

**Globalizing Universities:  
Comparing the Visual Design of the  
Chinese and English Homepages of  
Chinese Universities**

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# **Globalizing Universities: Comparing the Visual Design of the Chinese and English Homepages of Chinese Universities**

## **Abstract**

**Aim:** Cultural differences have shown great influence in international communication; especially in websites which have attracted the attention of previous researches which aim to find out the trend in differences. This study explores the visual designs of the original Chinese and English versions of the Chinese university homepages, to identify underlying assumptions about the cultural differences between China and Western countries.

**Method:** This study used two methods to collect data on the visual design of Chinese university homepages. First, a content analysis of 96 Chinese university websites was conducted, focusing on the manifest visual characteristics of the websites. Second, online questionnaires were used to investigate the more latent characteristics of 50 websites, specifically focusing on overall impressions on participants.

**Results:** The research shows that there is generally little visual consistency between the Chinese and the English homepage versions. The differences show in manifest characteristics as well as overall impressions. Both Western and Chinese participants express a preference for the English versions. The Chinese website versions are more complex and more crowded, while the English versions do better in the following aspects: professionalism, attractiveness, and a focus on high status, community, leadership, and wellbeing.

**Conclusion:** The results show that the process of globalization is far-reaching in the case of Chinese universities. It is hard to relate the differences found to cultural dimensions. Differences may be more due to image and reputation considerations, and the English versions may present the more condensed and more deliberate image of the universities.

**Keyword:** cross-cultural communication, intercultural communication, visual design, websites, universities, localization, globalization

# 1. Introduction

## 1.1 Localization and Internationalization

With the development of the internet into a full-grown communication channel that has the potential to reach anywhere in the world, universities worldwide use their websites as an important way to provide information to external stakeholders and promote their self-image. And with globalization and internationalization becoming the norm in the academic arena, both in research and in teaching, universities increasingly try to make their websites suitable for both domestic and international user groups. The need to address stakeholders with various cultural backgrounds calls for attention for cultural differences in website communication.

Previous research has predominantly focused on the processes of localization. In this case, the website of an international operating organization is adapted to suit the cultural habits and preferences. Most studies investigated how to make a website suitable for users by localizing it for a particular country or culture. Some conventions and rules have been made (Pym, 2011), such as date and time formats, units of measure, color conventions, iconic conventions, legal conventions and connection speed. Another direction involves Internationalization, which is defined as “a process of designing and developing a generic base product, free of linguistic and cultural biases” (Meissner, 2006, p. 4.). Both research directions aim at reducing conflicts in communication and facilitating the understandings between different people.

But think of it in a different way. What about adapting a website from one country with a domestic target audience to an international audience consisting of multiple countries? What should be taken into consideration? This is the challenge that Chinese universities have to face. Internationalization trends urge Chinese universities, especially the high-ranking ones, to consider adapting their self-presentation on the internet to an audience consisting of users from every corner of the world. It goes without saying that such an adaptation has many facets, including translation, information selection, and visual design. It also goes without saying that there are, as yet, no clear-cut guidelines to make such an adaptation. The literature on cross-cultural communication, though developing rapidly, is not that far.

In this study, I focus on the visual design aspect of website globalization. I choose the context of Chinese university websites, because it is a context in which many different (but similar) organizations face the same design challenge, and have created an English version of their homepage, in addition to their original Chinese homepage. Furthermore, one can expect a meticulous and professional design process in this context, which is more uncertain in the case of personal websites, company websites, web forums, and so on.

Earlier research has shown that it is worthwhile to compare websites designed for different cultures. For instance, one research (Zhao, Massey, Murphy, & Fang, 2003) compared Chinese and American websites and found some differences in website design.

**Chinese:**

- larger homepage size
- more animated contents
- more floating banners
- a focus on organizational history/ achievement content

**American:**

- small homepage size
- personalization
- less past-oriented

From this example, it can be seen that Chinese and non-Chinese websites have displayed different characteristics, so the problem arises that how to address the different traits of website design when changing Chinese websites into international versions. How can the website that is created to the needs of Chinese be appreciated by users from other countries? How to minimize misunderstandings and convey the right information? How do Chinese websites perform this transformation?

Inspired by these questions, I conducted a study comparing the visual design of the original Chinese homepages of Chinese universities with the English versions. A quick inspection in the early phases of the research project showed that there may be considerable differences between the two versions. The research aimed at investigating the visual consistency of the Chinese and English versions of university homepages, as well as pinpointing the differences and similarities between them. This leads to the following research question:

What are the differences and similarities in the visual design of the Chinese and English versions of the homepages of prestigious Chinese universities?

For practical reasons, the research limited itself to the homepages of the universities, and did not include other web pages. The homepages were selected because they can be seen as the most prominent pages in the self-presentation of the universities, and because they can be fruitfully compared between universities.

**1.2 Overview of the Thesis**

In the next chapter, I will give an overview of the theoretical framework, which comprises theories of visual design as well as cross-cultural communication. After that, the research methods will be described, followed by the results of the study. The thesis ends with a discussion.

## 2 Theoretical Framework

The framework includes the theories on visual design of webpage or interface and theories on cultural aspects. Visual design is discussed to justify the choice of design elements. Some intercultural communication theories are discussed and among them Hofstede's theory is selected as the main theory grounds of homepage design.

### 2.1. Theory about Visual Design

Visual design (Website: *Visual Design Basics*, <http://www.usability.gov/what-and-why/visual-design.html>) deals with the aesthetics of a website and its related materials by strategically implementing fonts, images, colors, layout and other elements. A successful visual design does not exert a burden on the users or cause problems for the content. Instead, it enhances it by engaging users and helping to build self-image.

#### 2.1.1 Elements of Visual Design

The elements of visual design differ from person to person (Meyer, 2015; Lo, & Gong, 2005); Table 1 provides a listing of elements that have attracted researchers' attention who previously studied in this aspect:

**Table 1 Visual Design Elements that have been studied in Previous Research**

Source	Interface Visual Elements
Shi. (2012)	text, logo, graphics image, video and animation, color design
Meyer. (2015)	menu items, links, images, graphics, lines, captions, textures (gradients), colors, fonts, or icons
Robbins,& Stylianou. (2003)	presentation( animation , frames, graphics, sound, video), navigation( search engine, hyperlinks, e-mail info, site/map/index)
Zhao, Massey, Murphy, & Fang, (2003).	search engine, site map, help function, animated content, floating banner
Zhang, Small, Von Dran, & Barcellos, (2000)	color use, sharp/fuzzy displays, screen layout, screen background and pattern, brightness of the screens/pages, images or title
Juric, & Kuljis. (2003)	image ( photographic, symbolic, iconic, indexical and others); color (background, text, title, body; link: unvisited/visited; graphics, others); text (typeface, size, others); layout (menu, tables, placement of menus, logos, graphics, images and others).
Lo, & Gong. (2005)	text formatting, link formatting, graphic formatting , page formatting, page performance, site architecture
Aladwani. (2013).	attractiveness, organization, fonts, colors, multimedia

By studying these papers, the author finds that the basic elements that are combined to create visual designs include the lines, shapes, colors, texture, value, topography (website:

*The Elements of Design in Modern Web Design*. Retrieved from webdesigner: <http://www.1stwebdesigner.com/elements-of-modern-web-design/>).

These design elements form the foundation of visual design. According to the way how they are applied and used, it may strategically attract or deter attention.

**Lines** connect two points and can be used to help define shapes, make divisions, and create textures.

**Shapes** are self-contained areas. A shape is formed when a line encloses an area. Shapes can indicate the physical form and direct readers' eye movement.

**Color** is used to differentiate items, create depth, add emphasis, and help organize information.

**Texture** refers to how a surface feels or is perceived to feel. By repeating an element, a texture will be created and a pattern formed.

**Typography** (Watzman, 2002) refers it to the use of fonts, size, alignment, color, and spacing.

**Layout** involves formats, proportions, and grids; 2-D and 3-D organization (Martin, 1996).

**Imagery** involves signs, icons and symbols.

### 2.1.2 Principles of Visual Design

Since some of the basic elements of website visual design are discussed, then the question arises as how to combine these elements and how to make a harmonious webpage with high visual effect.

