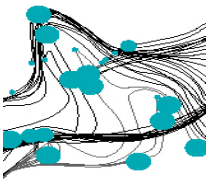

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The Effect of Cultural Difference on the Perception of Online Ordering Website Design

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Abstract

Purpose: Online food ordering business is heating up in China and Western Europe. Many companies, like NL-based *takeaway.com*, DE-based *delivery hero*, UK-based *Just Eat*, CN-based *ele.com,* which are specialized in online food ordering and home delivery, raised millions of dollars to develop their online ordering business. The usability of online ordering website has a critical effect on how smooth users communicate through the website, thus influencing the online ordering business. Based on Hofstede's cultural dimensions, this study investigated whether there are some differences in preference of design of websites for online food ordering between China and the Western European countries, mainly the Netherlands and Germany, and how cultural difference influences users' perception of online ordering website design.

Method: A 2*2 experiment was conducted to investigate how cultural differences between China and Western European Countries influence the perception of design of websites for online food ordering. Four websites were designed, two websites with Chinese design characteristics, one in Chinese for Chinese participants and one in English for Western European participants, and two websites with Western European design characteristics, one in Chinese for Chinese participants and one in English for Western European participants. System Usability Scale, User Experience Questionnaire and qualitative questions were used to measure the perception of websites in this study. All the respondents were college students since they are one of the main users of online ordering websites. We hypothesized that in this study, Western European students emphasize classical usability criteria and rated Western European version of website higher, and Chinese students emphasize additional user experience criteria rated Chinese version of website higher.

Results: The research results did not support the second hypothesis that Chinese participants prefer Chinese version of website and Western European participants prefer Western European version of website. The results showed that both Western European participants and Chinese participants preferred the website with Western European characteristics. In addition, Chinese students tended to be more critical of both websites than western European participants. The results of the qualitative data analysis in this study were congruent with the first hypothesis. Chinese participants commented more about visual appearance and they wanted more information like daily recommendation, while Western European participants cared more about the fundamental functions and information.

Conclusion: There are several possible reasons contributing to the inconsistency between the second hypothesis and the research findings. Since all participants received high education and forty percent of Chinese participants in this study had experience living or studying in the Netherlands, they were influenced by international education and western European culture. Their preference does not represent cultural dimensions, since they are thinking outside the cultural box to some degree. And many Chinese participants are majoring in software engineering, which is website design related. Chinese participants were thinking in a professional way and thus more critical on the website design. However, qualitative data revealed their cultural preference indeed.

Keywords: usability, user experience, online ordering website, cultural usability

Contents

1. Introduction

Online food ordering websites are heating up in China and European countries. Companies like *Takeaway.com* headquartered in The Netherlands, *Just-Eat* headquartered in UK, specialized in online food ordering and home delivery, face fierce competition in Europe. There are more companies specialized in online food ordering and home delivery facing fierce competition in China.

Culture influences user habits and may therefore contribute to different preference in website design. In order to appeal to local customers, online ordering websites need localized versions before published abroad. For example, the user interfaces of Domino's pizza Website in China and in the Netherlands are totally different in both layout and color scheme. This study investigated the differences in the perception of online food ordering website design between participants from China and Western European countries. China and Western European countries are at different scores on the cultural dimensions in Hofstede (2011), which means they have cultural differences and therefore people from these two cultures are more likely to have differences in the perception of website design.

