre

	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree	Total
International	53.28%	39.96%	3.33%	3.33%	0%	99.9%
Professional	33.3%	56.61%	9.99%	0%	0%	99.9%
Formal	36.63%	53.28%	9.99%	0%	0%	99.9%
Elegant	59.94%	29.97%	9.99%	0%	0%	99.9%
Abundant	23.31%	46.62%	23.31%	6.66%	0%	99.9%
Vibrant	16.65%	39.96%	33.3%	9.99%	0%	99.9%
Modern	23.31%	39.96%	36.63%	0%	0%	99.9%
Concise	26.64%	39.96%	29.97%	3.33	0%	99.9%
Creative	0%	29.97%	53.28	16.65%	0%	99.9%
Conventional	9.99%	39.96%	36.63%	9.99%	3.33%	99.9%
Bright	33.3%	49.95%	13.32%	3.33%	0%	99.9%

Among the expressive adjectives describing the homepage design of Louvre, the adjective that has highest percentage of score is elegant (59.94%). That is, almost 60% of participants strongly agree that elegant can be used to describe the homepage design. The second one is professional (56.61%). Therefore, the statistics suggest that the overall design of Louvre homepage provides the participant the strongest feeling in terms of elegant and professional.
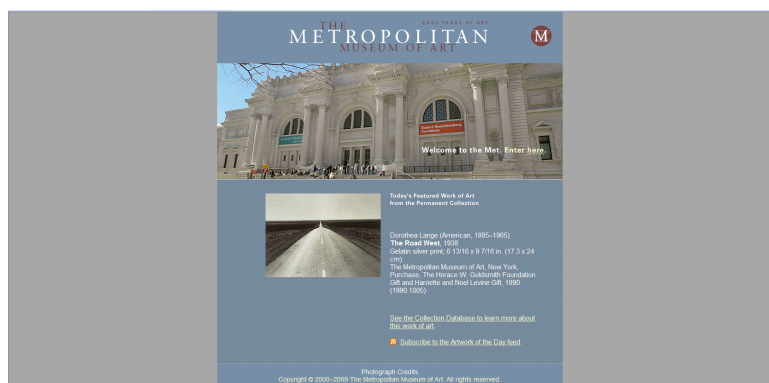
Figure 2: The homepage of The Metropolitan Museum of Art, USA

Table 2: The adjectives describing the homepage of The Metropolitan Museum of Art

	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree	Total
International	26.64%	33.3%	26.64%	9.99%	3.33%	99.9%
Professional	16.65%	56.61%	23.31%	3.33%	0%	99.9%
Formal	23.31%	56.61%	16.65%	3.33%	0%	99.9%
Elegant	16.65%	43.29%	39.96%	0%	0%	99.9%
Abundant	3.33%	36.63%	39.96%	19.98%	0%	99.9%
Vibrant	13.32%	13.32%	49.95%	19.98%	3.33%	99.9%
Modern	19.98%	56.61%	23.31%	0%	0%	99.9%
Concise	26.64%	56.61%	13.32%	3.33%	0%	99.9%
Creative	9.99%	23.31%	43.29%	23.31%	0%	99.9%
Conventional	6.66%	43.29%	33.3%	16.65%	0%	99.9%
Bright	13.32%	29.97%	53.28%	3.33%	0%	99.9%

Compared to Louvre, the homepage of The Metropolitan Museum (see Figure 2) exhibits a higher score in *modern* 76.59% (19.98% strongly agree and 56.61agree). In the case of Metropolitan Museum, the score of *concise* 83.25% (26.64% strongly agree and 56.61% agree) was much higher than the score of *concise* 66.6% (26.64% strongly agree and 39.96% agree) in Louvre. The reason could be the amount of pictures, since Metropolitan presented two pictures while Louvre had seven pictures. However, Louvre has higher score in terms of *abundant* 69.93% (23.32% strongly agree and 46.62% agree). In brief, the participants tends to felt that the design of Metropolitan Museum homepage was more *modern* and *concise*, but less *abundant* than that of Louvre.
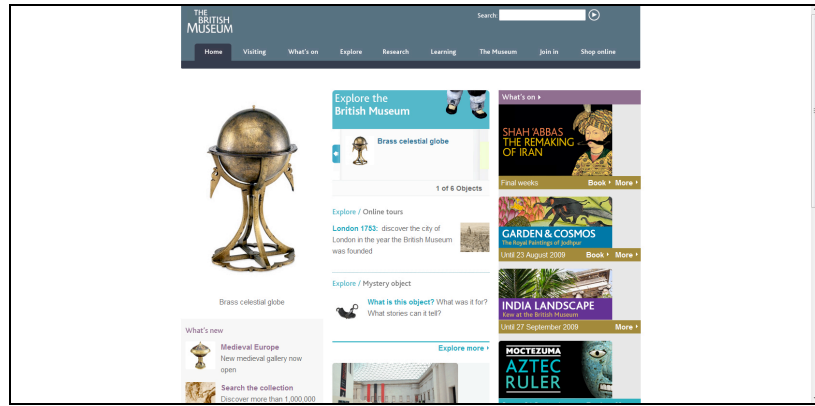
Figure 3: The homepage of The British Museum, England