#### CRAP

Williams, R. (1994) suggests that when designing webpages, four basic design principles CRAP can be applied to enhancing effects: Contrast, Alignment, Repetition, and Proximity. In his view, **Contrast** means a focus on making items stand out by emphasizing differences in size, color, shape, direction, and other characteristics. **Repetition** promotes the repetition of visual elements throughout pages. **Alignment** stressed that everything should be placed in a proper way. Do not toss elements randomly at page or simply try to fill space. **Proximity** suggests that items related to each other should be grouped close together.

#### Grid

A grid (Elam, 2014) is a series of intersecting horizontal and vertical lines with some space in between, if used in the right way it contributes to the result that everything is in order.

In theory, the most eye-catching points are where the grid lines intersect. One of the famous rules is the Golden Ratio (website: *The designer's guide to the Golden Ratio*. Retrieved from Creativebloq: <http://www.creativebloq.com/design/designers-guide-golden-ratio-12121546/>), which describes the relationship between two proportions. It follows a 1:1.61 ratio and as it forms such a common sight in nature, it feels pleasing to the eye. A rule of thirds (website: *Understanding the Rule of Thirds in Web Design*. Retrieved from Codrops: <http://tympanus.net/codrops/2012/05/23/understanding-the-rule-of-thirds-in-web-design/>) mentions that an image can be imagined as being divided into nine equal parts by two equally-spaced horizontal lines and two equally-spaced vertical lines, and the most important compositional elements should be placed along these lines or their intersections. These two theories enable users to understand the places on an image where their attentions can be easily attracted.

## **Minimalism**

Minimalists advocate that users do not like reading especially that does not lead to fulfilling their immediate goals. Users mostly focus on accomplishing tasks and meeting their own basic goals (Meij, 2003). They need the information that helps them to accomplish the task in an effective and efficient way. Therefore, the shorter and leaner the text, the more likely it will be appreciated.

Characteristics of minimalist Web interfaces are listed as the following (Meyer.2015, p.5):

- a) *“restricted elements to maximize negative space;*
- b) *flat rather than skeuomorphic patterns and textures;*
- c) *thoughtful use of typography to convey meaning;*
- d) *use of a limited or monochromatic color palette;*
- e) *use of a grid;*
- f) *large background images or videos.”*

## **2.2 Culture Theory**

What is culture? This has been studied for a long time and still remains an interesting topic. Here are a few of the definitions by previous researchers:

“Complex whole which includes knowledge, belief, art, morals, law, custom, and any other capabilities and habits acquired by man as a member of society.” (Tylor, 1871, p.1)

“A system of shared meanings.” (Geertz, 1973)

“Subjective psychosocial response by man to experience” (Triandis, 1972)

“All the historically created design for living, explicit and implicit, rational, irrational, and no rational, which exist at any given time as potential guides for the behavior of me.” (*Kluckhohn & Kelly, 1945, p.4*)

“The interactive aggregate of common characteristics that influences a group’s response to its environment.” (*Hofstede, 1980, p.19*)

### 2.2.1 Cultural Theories

Culture is shared by specific groups of people and formed by many reasons, and in turn, it has a long-lasting influence in a comprehensive and compound way on people. Here I present some famous theories with the aim to study culture.

**Parsons and Shils** (Richard Ishida, Shils, & Smelser, 1965) proposed five cultural dimensions to describe the everyday behaviors of individuals: Affectivity vs. affective Neutrality, Self-orientation vs. Collective orientation, Universalism vs. Particularism, Ascription vs. Achievement and Specificity vs. Diffuseness.

**Hall** (1976) studies cultures from two dimensions: Contextuality (which is divided into High context and Low context) and Time conception (Polychronic and Monochronic).

**Geert Hofstede** (Hofstede, G. H., & Hofstede, G., 2001) proposes the Dimensions of National Culture – which is a way to distinguish one culture from another. It includes PDI, IDV, MAS, UA and LTO.

**Power Distance (PDI):** Cultures with a high level in power distance uphold hierarchies and the distribution of power is less emphasized.

**Individualism vs. Collectivism (IDV):** How individuals are integrated into groups or are expected to look after them. Cultures with a tendency to individualism have a focus on personal achievement, but in collectivism cultures, individual role is overlooked and group roles are appreciated.

**Masculinity vs. Femininity (MAS):** In the cultures with femininity, gender/work roles are blurred, while in that of masculinity, gender and age differences are emphasized.

**Uncertainty Avoidance (UA):** Cultures with low uncertainty avoidance tend to accept risks and changes and prefer implicit or flexible rules and guidelines.

**Long Term Orientation vs. Short Term Orientation (LTO):** Cultures with long-term orientation emphasize the importance of family, discipline and social obligations.

**Trompenaars and Hampden Turner**(Juurikivi, 2013) conclude that what make people from one culture different from another is the following seven dimensions: Universalism versus particularism (Rules Versus Relationships); Individualism versus communitarianism (The Individual Versus The Group); Specific versus diffuse (How far people get involved); Neutral versus emotional (How people express emotions); Achievement versus ascription (How people view status); Sequential time versus synchronous time (How people manage time) and Internal direction versus outer direction (How people relate to their environment).



**Kluckhohn and Strodtbeck** (1961) mention four basic traits: relation to nature, relation to others, time and personal activity. Relation to nature includes Subjugation-to-Nature, Harmony-with-Nature and Mastery-over-Nature. Relation to others includes Lineal, Collateral and Individualistic. Time orientation includes Past, Present and Future. Personal activity includes Being, Being-in-Becoming and Doing.

In **David A. Victor's** (1992) view, culture directly affects the communication process in an international business through seven variables: Language, Environmental and Technological Considerations, Social Organization, Contexting and Face-saving, Authority Conception, Nonverbal Communication Behavior and Time Conception. These seven items form the acronym LESCANT.

### 2.2.2 Chinese Culture Traits

Among these cultural theories, Hofstede's cultural dimension is the most inclusive and comprehensive, with many countries been studied and analyzed, thus it is often cited by interface/ website homepage design as a good way to interpret cultural differences (Khanum, Fatima, & Chaurasia, 2012; George, Nesbitt, Donovan, & Maynard, 2012; Marcus, & Gould, 2000; Ford, & Kotzé, 2005).

**Table 2 China's Rank in Geert Hofstede's Culture Study**

	<b>PDI</b>	<b>IDV</b>	<b>MAS</b>	<b>UAI</b>	<b>LTO</b>
American's Score	40	91	62	46	26
Germany's Score	35	67	66	65	---
The Netherland's Score	38	80	14	53	44
UK's Score	35	89	66	35	25
China's Score	80	20	66	40	118
Degree	high	Very low	medium	low	Very high
Indication	High power distance	Collectivism	Neither too masculine nor too feminine	High uncertainty avoidance	Long term

From the table, it can see that China is a country which demonstrates a tendency towards high power distance, high uncertainty avoidance, collectivism and long term.

The Chinese Culture Collection (1987) developed a list of 40 key values by consulting a number of Chinese social scientists. Based on this, Fan, Y. (2000) reexamined these 40 cultural values and added another 31 values and the new table is shown in the appendix. What is shown below are some traits that can be linked to Hofstede's cultural dimension theory.

**Table 3 The link of Chinese Culture Traits to Geert Hofstede's Theory**

<b>High Power Distance</b>	<b>Collectivism</b>	<b>Feminine</b>	<b>High Uncertainty Avoidance</b>	<b>Long Term Orientation</b>
27 Deference to authority	29 Conformity	8 Moderation	41 Prudence (carefulness)	38 Thrift (saving)
28 Hierarchy	35 Collectivism	71 Unity of yin and yang	49 Conservative	64*Past-time oriented
6* Governing by leaders instead of by law	31*Reaching consensus or compromise	43 Non-competition		
26 Loyalty to superiors	30*A sense of belonging	32*Avoiding confrontation		
		15 Courtesy		
		16 Abasement / Humbleness		

*Note:* Adapted from Fan, Y (2000) but with some changes made by the author.