Usability and user experience are common measurements in the perception of website design. The study started with literature reviews of usability and user experience principles, as well as cultural dimensions and cultural effects on usability, revealing that people from distinct cultures have distinct preferences of website design. Usability of the product, to simply define, means how easy it is to use the product to reach the goals (Kurosu, 2015). To make sure the product is easy or good to use, users are involved to test the product (Holzinger, 2005), which is called usability test, measuring how people perceive the product. User experience is an extending conception of usability. User experience is related with broad and blurred concepts, comprised of emotional, functional, pragmatic, hedonic, and aesthetic variables (Law, Roto, Vermeeren, Kort, & Hassenzahl, 2008). Many metrics or models were provided to unfold usability and user experience in academic studies. Developers do not follow these guidelines strictly though, since so many guidelines they can choose from. A leading usability website, usability.gov, gives over 200 usability guidelines (Cappel & Huang, 2015). Developers choose guidelines differently even oppositely based on the habits of target users and therefore no consensus of usability and user experience in website design exists. As many organizations tended to develop their business and investment funds beyond domestic and national markets, the inconsistency of usability and user experience between different cultures was disclosed to be an important topic. The international organizations started to regard on cultural differences of web design and thus a new concept, cultural usability appeared. Many studies (Marcus & Gould, 2000; Li, Sun & Zhang, 2007; Hsieh, 2015; Khan, Williams, & Pitts, 2016) investigated cultural usability based on cultural dimensions of Hofstede (1991, 2011). The results of these studies showed that cultural dimensions influence the perception of usability more or less. These studies have provided sufficient background information on cultural usability. However, none of them was conducted on online ordering website design. The difference on the perception of online food ordering website design between people from China and Western European countries, was investigated in this study. The research question of this study is as followed:

- Do cultural differences between China and Western European Countries have an effect on users' perception of online food ordering website design?

To investigate the different design characteristics of online ordering website in China and in Western Europe and afterwards apply them to cultural dimensions, 11 Chinese online ordering websites and 4 western European online ordering websites (see details in Appendix A) were explored to detect the different design characteristics. Some design characteristics were selected based on the existing studies reviewed and the 15 online ordering websites investigated. Two versions of website were designed based on the Chinese and Western European online ordering design characteristics respectively. Participants were asked to complete a questionnaire about the perception of one of the two websites.

The content of thesis will be divided into six parts. The first part is theoretical framework. By analyzing the existing literature, the definitions of usability, user experience and cultural usability will be given, as well as some metrics and principles. And also some website design characteristics based on cultural dimensions are analyzed in the existing literatures. In the second part, the research design, the participants and the materials of this study including the websites designed in this study and the questionnaire, as well as the procedure of the research method will be presented. The third part consists of the results of the data analysis. The fourth part presents the conclusion of this research, including discussions of the results, limitations, suggestions of further study and the conclusion of this study. The last two parts are the references and appendices of the questionnaire and some results of data analysis.

2. Theoretical Framework

The theoretical framework consists of three parts, including concepts of usability and user experience, the introduction of cultural dimensions, and the effects of cultural dimensions on usability and user experience of website design. This chapter will provide literature studies of the research topic and the hypotheses of the research question.

2.1 Usability and User Experience

Usability and user experience are quality attributes that assess how good products are to use. They measure users' perception of a product. In this study, participants' perception of online ordering websites was assessed based on these two attributes. Definitions and metrics of usability and user experience are introduced in this section.

Hornbæk (2006) included some important definitions of usability:

> Usability has different definitions, ‘‘the capability to be used by humans easily and effectively’’ (Shackel, 1991, p. 24); ‘‘quality in use’’ (Bevan, 1995); and ‘‘the effectiveness, efficiency, and satisfaction with which specified users can achieve goals in particular environments’’ (ISO, 1998, p. 2).

According to Shackel and Richardson (1991), usability means to what extent the user could work successfully with the artifact. Applying to this definition, Nielsen (2001) proposed a metric that a best and simplest way of measuring usability was to measure the success rate when use an interface.

Success rate meant the rate of succeeding in completing a task when you used the software products. It is an easy but admittedly coarse metric to test the usability of software products by testing the success rate of every interface. The author defined success rate as the percentage of tasks that users completed correctly. Success rate is an object metric to assess usability. However, it says nothing about the reasons of tasks failing or how well they completed the tasks (Nielsen, 2001). What is more, the metric is strongly influenced by the tasks selected to perform. Nonetheless, success rates are still commonly used for its convenience in collecting very telling data (Nielsen, 2001). One of the leading usability websites, usability.gov, also assess success rate as important. After all, nothing is more relevant if users cannot complete the task, which means user success can be defined as the bottom line of usability (Nielsen, 2001).