Table 3: The adjectives describing the homepage of The British Museum

	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree	Total
International	23.31%	49.95%	16.65%	6.66%	3.33%	99.9%
Professional	19.98%	46.62%	23.31%	9.99%	0%	99.9%
Formal	23.31%	46.62%	19.98%	9.99%	0%	99.9%
Elegant	13.32%	36.63%	36.63%	13.32%	0%	99.9%
Abundant	36.63%	53.28%	9.99%	0%	0%	99.9%
Vibrant	13.32%	46.62%	29.97%	9.99%	0%	99.9%
Modern	23.31%	49.95%	19.98%	6.66%	0%	99.9%
Concise	6.66%	53.28%	16.65%	23.31%	0%	99.9%
Creative	13.32%	36.63%	33.3%	13.32%	3.33%	99.9%
Conventional	9.99%	29.97%	39.96%	19.98%	0%	99.9%
Bright	23.31%	59.94%	13.32%	3.33%	0%	99.9%

In the case of The British Museum homepage, 89.91% agrees that the emotional feeling of the design *abundant* 89.91% (36.63% strongly agree and 53.28% agree). This percentage exceeded the score of *abundant* in Louvre (69.93%). The reason why participant has stronger feelings in *abundant* could also be caused by the amount of pictures exhibited on the homepage. When examining the two websites, it was obvious that The British Museum (see Figure 3) presented more pictures than Louvre (see Figure 2).
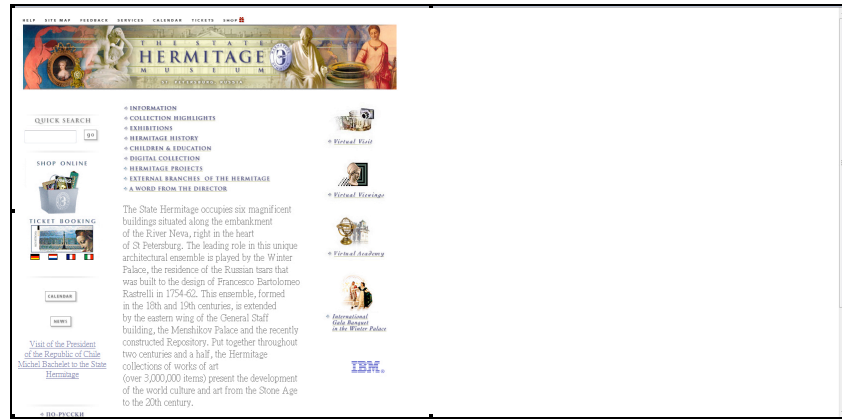
Figure 4: The homepage of The State Hermitage Museum, Russia

Table 4: The adjectives describing the homepage of The State Hermitage Museum

	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree	Total
International	13.32%	36.63%	26.64%	13.32%	9.99%	99.9%
Professional	6.66%	43.29%	26.64%	19.98%	3.33%	99.9%
Formal	9.99%	39.96%	39.96%	6.66%	3.33%	99.9%
Elegant	6.66%	43.29%	23.31%	23.31%	3.33%	99.9%
Abundant	3.33%	33.3%	36.63%	23.31%	3.33%	99.9%
Vibrant	0%	9.99%	53.28%	26.64%	9.99%	99.9%
Modern	6.66%	29.97%	46.62%	13.32%	3.33%	99.9%
Concise	9.99	43.29%	43.29%	0%	3.33%	99.9%
Creative	0%	19.98%	49.95%	16.65%	13.32%	99.9%
Conventional	23.31%	36.63%	29.97%	9.99%	0%	99.9%
Bright	9.99%	69.93%	16.65%	3.33%	0%	99.9%