### **2.2.3 Influences of Culture Dimensions on Visual Design**

By applying Hofstede's theory to real website homepage/ interface design, some website design rules have been proposed.

#### **1 High Power distance:**

A highly structured access to information

Leader prominence/ authority

#### **2 High Uncertainty Avoidance:**

The prevention of user errors by providing minimal menu options, simple and descriptive help facilities

A navigation structure that is focused on preventing users from getting lost instead of providing more information

#### **3 Masculine:**

Quick results for limited tasks

Navigation structure to support user exploration and control

Graphics and animations for utilitarian purposes

**Femininity:**

Usage of aesthetic appeal and poetry

A blurring of gender roles

Support of mutual cooperation and the exchange of ideas and support

**4 Individualism:**

Usage of images of materialism and consumerism to denote success, and achievement

**Collectivism:**

Usage of images of group achievement, leaders and groups of people

**5 Short-term:**

Structure is designed to allow users to complete tasks quickly

*Note: Adapted from *Designing Usable Interfaces with Cultural Dimensions*(Ford, & Kotzé, 2005)*

## **3 Methods**

### **3.1 Research Overview**

This study adopted a mixed approach to examine the visual design of university homepages in a cross-cultural environment.

The first method was a content analysis of 96 Chinese university homepages in Chinese and English versions. The purpose was to explore the manifest design characteristics of the Chinese and English versions of the university homepages. Manifest characteristics refer to the tangible and easily measurable features of the websites, such as color use and page length (Potter & Levine-Donnerstein, 1999).

The second method was an online survey, in which a panel of (Chinese and Western) participants evaluated the visual design of the Chinese and English versions of 50 university homepages. The purpose was to explore the latent characteristics of the homepage versions. Latent characteristics refer to the overall impressions that emerge either from the combination of many manifest characteristics or from the website as a whole, such as overall attractiveness (Potter & Levine-Donnerstein, 1999).

I will describe the two studies in more detail below.

### **3.2 Content Analysis**

#### **3.2.1 Coding Scheme**

First, the author conducted a content analysis of the website homepages that are in two languages with the aim to find out variations in their design elements. A technique was used for identifying and analyzing the content of homepage design elements following the Visual Element Construct (Juric, & Kuljis, 2003): Color, Image, Page, Navigation (Menu, Navigation, and Search) and Logo. It is based on the study of “cultural markers”, which was coined by Barber and Badre (1998) to refer to the interface design elements that are prevalent and preferred within a particular cultural group. To achieve cultural sensitivity, many multilingual websites use cultural markers to close the gap between local users and companies (Sun, 2001).

The following are the detailed observation questions regarding the markers:

#### **1. Color**

1.1 Number of colors used in the homepage – answer: number

#### **2. Image**

2.1 How much does the image area account for the whole area? (Instruction: total page area divided total image area.)

2.2 Motion of image- answer: dynamic images or not

#### **3. Page**

3.1 Page length - answer: number + screens

3.2 Separation of information- answer: line, shape/box, mixed

3.3 Organization of small chunks of information/Alignment – answer: vertical, horizontal, mixed

#### **4. Navigation**

4.1 Navigation direction- answer: vertical, horizontal, mixed

4.2 Secondary menu - answer: yes/no

4.3 Search bar- answer: yes/no

#### **5. University logo**

5.1 Background- answer: picture, text, color filling

5.2 Search bar- answer: yes/no

5.3 Navigation bar- answer: yes/no

### **3.2.2 Selection of Websites**

The reason that the author chose these 96 universities is that these universities are on “211 project list” compiled by the Ministry of Education of the People's Republic of China, with the meaning that around 100 top or important universities are supported for the 21 century with the intent of raising the research standards of high-rate universities and cultivating strategies for socio-economic development. In the list there are originally 116 universities in total, however, because some university homepages do not have English versions, so 96 university homepages are available for the observation.

During the observation, I looked at these homepages page by page, first Chinese version and then the accordingly English version. Then I filled out a form in paper with the exact questions on it. Later all the data would be collected and computed in SPSS.

### **3.2.3 Inter-coder Reliability**

In order to find out the manifest characteristics and reduce the possibility of any contradiction to the largest extent, beforehand, the author discussed with the supervisor of this paper so as to determine which variables in the design of website homepages should be observed and how to observe them.

In case that all observations would be too subjective and personal, the author worked with a second coder to further discuss the necessary rules in making the observation and reached an agreement in some cases. The coder is an undergraduate in University of Twente with a Chinese nationality. She has no background knowledge in website/interface design.

The process we worked was as followings:

1 The author met with the second coder and introduced the purpose of test to her. Later the author instructed her in details on which elements should be observed and how.

2 Then both stayed in a quiet room and reviewed 10 university homepages in both Chinese and English versions at the same time (All these 10 universities are the same universities which are to be reviewed in Questionnaire Version 1 in later online survey). During the process, we filled out a list with answers in exact number or yes/no according to the observing standards set by the author before. We also made a note on where dispute may arise. The screen captures we reviewed were printed out in paper.

3 After that we compared our lists to find whether our answers had much differences and which kinds of data were different.

We differed a lot in the following design elements: number of colors, image area, separation of information, alignment. So we had a discussion on how to count them and classify them and reached an agreement by making an additional list (List 1) of rules.

The page length was another element we differed. After discussion, we found that the differences occurred because the page sizes we viewed were different, so we later complemented that each page should be present 100% of original homepage size and with the unit of a screen of a 14 inch computer.

For other design elements such as whether there are dropdown menus or search bars, because they appear as a matter of fact, there existed no problems.

### **List 1**

#### 1. Color:

If font color, background color and other element color have the same color, it should be counted as one color.

If the target has the color with different shades or values, it should be counted as one color.

If the background color is white or transparent, it should be counted as one color.

If the icon appears with color, it should not be counted.

#### 2. Image

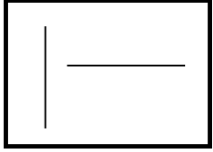
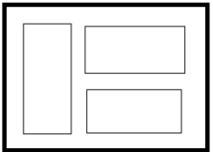
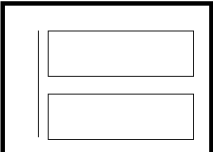
If the image appears in the header or footer, it should not be summed up to the whole image area.

If icon appears with some pictures as a background, it should not be counted.

Image area is counted in decimal number.

#### 3. Separation of information

In order to simplify the observation and explain the way information is separated, the author used a figure (Figure 1) with pictures in it to address the main differences between different separations:

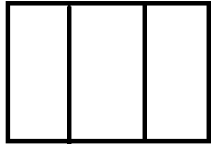
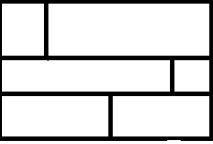
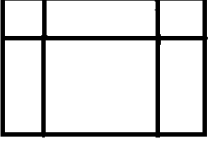
Use Line	Use Shape/box	Mixed	None
			

**Figure 1 How to Separate Information**

If it is difficult to make the judgement on which type the specific separation fit, “none” is added which means the separation does not fit in the group or it is too difficult to classify.

#### 4. Alignment:

A figure (Figure 2) is shown to tell the differences between different alignments.

Vertical alignment	Horizontal alignment	Mixed	No alignment
			

**Figure 2 How to Make Alignment**

### 3.3 Online Survey

#### 3.3.1 Instrument

An online based survey was also conducted to address the issues of different evaluations of the visual design of university homepage by people from different countries. The questionnaire began with a short part which collected information about participants' demographic characteristics, such as gender, age, nationality and so on. Then it asked participants to evaluate the homepages by presenting the screen captures of the whole homepages and listing the questions below the screen capture. In order to capture the participants' perceptions of visual design of homepage to exact degree, all the questions were phrased in a 7 point scale choices, from being negative to positive, such as “1-unattractive” and “7-attractive”, “1- a weak focus on ” and “7- a strong focus on ”.