However, users could have no task or aim when they were asked to test the usability of the website. They were asked to do particular tasks designed by the developer, which means the usability of websites are strongly related with tasks performed. Therefore, a new metric is assessing usability from users' subjective viewpoints. Instead of counting particular tasks completed correctly, users are asked to measure usability by answering subjective questions based on the website interface design. System Usability Scale (Appendix A) is a questionnaire to test subjective usability by asking participants 10 questions of how they think of the website. System Usability Scale is a simple and reliable tool in doing usability evaluations (Brooke, 2013). It is a quick subjective assessment of usability. This scale is task-free assessment, making it superior than other usability scales, whose results will be strongly influenced by the tasks performed (Brooke, 1996). There are 10 items in System Usability Scale as seen in Appendix A, including 5 positively worded items and 5 negatively worded items (Sauro, 2015).

User experience was assessed in this study as well.

The definition of user experience in ISO is: "A person's perceptions and responses that result from the use and/or anticipated use of a product, system or service" (Bevan, 2009).

User experience overlaps usability to some extent. Although, there is no significant difference in the measures of Usability and User experience, there is a different emphasis between task performance and pleasure (Bevan, 2009). Usability emphasizes task performance, the effectiveness or efficiency when users implement the tasks. User experience emphasizes how pleasant users are experiencing the product, not only meeting the basic functions usability requests but also containing a broader range of concepts like emotion, aesthetic. Usability emphasizes classic criteria such as efficiency, effectiveness, or simplicity, while user experience includes both these classical criteria and additional criteria such as fun, aesthetics, or attractiveness (Ilmberger, Schrepp, & Held, 2008). Because of these differences, there are some differences in the scales of user experience and usability. In this study, User Experience Questionnaire was used to assess how participants perceive online ordering websites. User Experience Questionnaire is comprised of six scales, covering a comprehensive impression of user experience, measuring both classical usability criteria such as efficiency, perspicuity and dependability, and additional user experience criteria like stimulation and originality (Cymek, Venjakob, Ruff, Lutz, Hofmann, & Roetting, 2014). System Usability Scale

includes the measures of efficiency, effectiveness and dependency, covering the classical usability criteria only. Therefore, in this study, user experience is a broader concept covering usability. User Experience Questionnaire was structured into three parts: a pure valence dimension ("Attractiveness" as general impression), pragmatic quality aspects ("efficiency, perspicuity and dependability" as classical usability criteria) and hedonic quality aspects ("stimulation and originality" as additional user experience criteria) (Rauschenberger, Schrepp, Cota, Olschner, & Thomaschewski, 2013; Santoso, Schrepp, Isal, Utomo, , & Priyogi, 2016). Figure 1 shows the scale structure. Pragmatic Quality is the same as classical usability criteria and Hedonic Quality equals to additional user experience criteria.

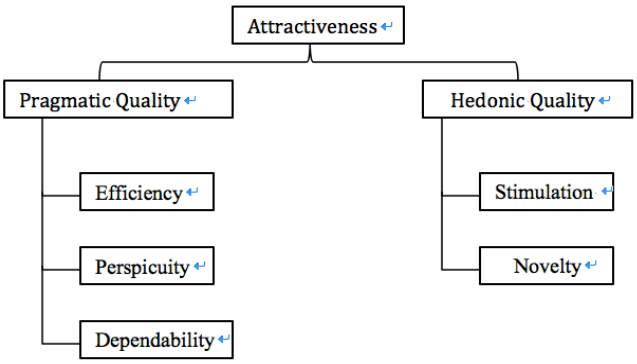


Figure 1: Scale structure of User Experience Questionnaire

Many extraneous factors influence the perceived usability and user experience. For example, Ilmberger, Schrepp, & Held (2008) stated that the perceived aesthetics had an effect on how people perceive the product' usability. Except for aesthetics, cultural differences were approved to have an influence on perceived usabilitys as well. This study was investigating usability and user experience of online ordering website based on Hofstede's cultural dimensions. Next parts will unfold these cultural dimensions, the cultural differences between the countries investigated in this research and current studies of how cultural differences influence people's perception of website design.