When calculating the total score of *strongly agree* (13.32%) and *agree* (36.63%) in the adjective *international*, The State Hermitage Museum homepage had the least score in terms of *international* among all homepages. Besides, a total of 59.94% agree that (23.31% *strongly agree* and 36.63% *agree*) the design of Hermitage homepage is *conventional*. Compared to other homepages, Hermitage homepage obtained the highest score in *conventional*.
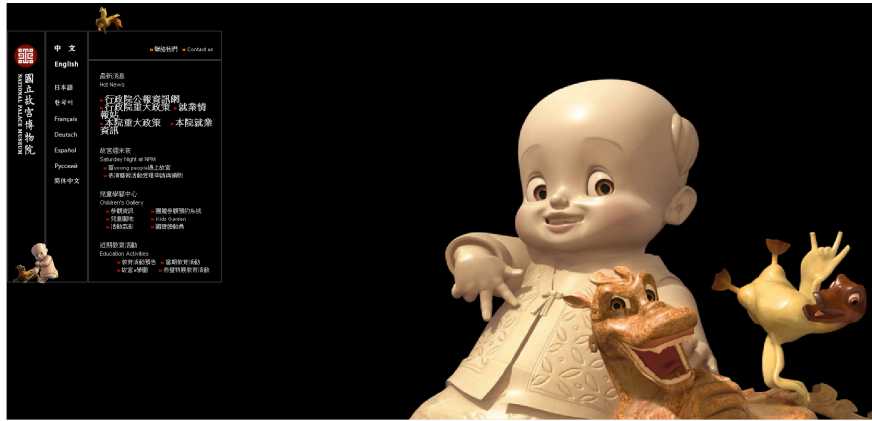
Figure 5: The homepage of National Palace Museum, Taiwan

Table 5: The adjectives describing the homepage of National Palace Museum

	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree	Total
International	39.96%	39.96%	13.32%	6.66%	0%	99.9%
Professional	23.31%	46.62%	16.65%	13.32%	0%	99.9%
Formal	16.65%	39.96%	29.97%	9.99%	3.33%	99.9%
Elegant	13.32%	43.29%	26.64%	9.99%	6.66%	99.9%
Abundant	16.65%	36.63%	33.3%	13.32%	0%	99.9%
Vibrant	46.62%	43.29%	9.99%	0%	0%	99.9%
Modern	39.96%	36.63%	19.98%	3.33%	0%	99.9%
Concise	33.3%	46.62%	19.98%	0%	0%	99.9%
Creative	26.64%	56.61%	13.32%	3.33%	0%	99.9%
Conventional	16.65%	19.98%	29.97%	16.65%	16.65%	99.9%
Bright	16.65%	36.63%	26.64%	16.65%	3.33%	99.9%

In the score of the adjective *international*, National Palace Museum has *79.92%* in *agree* (39.96% *strongly agree* and *39.96% agree*). The reason that contributed to the international aspect may be the choice of nine languages versions on the homepage. Among all museum homepages, when ranking score of strongly agree and agree in the factor international, the order from the highest to the lowest was: Louvre (93.24%), National Palace Museum (79.92%), The British Museum (73.26%), The Metropolitan Museum of Art (59.94%), and The State Hermitage Museum (49.95%).

In the factor creative, 83.25% agree (26.64%) strongly agree and 56.61% agree) that the design of National Palace Museum homepage was creative. Compared to other homepages, National Palace Museum had the highest score in terms of the creative aspect. The reason why participants emotionally feel creative could be the cartoon-like characters displayed on the homepage (Figure 5). Different from other museum homepages exhibiting the photographs of the museum or the collections, National Palace Museum had the only

homepage witxhout any photos of collections. Therefore, this may contributed to the score in the aspect of *creative*.

5. CONCLUSION

In sum, through preliminary questionnaire research and Kansei engineering approach, this paper attempted to measure the participants' emotional feeling through the eleven chosen adjectives. When examining the more obvious scores among the adjectives of each museum homepage, Louvre had noticeable scores in elegant and professional. The Metropolitan Museum of Art had higher scores in terms of modern and concise. The British Museum acquired the highest score in abundant. The State Hermitage Museum homepage obtained the highest score in conventional. National Palace Museum exhibited obvious score in international and creative.

When ranked according to the score of strongly agree and agree in creative, the order was National Palace Museum (83.25%), The British Museum (49.95%), The Metropolitan Museum of Art (33.3%), Louvre (29.97%), and The State Hermitage Museum (19.98%). When comparing the score in elegant, the highest was Louvre (89.91%), The Metropolitan Museum of Art (59.94%), National Palace Museum (56.61%), The British Museum (49.95%), and The State Hermitage Museum (49.95%).

By examining the results with the five corresponding homepages of museums, readers of this research could gain some understanding toward what feeling or emotion would a particular type of design give to its viewers. Therefore, the result of this research could be provided as a reference for website designers when they consider about designing the website which gives viewers certain feelings, such as international, professional, formal, elegant, abundant, vibrant, modern, concise, creative, or conservative. This research also serves as an exploratory research for further discussion about evaluating museum homepages designs with Kansei approach.

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