The questionnaires had 5 different versions, with 10 different universities in each. So in all 50 universities will be chosen at random for the evaluation. Each version included the evaluation of 10 universities for per participant. As for each university, each contained 3 parts. In part 1 there is an image of university website homepage that is in Chinese, after which participants were asked to evaluate which impressions they have for the homepages (both images and questions appear in the same page, which saved participants the trouble of clicking or scrolling). Part 2 is about the judgment of English version. In

Part 3 there existed the presence of 2 smaller images of the same university homepage in both Chinese and English, and the questions below were targeted to the comparison of them: are two homepages consistent with each other? Which version does participant prefer? The overview of the questionnaire can be seen in appendix.

### 3.3.2 Selection of Websites

In this part, only 50 universities were chosen at random from the above mentioned “211 project list”, which ensured that both top/ renowned universities and universities of a lower rate or with weaker performance would be selected. The name of 50 universities is referred in appendix.

### 3.3.3 Participants

As to the participants for the online questionnaire, 50 students in Enschede will be recruited (including bachelors, masters and PHD), half of which are Chinese students, and the other half are international students. All the 50 participants will be divided into 5 groups with a consideration of keeping a balance of female and male ratio.

The participants do not need to have a good mastery of webpage design, all that requested of them is that they can scan, scroll and review. When they reviewed the homepages, they were advised to focus on design elements instead of any contents or language. When they answered the questions, they were asked to choose the “suitable” one by instinct.

After sifting results, the author has deleted some invalid results, so in the end there are 45 reliable results.

**Table 4 Distributions of Participants**

	Chinese	International	Female	Male
Group 1	4	4	5	3
Group 2	5	5	5	5
Group 3	5	5	6	4
Group 4	5	4	4	5
Group 5	6	2	6	2
Sum	25	20	26	19

### 3.3.4 Procedure

Participants were first asked whether they would like to take part in an online questionnaire survey and if the answer was yes, they were asked to send the email address to the author. Later they were able to have access to the questionnaire link



through email, in which there was also a short instruction about the online survey, including research purpose, description and note.

During the process, participants can only proceed to next part after they have answered the questions in previous pages. They cannot skip any question but they can stop if they are interrupted and later continue the questionnaire.

## 4 Results

This section reports the findings of the two research methods that have been conducted to understand the differences between Chinese and Westerners' perceptions of versions of university homepages.

### 4.1 Content Analysis

This part shows the results of content analysis. The results of design elements in Chinese university homepages: colors, image area, page length, separation of information, alignment, image motion, navigation bar direction, dropdown menu, search bar in the whole page, search bar in logo header and navigation bar in logo header will be addressed in order.

#### 4.1.1 Main Findings

##### Colors

Table 5 shows the mean score of number of colors used on the Chinese and English university homepages. As can be seen, the Chinese versions, on average, contain significantly more different colors than the English versions. Chinese versions use an average of 4.42 colors and English 4.10 colors.

**Table 5 Mean Score (SD) of the Number of Different Colors used on the homepages**

	Chinese Version	English Version	Paired samples t-test
Number of Colors	4.42 (1.19)	4.10 (1.13)	t=2.097, df=95, p<0.05, sig= 0.039

*Note:* The data is displayed in Mean Score (SD). "Number of Colors" is measured by summing up the number of font colors, background color and other element color that appear in the page. The data is processed through this method: first, all the scores observed by the author in number of colors in 96 universities with both Chinese versions and English versions were collected, a paired samples t- test was made.

##### Image Area

Table 6 presents the results regarding the image area on the Chinese and English university homepages. As can be seen, there is no difference between the Chinese and the English versions.

**Table 6 Mean Score (SD) of Image Area used on the Homepages**

	Chinese Version	English Version	Paired samples t-t test
Image Area	0.397( 0.20 )	0.445 (0.23 )	t=1.832, df=95, p<0.05, sig=0.07

*Note:* "Image Area" is measured in decimal form with total area of all images divided by the homepage area.

## Page Length

Table 7 presents the results regarding the page length on the Chinese and English university homepages. As can be seen, the English page length is a little longer than that of Chinese versions, with Chinese homepage 1.33 in page length and English 1.37 in page length. But there is no significant difference.

**Table 7 Mean score and SD of Page Length on the Homepages**

	Chinese Version	English Version	Paired samples t test
Page Length	1.33 (0.52)	1.37( 0.59 )	t=0.545, df=95, sig=.587

*Note:* “Page Length” is measured in the unit of a 14-inch screen.

## Separation of Information

Table 8 shows the number of university homepages which fit the following methods in separation of information. **Findings:** Sig (separation of information) = .646, value (Pearson Chi Square) = 1.659, there is no difference.

**Table 8 Number of Homepages which fit the Separation Group**

Separation	Line	Shape	Mixed	None
C	25	34	11	27
E	27	40	9	20

*Note:* “Separation of Information” is measured by observing how the chunks of information are distinguished from others.

The data is processed in the following way: First the author has observed how each page performs in terms of separation of information and classified these forms into 4 groups and counted the total number of each groups. Then the author conducted a chi-square test. The latter design elements were all collected in similar methods.

## Alignment

Table 9 shows the number of university homepages which fit the following method in alignment. **Findings:** Sig (alignment) = .83, value (Pearson Chi Square) = 0.88, there is no difference.

**Table 9 Number of Homepages which fit the Alignment Group**

Alignment	Vertical	Horizontal	Mixed	None
C	28	20	28	20
E	31	23	26	16

*Note:* “Alignment” is measured by observing how the chunks of information that are aligned to others.

### **Image Motion**

Table 10 shows the number of university homepages which fit the following method in image motion. **Findings:** Sig (image motion) = .46, value (Pearson Chi Square) = 0.547, there is no difference.

**Table 10 Number of Homepages which fit the Image Motion Group**

Image Motion	Yes-Dynamic	No	Total
C	80	16	96
E	76	20	96

*Note:* “Image Motion” is measured by observing whether the images keep changing or scrolling automatically.

### **Navigation bar direction**

Table 11 shows the number of university homepages which fit the following method in Navigation bar direction. **Findings:** Sig (Navigation bar direction) = 0. Value (Pearson Chi Square) = 16.725. There is a difference. Chinese versions are more likely to use horizontal Navigation bar.

**Table 11 Number of Homepages which fit the Navigation Bar Group**

Navigation Bar	Vertical	Horizontal	Total
C	4	92	96
E	24	72	96

*Note:* “Navigation Bar” is measured by observing the direction of navigation bar.

### **.Dropdown Menu**

Table 12 shows the number of university homepages which fit the following method in dropdown menu. **Findings:** Sig (Menu dropdown) = .02. Value (Pearson Chi Square) = 5.418. There is a significant difference. In Chinese versions, there are more secondary dropdown menus.

**Table 12 Number of Homepages which fit the Dropdown Menu Group**

Menu Dropdown	Yes	No	Total
C	62	34	96
E	46	50	96

*Note:* “Dropdown Menu” is measured by observing whether there are secondary dropdown menus.

### **Search bar in the whole page**

Table 13 shows the number of university homepages which fit the following method in Search bar in the whole page. **Findings:** According to Pearson Chi Square, Sig (search bar) = .044. Value (Pearson Chi Square) = 4.061. There is a difference. Search bars are used more in Chinese versions.

**Table 13 Number of homepages which fit the Search Bar Group**

Search Bar	Yes	No	Total
C	72	24	96
E	59	37	96

*Note:* “Search bar” is measured by observing whether there is a search bar in the page which facilitates searching.

### **Search bar in logo header**

Table 14 shows the number of university homepages which fit the following method in Search Bar in Logo. **Findings:** Sig (Search bar in logo header) = .772. Value (Pearson Chi Square) = 0.084. No difference.

**Table 14 Number of homepages which fit the Search Bar in Logo Group**

Search Bar in Logo	Yes	No	Total
C	46	50	96
E	44	52	96

*Note:* “Search Bar in Logo” is measured by observing whether there is search bar in the logo area/header.

### **Navigation bar in logo header**

Table 15 shows the number of university homepages which fit the following method in Navigation Bar in Logo. **Findings:** Sig (Navigation in logo header) = .192. Value (Pearson Chi Square) = 1.702. No difference.