2.2 Cultural Dimensions

Between 1967 and 1973, the Dutch cultural anthropologist Geert Hofstede conducted detailed studies with hundreds of IBM employees in more than 70 countries to investigate how values in the workplace are influenced by culture. The Hofstede Model proposed that six dimensions of national cultures based on theses studies, which were as followed: Power Distance (PDI), Uncertainty Avoidance (UAI), Masculinity/Femininity (MAS), Individualism/Collectivism (IDV), Long/Short Term Orientation (LTO), and Indulgence/Restraint (IND) (Hofstede, 2011). Table 1 shows the definitions and characteristics of the six dimensions in Hofstede (1991).

Table 1: Definition and Key Difference of Hofstede's six cultural dimensions

Dimension	Definition	Key Difference
Power Distance Index (PDI)	The extent to which the less powerful members expect and accept that	High Power Distance: Centralized decision making, management and superiors are highly respected and have the last say in decisions.

		Low Power Distance: Everyone expects to make decisions; management hierarchies are flatter and more open to questioning.
Uncertainty Avoidance Index (UAI)	The extent to which the members of a culture feel threatened by ambiguous or unknown situations	High Uncertainty Avoidance: Strictly defined rules of behavior and formality; things that are different or unexplained can be viewed as dangerous. Low Uncertainty Avoidance: Willingness to take risks, more experimentation and/or innovative behavior
Masculinity vs. Femininity Index (MAS)	Distribution of emotional roles between genders	High Masculine: A society when emotional gender roles are clearly distinct: men are supposed to be assertive, tough, and focused on material success, whereas women are supposed to be more modest, tender, and concerned with the quality of life. High Femininity: Focuses on quality of life with an importance placed on the wellbeing of relationships.
Individualism/ Collectivism Index (IDV)	Relationship between individuals and groups	Individualism: a society in which the ties between individuals are loose: everyone is expected to look after himself or herself and his or her immediate family. Collectivism: a society in which people from birth onward are integrated into strong and cohesive in-groups, which throughout people's lifetimes continue to protect them in exchange for unquestioning loyalty
Long- vs. Short-Term Orientation Index (LTO)	Extent to which members of a cultural group are willing to accept delayed gratification of material, social, and emotional needs	Long-Term Orientation: Promotes virtue and persistence, focus towards future rewards. Short-Term Orientation: Emphasis is placed on the past and present, fosters a respect for tradition.
Indulgence /Restraint (IND)	The extent to which people try to control their desires and impulses	Indulgence: a society that allows relatively free gratification of basic and natural human drives related to enjoying life and having fun. Restraint: a society that suppresses gratification of needs and regulates it by means of strict social norms.

Hofstede investigated participants by giving a questionnaire of 100 items and based on the answers, he rated national cultures at each dimension. In this study, the countries chosen were China and Western European countries. Since the Western European participants in this study were either Dutch or German, the dimension scores of western European countries are the mean scores of Dutch and German. Table 2 shows the scores of six dimensions of China, the Netherlands and Germany, which have significant differences.

Table 2. Scores of Six Dimensions of Hofstede Model

Country	PDI	UAI	MAS	IDV	LTO	IND
China	80	30	66	20	87	24
Netherlands	38	53	14	80	44	68
Germany	35	65	66	67	83	40

Notes: PDI (Power Distance). UAI (Uncertainty Avoidance). MAS (Masculinity/Femininity). IDV (Individualism/Collectivism). LTO (Long/Short Term Orientation). IND (Indulgence/Restraint).