**Table 15 Number of Homepages which fit the Navigation Bar in Logo Group**

Navigation Bar in Logo	Yes	No	Total
C	57	39	96
E	48	48	96

*Note:* “Navigation Bar in Logo” is measured by observing whether there is navigation bar in the logo area/header.

#### **4.1.2 Conclusion**

By comparing the design elements in university homepages’ Chinese and English versions, the author finds that there is a significant difference in following aspects: number of colors, navigation bar direction, dropdown menu and search bar. In another words, Chinese versions prefer using more numbers of colors, horizontal navigation bars, dropdown secondary menus and search bars.

Although there is no significant difference in following aspects: page length, image motion, separation of information, alignment, search bar in logo area and navigation bar in logo area, but Chinese and English versions still differ in mean scores:

Image area accounts for 0.397 in Chinese versions and 0.445 in English versions; which indicates that in English versions, more or larger images are used to attract users’ attention and build self-image. This may be the reason for the findings in online survey that English do better in the built up of community and leadership.

Image motion: 80 Chinese pages have dynamic pictures and 76 for English versions, which indicate that a roll of pictures which keep changing is an efficient way to promote university self-image.

Navigation bar: 92 Chinese versions use horizontal bars and only 72 English versions use horizontal bars. The author finds that when the other 24 English homepages use vertical navigation bar, they are the versions in which a lot of functions have been cut down.

Search bar in the whole page, search bar in logo, navigation bar in logo: these three cases are appeared with more frequency in Chinese versions. The reason may be that some of the English versions are not created with enough efforts, in which some functions are missing.

## **4.2 Online Survey**

This part shows the results of online survey. The results of Version consistency, Version preference, 10 variables evaluated in Chinese and English versions, 10 variables in Chinese versions evaluated by Chinese and internationals, 10 variables in English versions evaluated by Chinese and internationals will be analyzed in order.

### **4.2.1 Main Findings**

#### **Visual Consistency**

Table 16 presents the overall mean score of all 50 pairs of homepages in version consistency. The mean score is 3.63.

**Table 16 Overall Mean Score of all 50 Pairs of Homepages in Version Consistency**

	M-50 pairs of homepages	SD
Version Consistency	3.63	0.97

*Note:* The data is measured on a 7 point score (1= completely inconsistent, 7= completely consistent.). “Version Consistency” measures participants’ ratings of the visual design consistency of Chinese version and English version of the same university homepage.

Table 17 presents the Paired-samples t-test Result for Version Consistency. It can be seen that when asked to evaluate the version consistency, Chinese participants scored at 3.56 on average and international students scored a little higher at 3.71. Sig= .277. There is no difference.

**Table 17 Paired-samples t-test Result for Version Consistency**

	Chinese Participants	International Participants	t	df	Sig
Version Consistency	3.56(0.89)	3.71(1.25)	1.1	49	.277

### Version Preference

Table 18 presents the overall mean score of all 50 pairs of homepages in version preference. The mean score of all 50 pairs of homepages is 4.23, so on the whole participants prefer English versions to Chinese versions. By counting the number of score that is higher than 3.5, the author finds that more participants prefer English versions to Chinese versions, with 39 participants choosing the English versions.

**Table 18 Overall mean score of all 50 Pairs of Homepages in Version Preference**

	Mean score -all 50 Homepages	SD
Version Preference	4.23	0.93

*Note:* The data is displayed in a 7 point score.(1= a preference for Chinese version, 7 = a preference for English version.) “Version Preference” measures participants’ ratings of the preference for English version over Chinese version. The higher the score, the more preference they hold for English versions.

Table 19 presents the overall mean score of all 50 pairs of homepages in version preference. For the question that which version do they prefer, the mean score of Chinese participants is 4.07 and that of international is 4.5. It can be seen that participants have a

larger preference for English version. Sig= .039, there is a significant difference: international participants scored higher than Chinese participants.

**Table 19 Paired-samples t-test Result for Version Preference**

	Chinese Participants	International Participants	t	df	Sig
Version Preference	4.07(1.04)	4.5(1.29)	2.126	49	<b>.039</b>

### 10 different variables evaluated in terms of Chinese and English versions

Table 20 shows the Paired-sample t test result for 10 Variables in Chinese and English Versions

**Table 20 Paired-samples t-test Result for 10 Variables in Chinese and English Versions**

	Chinese version	English version	t	df	Sig
Professionalism	4.23(0.60)	4.34(0.75)	0.881	49	.383
Complexity	<b>4.26(0.60)</b>	3.70(0.70)	4.327	49	<b>0</b>
Crowdedness	<b>4.53(0.66)</b>	3.91(0.81)	4.761	49	<b>0</b>
Style	<b>4.96(0.61)</b>	3.78(0.77)	10.929	49	<b>0</b>
Attractiveness	<b>3.71(0.70)</b>	4.00(0.79)	2.118	49	<b>.039</b>
High-status	<b>4.06(0.44)</b>	4.39(0.58)	3.744	49	<b>0</b>
Community	<b>4.01(0.48)</b>	4.25(0.52)	2.525	49	<b>.015</b>
Achievement	<b>3.99(0.47)</b>	4.29(0.59)	2.926	49	<b>.005</b>
Wellbeing	3.82(0.39)	3.93(0.44)	1.553	49	.127
Leadership	4.14(0.43)	4.20(0.49)	0.645	49	.522

*Note:* The data is measured on a 7 point scale. All 10 variables are measured by participant ratings of the impression of the website that left on them from score 1 to score 7: 1= very unprofessional, 7= very professional; 1= very simple, 7= very complex; 1= very empty, 7= very crowded; 1= strong English style, 7= strong Chinese Style; 1= very unattractive, 7= very attractive; 1= no focus on high university status, 7=strong focus on high university status; 1= no focus on community, 7= strong focus on community; 1= no focus on achievement, 7= strong focus on achievement; 1= no focus on wellbeing/care, 7= strong focus on wellbeing/care; 1= no focus on leadership, 7= strong focus on leadership.)

**Findings:** A paired samples t-test succeeded to reveal a statistically reliable difference between Chinese and English versions in the following variables:



**Complexity:**  $M(C) = 4.26$ ,  $SD(C) = 0.60$ ,  $M(E) = 3.70$ ,  $SD(E) = 0.70$ ,  $T(49)=4.327$ ,  $p=0$ . Chinese versions are more complex in design than English, with the score 4.26 to 3.7.

**Crowdedness:**  $M(C)=4.53$ ,  $SD(C)=0.66$ ,  $M(E)=3.91$ ,  $SD(E)=0.81$ ,  $T(49)=4.761$ ,  $p= 0$ . Chinese versions looked more crowded in design, with the score 4:53 vs 3.91.

**Style:**  $M(C)=4.96$ ,  $SD(C)=0.61$ ,  $M(E)=3.78$ ,  $SD(E)=0.77$ ,  $T(49)=10.929$ ,  $p=0$ . Chinese versions scored at 4.96 in style, and English versions scored at 3.78, there is a difference. Chinese versions exhibit as Chinese style and English versions show that they do not have a very strong style.

**Attractiveness:**  $M(C)=3.71$ ,  $SD(C)=0.70$ ,  $M(E)=4$ ,  $SD(E)=0.79$ ,  $T(49)=2.118$ ,  $p= .039$ . English versions are more attractive in design.

**High status:**  $M(C)=4.06$ ,  $SD(C)=0.44$ ,  $M(E)=4.39$ ,  $SD(E)=0.58$ ,  $T(49)=3.744$ ,  $p=0$ . English versions are more devoted to the built-up of high status.

**Community:**  $M(C)=4.01$ ,  $SD(C)=0.48$ ,  $M(E)=4.25$ ,  $SD(E)=0.52$ ,  $T(49)=2.525$ ,  $p= .015$ . English versions are more devoted to the built-up of community.

**Achievement:**  $M(C)=3.99$ ,  $SD(C)=0.47$ ,  $M(E)=4.29$ ,  $SD(E)=0.59$ ,  $T(49)=2.926$ ,  $p= .005$ . English versions are more devoted to the built-up of achievement.

### 10 variables in Chinese versions evaluated by Chinese and internationals

Table 21 shows the Paired-sample t-test Result for 10 Variables in Chinese Versions.

**Table 21 10 Variables in Chinese Versions- Evaluated by Chinese and International Participants**

	Chinese Participants	International Participants	t	df	Sig
Professionalism	4.07(0.77)	4.24(0.95)	1.083	49	.284
Complexity	4.09(0.64)	4.41(0.91)	2.603	49	<b>.012</b>
Crowdedness	4.34(0.66)	4.71(0.89)	3.236	49	<b>.002</b>
Style	5.04(0.59)	4.81(0.87)	1.898	49	.064
Attractiveness	3.50(0.76)	3.85(1.04)	2.205	49	<b>.032</b>
High-status	4.06(0.59)	3.95(0.80)	0.787	49	.435
Community	3.99(0.60)	3.87(0.80)	0.745	49	.46
Achievement	3.99(0.64)	3.83(0.89)	1.005	49	.32
Wellbeing	3.83(0.67)	3.58(0.74)	1.525	49	.134
Leadership	4.32(0.65)	3.78(0.87)	3.303	49	<b>.002</b>

**Findings:** A paired samples t-test succeeded to reveal a statistically reliable difference between Chinese and international participants in the following variables:

As for **Complexity** in Chinese website versions, Chinese graded 4.09 on average and international 4.41. Sig =.012, there is a significant difference. Chinese versions seem more complex in design in the eyes of internationals than that of Chinese.

As for **Crowdedness**, Chinese viewed it at 4.34 and international at 4.71. Sig =.002, there is a significant difference. Chinese versions seem to be more crowded for internationals than for Chinese.

As for **Attractiveness**, Chinese scored at 5.04, international scored at 4.81, Sig=.032, there is a significant difference. Chinese versions look more attractive to Chinese than to internationals.

As for **Leadership**, Chinese gave it a rate of 4.32, while international rated at 3.78, Sig= .002, there is a significant difference. Chinese think Chinese versions perform better in leadership than internationals do.

### 10 variables in English versions evaluated by Chinese and internationals

Table 22 shows the Paired samples t-test Result for 10 Variables in English Versions.

**Table 22 10 variables in English Versions: Evaluated by Chinese and International Participants**

	Chinese Participants	International Participants	t	df	Sig
Professionalism	4.07(0.90)	4.10(0.79)	4.465	49	<b>0</b>
Complexity	3.60(0.80)	3.71(0.94)	0.775	49	.442
Crowdedness	3.80(0.89)	4.02(0.92)	1.98	49	.053
Style	4.15(0.92)	3.31(0.85)	6.4	49	<b>0</b>
Attractiveness	3.74(0.86)	4.24(0.98)	3.37	49	<b>.001</b>
High-status	4.14(0.70)	4.67(0.69)	5.076	49	<b>0</b>
Community	4.00(0.73)	4.44(0.81)	2.926	49	<b>.005</b>
Achievement	3.94(0.72)	4.61(0.83)	5.054	49	<b>0</b>
Wellbeing	3.81(0.73)	3.90(0.86)	0.485	49	.63
Leadership	4.09(0.66)	4.17(0.92)	0.514	49	.61

**Findings:** A paired samples t-test succeeded to reveal a statistically reliable difference between Chinese and international participants in the following variables:

As for **Style**, Chinese rated it 4.15, International 3.31, Sig = 0, there is a significant difference. Internationals do not think English versions have a strong English version.

As for **Professionalism**, Chinese rated it 4.07 and International 4.10, Sig = 0, there is a significant difference.

As for **Attractiveness**, Chinese rated it 3.74, International 4.24, Sig = .001, there is a significant difference.

As for **High-status**, Chinese rated it 4.14, International 4.67, Sig = 0, there is a significant difference.

As for **Community**, Chinese rated it 4.00 and International 4.44, Sig = .005, there is a significant difference.

As for **Achievement**, Chinese rated it 3.94 and International 4.61, Sig = 0, there is a significant difference.

It can be seen that internationals gave higher scores to English versions in attractiveness, high status, community and achievement than Chinese participants did.

#### 4.2.2 Conclusions

1. In the aspect of Version Consistency, the result shows there is little consistency between two versions. The reason can be attributed to the design differences manifest in the homepages, in both manifest characteristics and overall characteristics. There is no significant difference in both Chinese and international participants' evaluations.

2. In the aspect of Version Preference, English versions are preferred more. There is a significant difference in participants' evaluation, with Chinese score at 4.07 and international at 4.5. It is understandable that international participants choose English over Chinese versions because the English versions are created with the aim to accommodate to internationals' needs, while the design of Chinese version may not take international targets into consideration. But it is an interesting finding that the mean score of Chinese participants overreaches 3.5 (it is a 7 point scale measure), it looks like that even for Chinese participants, they have a preference for English versions. The reason may be attributed to the fact that English versions use more deliberate images of universities, for instance English versions use more/larger images and are less crowded, less complex in design, as it is addressed in 3.

3. By looking the 10 different variables in Chinese and English versions, it can be seen that English versions perform better in the following aspects than Chinese versions: less Complex, less Crowded, Attractiveness, a focus on High Status, a focus on Community and a focus on Achievement.

4. If looked at only Chinese website versions, Chinese and international participants show differences in evaluating the following variables: Complexity, Crowdedness, Attractiveness and Leadership. Chinese give higher scores than international participants.

If looked at only English website versions, Chinese and international participants show differences in evaluating the following variables: Professionalism, Style, Attractiveness, High-status, Community and Achievement. Internationals give higher scores than Chinese participants.

Why Chinese participants give higher scores than internationals in the judgment of Chinese version and why international give higher scores than Chinese participants in the judgement of English versions? The author assumes that language will have an effect on participants, for example, when internationals review English versions, they may feel more attracted and confident in judging and thus give a higher score for English versions; while the Chinese language in Chinese versions give a stress on their eye and make them depressed.

## **5 Discussion**

### **5.1 Main Conclusions and Implications**

#### **Content Analysis**

On the one hand, there is a significant difference in the following design elements of university homepages between Chinese versions and English versions: number of colors, navigation bar direction, dropdown menu and search bar. In another words, Chinese versions are tended to use more colors, more horizontal navigation bars, more search bars and more secondary menu.

Part of the reason can be attributed to Hofstede's cultural dimension. According to his theory, China is a country which demonstrates high power distance, high uncertainty avoidance, collectivism, long term. So when it comes to the Chinese university homepages in Chinese version, a lot of efforts are made to reduce the uncertainties in communication, such as adding dropdown menu and search bars in pages, which guides users from getting lost online searching.

The use of images can also be associated with minimalism, which states that do not provide unnecessary information. One suggestion is to use large background images.

On another hand, there is no significant difference in following aspects: page length, image motion, separation of information, alignment, search bar in logo header and navigation bar in logo header. In this aspect, cultural theory makes no sense.

The author estimates the result is due to two reasons: first, because the main prospective targets of websites are Chinese, so Chinese versions are designed with the most devotions, and the English versions are just the minimized versions with some contents and functions eliminated and some English versions are poorly converted. Therefore, it is difficult to give right results when the two versions are not of the same quality. Second, the universities themselves differ in quality, let alone their homepages. There is a gap between top universities and the universities which rank at the end of list, therefore the results are mixed.

#### **Online Survey**

As for online research, there is a significant difference in version preference: participants like English versions, especially international participants.

If participants are asked which style does the homepages look like? Chinese versions scored at 4.96, while English versions differ significantly at 3.78. Because the score is based on a 7 point scale, 1 means it has a Chinese style, and 7 means that it has an

English style. It can be seen that for English versions the mean score is too low, which implies that universities do a bad job in globalizing their websites.

The reason maybe that in English versions, there are less information, but more pictures which are not only pleasing to the eye, but also help the built-up of self-images

By looking the 10 different variables in Chinese and English versions, it can be seen that Chinese versions perform worse in the following aspects than English versions : more Complex, more Crowded, Style, a less focus on High Status, a less focus on Community and a less focus on Achievement.