Among these six dimensions, the Netherlands and Germany have similar scores in Power Distance Index, Uncertainty Avoidance Index and Individualism/Collectivism Index, in which China has significantly different scores.

At a score of 80 in Power Distance Index, China is a society that accepts inequalities amongst people. People should not have ambitions beyond their rank. The Netherlands and Germany are rated in low scores on this dimension (38 and 35), which means they are societies being independent and believing equal rights. The hierarchies in these societies are for convenience only. Communication is direct and involving subordinates in The Netherlands and Germany.

At a score of 30, Chinas has a low score on Uncertainty Avoidance. The Chinese are comfortable with ambiguity; the Chinese language is full of ambiguous meanings that can be difficult for Western people to follow. The Netherlands scores 53 and Germany scores 65 on this dimension, therefore they are assumed to exhibit a slight preference for avoiding uncertainty. There is an emotional need for rules (not always working) in individual societies, that time is money; people have an inner desire to be busy and work hard; innovation may be resisted; security is an important element (Soriano, 2014).

At a score of 20, China is a society in highly collectivist, which means people consider more of the groups' interests but not necessarily of themselves'. The Netherlands and Germany, with the higher scores of 80 and 67 are Individualist societies. This means there is a high preference for a remote social framework in which individuals are expected to take care of themselves and their immediate families only (Dumitrescu & Iacob, 2012).

These cultural differences may have an effect on the perception of usability and user experience. Next part is the current studies of cultural effects on usability of website design.

2.3 The effects of cultural dimensions on Usability of website design

Culture has an effect on how people perceive the website design. Reinecke and Bernstein (2013) presented an example in their literature: Google failed to appeal to South Korean users before making its interface complex and colorful, which is a common design among South Korean websites. Users' awareness and perception of website design is regarded more and more important, since their perception is not always consistent to usability guidelines. For example, a guideline in a leading usability website, usability.gov, which is research-based (Leavitt & Shneiderman, 2006), is focusing on performance before preference. This guideline is described as "if user performance is important, make decisions about content, format, interaction, and navigation before deciding on colors and decorative graphics". While in the case study of usability from users' perspective, the results showed that Chinese users take visual appearance as more important than effectiveness (Useful, Productive, Effective, Increases performance), which is obviously against this guideline (Frandsen-Thorlacius, Hornbæk, Hertzum & Clemmensen, 2009), means they consider additional user experience criteria as more

important than classical usability criteria. As a result, cultural difference makes a significant difference in decision-making of website design.

Studies were conducted to investigate how cultural differences influence the website usability. Frandsen-Thorlacius, Hornbæk, Hertzum, & Clemmensen (2009) analyzed users' perspective of usability by comparing importance of seven scales, effectiveness, visual appearance, ease of use, efficiency, satisfaction, fun and non-frustration. After investigating how important Danish and Chinese people think of these seven scales, the authors drew conclusions on the preferred perception of usability in different culture. The results showed Chinese people place additional user experience criteria (visual appearance, satisfaction and fun) as more important, while Danish people emphasize additional user experience criteria (effectiveness and the lack of frustration) more (Frandsen-Thorlacius, Hornbæk, Hertzum, & Clemmensen, 2009). Since in this study, cultural differences is based on Hofstede's cultural dimensions and Western European countries selected in this study are at very similar scores with Denmark (PDI:18; UAI:23; MAS:16; IDV:74; LTO:35; IND:70) on Hofstede's cultural dimensions, we proposed the first hypothesis.

Hypothesis 1: Western European participants emphasize classical usability criteria (efficiency, perspicuity, dependability) and Chinese participants emphasize additional user experience criteria (stimulation, novelty) in online food ordering website design.