None of the mean scores of attractiveness, high status, community, achievement, wellbeing and leadership in 2 versions exceed 4.5, since it is a 7 point measure, the results imply that Chinese website perform not so good in either original design or globalization. There is much room for improvement in visual designs.

In sum, Chinese university homepages focus on the details in the design of webpages, for which they leave the impression of crowdedness and complexity on readers. And they are less awakening to the importance of building up online self-image, such as attractiveness, community, achievement and leadership.

## **5.2 Limitations and Future Research**

The author has come up with some drawbacks of this research and hope further researches will overcome these problems:

1. The online questionnaire is done by the participants without the presence of the researcher, so some participants may fill out the form without enough patience and attention, with the time period ranging from 20 minutes to even 1 day. And without the in-time help and assistance from the researcher, so if there are some questions regarding the questionnaire, the participants need to figure out the questions by themselves or pause and wait aimlessly for the researcher's feedback.
2. A large and diverse sample population is a positive feature of investigation. However, in this online questionnaire research, the number of participants that have completed the online survey is not enough, with the number of about 46. In the process, a lot of participants gave up halfway, so the researcher needs to enroll more participants and prolong the data collection period. If there will be more participants with the reliable results, it will be better.
3. In the process of content analysis, because all observation is made by the author alone, there may remain some mistakes due to personal preferences and fatigue caused by observing so many pages.

4. As for the university homepages that are subject to be studied, the researcher did not make any in-depth survey as whether they are designed as good ones or they are up to the high standards. So the personal observations may lead to mixed results.

5. The variables chosen for the observation and online survey are not fit enough to depict the visual design differences in Chinese and English versions. Studies on which variables best symbolize manifest characteristics and overall characteristics of homepage visual design to the full extent are needed.

## Reference

- Aladwani, A. M. (2013). A cross-cultural comparison of Kuwaiti and British citizens' views of e-government interface quality. *Government Information Quarterly*, 30(1), 74-86.
- Barber, W. and Badre, A. (1998). Culturability: The Merging of Culture and Usability in Proceedings of the 4<sup>th</sup> Conference on Human Factors and the Web (Basking Ridge NJ, June 1998), <http://www.research.microsoft.com/users/marycz/hfweb98/barber/index.htm>
- Blumer, A., Ehrenfeucht, A., Haussler, D., & Warmuth, M. K. (1987). Occam's razor. *Information processing letters*, 24(6), 377-380.
- Chen, E. H. L. (2004). A review of learning theories from visual literacy. *Journal of Educational Computing, Design & Online Learning*, 5, 1-8.
- Czerwinski, M., Mountford, S. J., Nielsen, J., Tognazzini, B. T., & Instone, K. (1997, March). Web interfaces live: what's hot, what's not? In *CHI'97 Extended Abstracts on Human Factors in Computing Systems* (pp. 103-104). ACM.
- Elam, K. (2004). *Grid Systems: Principles of Organizing Type*. Princeton Architectural Press.
- Fan, Y. (2000). A classification of Chinese culture. *Cross Cultural Management: An International Journal*, 7(2), 3-10.
- Ford, G., & Kotzé, P. (2005). Designing usable interfaces with cultural dimensions. In *Human-computer interaction-INTERACT 2005* (pp. 713-726). Springer Berlin Heidelberg.
- Geertz, C. (1973). *The interpretation of Cultures: Selected Essays by Clifford Geertz*, New York: Basic Books Inc.
- George, R., Nesbitt, K., Donovan, M., & Maynard, J. (2012, January). Evaluating indigenous design features using cultural dimensions. In *Proceedings of the Thirteenth Australasian User Interface Conference-Volume 126* (pp. 49-58). Australian Computer Society, Inc.
- Hall, E.T. (1996). *Beyond Culture*. New York: Anchor Doubleday Press.
- Hofstede, G. H., & Hofstede, G. (2001). *Culture's consequences: Comparing values, behaviors, institutions and organizations across nations*. Sage Publication.
- Hofstede, G. (1980). *Culture's Consequences: International Differences in Work Related Values*, Beverly Hills, CA, Sage Publication.
- Ishida, R., & Miller, S. (2005). Localization vs. internationalization. *W3C International/questions/qa-i18n.txt*.
- Ivory, M.Y., & Megraw, R. (2005). Evolution of website design patterns. *ACM Transactions on Information Systems (TOIS)*, 23(4), 463-497.
- Juric, R., Kim, I., & Kuljis, J. (2003). Cross cultural web design: an experience of developing UK and Korean cultural markers. In *Information Technology Interfaces, 2003. ITI 2003. Proceedings of the 25th International Conference on* (pp. 309-313). IEEE.
- Juurikivi, S. (2013). Cultural guidance for expatriates of Technip Offshore Finland Oy.



- Kaushal, S. (2014). Different aspects of intercultural nonverbal communication: A Study. *Asian J. of Adv. Basic Sci*, 2(2), 31-39.
- Khanum, M. A., Fatima, S., & Chaurasia, M. A. (2012). Arabic Interface Analysis Based on Cultural Markers. *arXiv preprint arXiv:1203.3660*.
- Kluckhohn, F. R., & Strodtbeck, F. L. (1961). Variations in value orientations..
- Lazard, A., & Mackert, M. (2014). User evaluations of design complexity: The impact of visual perceptions for effective online health communication. *International journal of medical informatics*, 83(10), 726-735.
- Lo, B. W., & Gong, P. (2005). Cultural impact on the design of e-commerce websites: Part I—site format and layout. *Issues in Information Systems*, 6(2), 182-189.
- Marcus, A. (2006). Cross-cultural user-experience design. In *Diagrammatic Representation and Inference* (pp. 16-24). Springer Berlin Heidelberg.
- Marcus, A., & Gould, E. W. (2000). Crosscurrents: cultural dimensions and global Web user-interface design. *interactions*, 7(4), 32-46.
- Martin, S. (1996). Effective visual communication for graphical user interfaces.
- Meij, H. V. D. (2003). Minimalism revisited. *Document Design*, 4(3), 212-233.
- Meissner, C. (2006). *Balancing Cultural and Corporate Identity Aspects in Standardising and/or Localising Websites: A Contingency Approach*. diplom. de.
- .Meyer, K. L. (2015). TOWARDS A DEFINITION OF MINIMALISM: PRINCIPLES OF MINIMAL VISUAL DESIGN IN WEB INTERFACES.
- Parsons, T., Shils, E. A., & Smelser, N. J. (Eds.). (1965). *Toward a general theory of action: Theoretical foundations for the social sciences*. Transaction Publishers.
- Pieters, R., Wedel, M., & Batra, R. (2010). The stopping power of advertising: Measures and effects of visual complexity. *Journal of Marketing*, 74(5), 48-60.
- Potter, W. J., & Levine - Donnerstein, D. (1999). Rethinking validity and reliability in content analysis.
- Pym, A. (2011). Website localization. *Kirsten Malmkjær*.
- Robbins, S. S., & Stylianou, A. C. (2003). Global corporate web sites: an empirical investigation of content and design. *Information & Management*, 40(3), 205-212.
- Sandrini, P. (2005). Website localization and translation. In *EU-High-Level Scientific Conference Series MuTra*.
- Schwartz, S. H. (1994). *Beyond individualism/collectivism: New cultural dimensions of values*. Sage Publications, Inc.
- Schwartz, S. H., & Ros, M. (1995). Values in the West: A theoretical and empirical challenge to the individualism-collectivism cultural dimension. *World psychology*, 1(2), 91-122.
- Shi, P. (2012). Visual Information Interactive Design on Web Interface. *In Advances in Multimedia, Software Engineering and Computing Vol. 2* (pp. 457-462). Springer Berlin Heidelberg.