Many current studies (Li, Sun & Zhang, 2007; Hsieh, 2015; Khan, Williams, & Pitts, 2016) investigated cultural effects on usability based on the cultural dimensions in Hofstede(1991, 2011). These culture differences influence people's preference of website usability (Marcus & Gould, 2000; Li, Sun & Zhang, 2007; Hsieh, 2015; Khan, Williams, & Pitts, 2016). The study of cultural interface design (Khan, Williams, & Pitts, 2016) between UK and India applied design features to Hofstede's cultural dimensions as Table 3 shows.

Table 3: Adapted UI Feature Requirement on Cultural Dimensions (Khan, Williams, & Pitts, 2016)

Cultural dimensions	UI Attributes	Classification and Feature Requirements
Power Distance Index (PDI)	Information style	High power distance: Provide highly structured information
	Access to information	High power distance: Focus on authority and security of the system
Uncertainty Avoidance Index (UAI)	Menu structure	High uncertainty avoidance: Ensure minimum and single type of menu option features
		Low uncertainty avoidance: System can have many menu options with several types for features
	Text options	High uncertainty avoidance: Provide descriptive text for system features
		Low uncertainty avoidance: Provide abbreviated text for system features; Each text should be supplemented by images
Masculinity vs. Femininity Index (MAS)	Number of steps	Masculinity: Ensure limited tasks options are available for each feature
	User help	Masculinity: Provide a help button for each feature;

		Provide informative feature for user exploration
	Gender distinction	Masculinity: Ensure explicit distinction between gender and age for each feature content, help, and text option
	Aesthetic appeal	Femininity: Aesthetic appeal and color options
Individualism/ Collectivism Index (IDV)	Content style	Individualism: Provide an option for personalization and feedback; Provide images of materialism; emphasize new features of the system
		Collectivism: Provide cross-national symbol for features
Long- vs. Short-Term Orientation Index (LTO)	Navigation style	Long-term orientation: Navigation style can be varied and complex
		Short-term orientation: Overall navigation style should be simple

The investigation (Khan, Williams, & Pitts, 2016) was conducted to classify these features into four categories: must-be requirements, one-dimensional requirements, attractive requirements and indifferent requirements. The results of this study showed that cultural difference influenced the acceptance of interface attributes, which are approved in Marcus & Gould (2000) and Li, Sun & Zhang (2007) as well. For example, participants from India, a country of low uncertainty avoidance individualism, classified UI design with "Many menu options" as a must-be requirement. But there are still many features, which are scored the same between participants from UK and from India in the study. Some results are even interesting and unexpected. For instance, "Provide an option for personalization and feedback" was expected to be more attractive to UK users, since UK was scored significantly higher on the Individualism index, thus identify this as a One-dimensional requirement.

In this study, the online ordering websites were explored to detect the different design characteristics based on the some UI attributes and feature requirements in Table 3. For example, Chinese online ordering websites have many menu options with several types for features, which is a feature requirement of low power distance.

Marcus & Gould (2000) and Li, Sun & Zhang (2007) applied these dimensions into website design elements in another way, which is more comprehensive. Table 4 shows how they analyze the website elements. Li, Sun & Zhang (2007) separated these elements into five types, visual presentation, navigation, links, layout, and multimedia as Marcus & Gould (2000) did, to test on participants from Taiwan and Australia. The results showed people from different culture do have distinct preferences of web communication (usability) and these preference can be applied to improve website usability, which means the distinct preferences if used in website design can make website communication more effective (Li, Sun & Zhang, 2007).