- Sun, H. (2001). Building a culturally-competent corporate web site: an exploratory study of cultural markers in multilingual web design. In *Proceedings of the 19th annual international conference on Computer documentation* (pp. 95-102). ACM.
- The Chinese Culture Connection (1987). "Chinese values and the search for culture-free dimensions of culture." *Journal of Cross-Cultural Psychology*, 18:2, pp.143-164.
- Thompsonaars, F., & Hampden-Turner, C. (1998). *Riding the waves of culture: Understanding cultural diversity in global business*. New York: McGraw-Hill.
- Ting-Toomey, S., & Kurogi, A. (1998). Facework competence in intercultural conflict: An updated face negotiation theory. *International Journal of Intercultural Relations*, 22. 187–225
- Triandis, H.C. (1972). *The Analysis of Subjective Culture*. New York: John Wiley.
- Tylor, E. B. (1871). *Primitive culture: researches into the development of mythology, philosophy, religion, art, and custom* (Vol. 2). Murray.
- Victor, D. (1992). LESCANT model. *International user interface*. New York: John Wiley & Sons.
- Watzman, S. (2002). Visual design principles for usable interfaces. *The human-computer interaction handbook: Fundamentals, evolving technologies and emerging applications*, 263-285.
- White, A. W. (2002). *The elements of graphic design: space, unity, page architecture, and type*. Skyhorse Publishing Inc.
- Williams, R. (1994). *The non-designer's design book: Design and typographic principles for the visual novice*. Berkeley, CA: Peachpit Press.
- Zhang, P., Small, R. V., Von Dran, G. M., & Barcellos, S. (2000). A two factor theory for website design. In *System Sciences, 2000. Proceedings of the 33rd Annual Hawaii International Conference on* (pp. 10-pp). IEEE.
- Zhao, W., Massey, B., Murphy, J., & Fang, L. (2003). Cultural dimensions of website design and content. *Prometheus*, 21(1), 74-84.
- Visual Design Basics. Retrieved from usability.gov: <http://www.usability.gov/what-and-why/visual-design.html>
- The Elements of Design in Modern Web Design. Retrieved from webdesigner: <http://www.1stwebdesigner.com/elements-of-modern-web-design/>
- The designer's guide to the Golden Ratio. Retrieved from creativebloq: <http://www.creativebloq.com/design/designers-guide-golden-ratio-12121546>
- Understanding the Rule of Thirds in Web Design. Retrieved from codrops: <http://tympanus.net/codrops/2012/05/23/understanding-the-rule-of-thirds-in-web-design/>

## **Appendix**

### **Appendix 1 Overview of Online Questionnaire**

### **Appendix 2 Overview of Content Analysis Standards**

### **Appendix 3 A List of Universities that have been Studied in Online Questionnaire**

### **Appendix 4 Chinese National Traits**

#### **Appendix 1 Overview of Online Questionnaire**

Introduction of the questionnaire

Part One-Chinese version

Indicate your impression of the visual design of this website (for Chinese version)( All the choice answers are based on 7 - point scale. )

- 1) Unprofessional -----Professional
- 2) Empty----- Crowded
- 3) Simple ----- Complex
- 4) Chinese Style-----English Style
- 5) Unattractive ----- Attractive
- 6) Low-status university ----- High-status university
- 7) A weak focus on community ----- A strong focus on community
- 8) A weak focus on achievement ----- A strong focus on achievement
- 9) A weak focus on well-being/care----- A strong focus on well-being/care
- 10) A weak focus on leadership ----- A strong focus on leadership

Part Two-English version

Same like “Indicate your impression of the visual design of this website” (for English version)

Part three - Comparison

- 1) To what extend are the Chinese and English version of university homepagevisually consistent?
- 2) Which of thee two versions do you prefer?

## Appendix 2 Overview of Content Analysis Standards

The following is the list to be filled out in the observation

	<b>Color</b>	<b>Image</b>		<b>Page</b>			<b>Navigation</b>			<b>Logo</b>	
<b>Name of university</b>	Number of Color	Image area	Image motion	Page length	Separation of info	Alignment	Navigational bar	Menu dropdown	Search bar	Search bar in logo	Navigation bar in logo

### **Appendix 3 A List of Universities that have been Studied in Online Questionnaire Research:**

1. Peking University
2. University of Science and Technology Beijing
3. China University of Political science and Law
4. Jilin University
5. Hebei University of Technology
6. Huazhong Agricultural University
7. Nanjing Normal University
8. Central China Normal University
9. Shandong University
10. Guangxi University
11. Beijing Normal University
12. Chongqing University
13. Ocean University of China
14. Shanghai University of Finance and Economics
15. China University of Petroleum
16. China University of Mining and Technology
17. Beijing University of Post and Telecommunication
18. North China Electric Power University
19. Northwestern Polytechnic University
20. Hunan University
21. Southeast University
22. Beijing Sport University
23. Beihang University
24. Sichuan University
25. National University of Defense Technology
26. Fudan University
27. Dalian University of Technology
28. Zhejiang University
29. Fourth Military Medical University
30. Zhengzhou University
31. Wuhan University
32. Communication University of China
33. Zhongshan University
34. Beijing Institute of Technology
35. Huazhong University of Science and Technology
36. Southeast China University of Technology
37. Nanjing University of Science and Technology
38. Haerbing Institute of Technology
39. Anhui University
40. Southwest Jiaotong University
41. Shanghai University
42. Guizhou University
43. East China University of Science and Technology
44. Zhongnan University of Economics and Law
45. Nanjing Agricultural University
46. Sichuan Agricultural University
47. Tianjin University
48. Jinan University
49. Fuzhou University
50. Central South University

#### **Appendix 4: Chinese National Traits**

- 1 Patriotism
- 2 A sense of cultural superiority
- 3 Respect for tradition
- 4\* Bearing hardships
- 5 Knowledge (education)
- 6\* Governing by leaders instead of by law
- 7\* Equality /egalitarianism
- 8 Moderation, following the middle way
- Interpersonal Relations**
- 9 Trustworthiness
- 10 Jen-ai / Kindness (forgiveness, compassion)
- 11\*Li / Propriety
- 12\*People being primarily good
- 13 Tolerance of others
- 14 Harmony with others
- 15 Courtesy
- 16 Abasement / Humbleness
- 17 A close, intimate friend
- 18 Observation of rites and social rituals
- 19 Reciprocation of greetings, favours and gifts
- 20 Repayment of both the good or the evil that another person has caused you
- 21 Face (protecting, giving, gaining and losing)
- Family /Social Orientation**
- 22 Filial piety
- 23 Chastity in women
- 24\*Kinship
- 25\*Veneration for the old
- 26 Loyalty to superiors
- 27\*Deference to authority
- 28 Hierarchical relationships by status and observing this order
- 29\*Conformity / group orientation
- 30\*A sense of belonging
- 31\*Reaching consensus or compromise
- 32\*Avoiding confrontation
- 33 Benevolent autocrat / Paternalistic
- 34 Solidarity
- 35\*Collectivism
- Work Attitude**
- 36 Industry (working hard)
- 37 Commitment

- 38 Thrift (saving)
- 39 Persistence (perseverance)
- 40 Patience
- 41 Prudence (carefulness)
- 42 Adaptability
- Business Philosophy**
- 43 Non-competition
- 44\*Not guided by profit
- 45\*Guanxi (personal connection or networking)
- 46\*Attaching importance to long-lasting relationship not gains
- 47 Wealth
- 48 Resistance to corruption
- 49 Being conservative
- 50\*Morality
- Personal Traits**
- 51\*Te (virtue, moral standard)
- 52 Sense of righteousness / Integrity
- 53 Sincerity
- 54 Having a sense of shame
- 55\*Wisdom / Resourcefulness
- 56 Self-cultivation
- 57 Personal steadiness and stability
- 58 Keeping oneself disinterested and pure
- 59 Having few desires
- 60\*Being gentleman anytime
- 61\*Obligation for one's family and nation
- 62\*Pragmatic / to suit a situation
- 63\*Contentedness with one's position in life
- Time Orientation**
- 64\*Past-time oriented
- 65\*Continuity / time viewed as circular rather than linear
- 66\*Taking a long rang view
- Relationship with Nature**
- 67\*The way (Tao)
- 68\*Fatalism / Karma (believing in one's own fate)
- 69\*Yuarn
- 70\*Harmony between man and nature
- 71\*Unity of Yin and Yang