Table 4: The web interface tendency on cultural dimension from Marcus and Gould (2000)

Cultural dimensions	Tendency in website design	Tendency in website design
Power Distance Index (PDI)	High: ■ Evenly distributed layout; ■ Deep information hierarchies; ■ Concentrating on official seal;	Low: ■ Unevenly distributed layout; ■ Shallow information hierarchies;

	Images of leaders; ■ Architecture of monuments.	■ Photographs of students rather than faculty; ■ Pictures of both genders.
Uncertainty Avoidance Index (UAI)	High: ■ Restricted choices; ■ Limited amount of data; ■ Restricted scrolling; ■ Simplicity, with concise metaphor, limited options, and restricted amounts of information; ■ Attempts to predict the results or implications of actions; ■ Navigation structure intending to prevent users from getting lost; ■ Mental models focusing on decreasing user errors; ■ Using typography, color, sound etc. to decrease ambiguity.	Low: ■ Many different choices; ■ Long scrolling webpages; ■ Acceptance of surfing and exploring, over-protection being regarded as shame; ■ Courage for navigation; ■ Mental models focusing on comprehension underlying concepts rather than narrow tasks.
Masculinity vs. Femininity Index (MAS)	Masculinity: ■ Conventional gender role distinction; Restricted actions to get quick result of work tasks; ■ Navigation oriented to discovering and control; ■ Attention attracted by games and competition; ■ Visual graphics, sound, and animation for useful purposes.	Femininity: ■ Ambiguous gender role distinction; ■ Reciprocal group action, exchange, and support; ■ Attention attracted by aesthetics, appealing to unifying values.
Individualism/ Collectivism Index (IDV)	Individualism: ■ Pictures of individuals ■ Images of young individuals ■ Images of action ■ Emphasis on action ■ Pictures of success being displayed through materialism and consumerism ■ Argumentative speech ■ Presentation of personal achievement	Collectivism: ■ Pictures of groups ■ Pictures of experienced senior leaders ■ Emphasis on state of being ■ Pictures of success being displayed through the accomplishment of social-political agendas ■ More official slogans
Long- vs. Short-Term Orientation Index (LTO)	Long: ■ Information concentrating on practice and practical value ■ Relationships as a reference of information and believability ■ Patience being required to attain ■ Result and reach goals	Short: ■ Information concentrating on the truth and certainty of notions ■ Regulations as a reference of information and credibility ■ Quickly getting results and reaching goals

In this study, Chinese online ordering websites, which tends to have the web interfaces with high power distance (at a score of 80 as shown in Table 2) tendency, have borderlines to evenly distribute the content layout as shown in Table 4. In the meantime, the western European online order websites tend to have unevenly distributed layout, which is consistent with low power distance index (at an average score of 36.5 as shown in Table 2).

These current literatures (Khan, Williams, & Pitts, 2016; Marcus & Gould, 2000; Li, Sun & Zhang, 2007) verified that people from different culture do have distinct perception on website design, which results in the second hypothesis for this study.

Hypothesis 2: Chinese students prefer the website designed with Chinese design characteristics and Western European students prefer the website designed with Chinese design characteristics.

3. Methods

The methods of the thesis will be divided into four parts. The first part presents the research design of this study and how it is organized. The second part is analyzing the character of the participants and why they are chosen. The third part is providing questionnaire scales supported by some existing literature. The last part is the procedure of this study, about how participants were asked to complete the questionnaire step by step.

3.1 Design

This study investigated cultural difference in website design based on users' preference, which was focusing on subjective assessment. There was no task performed in this research. Participants were asked to complete a questionnaire based on their subjective emotions towards the takeaway websites designed in this study.

A 2*2 experiment was conducted. The independent variables are participants from different cultural background (China and Western European countries). The dependent variables are websites designed based on different cultural characteristics (China and Western European countries). The results disclosed if there interactive effects between the independent variables and dependent variables. Four versions of websites were designed in this study, Chinese version in Chinese, Chinese version in English, Western European version in Chinese and Western European version in English. Four groups of participants were asked to complete a questionnaire with one of the four versions of websites. Chinese participants were asked to complete a questionnaire, either Chinese version in Chinese or Western European version in Chinese. Western European participants were asked to complete a questionnaire, either Chinese version in English or Western European version in English.

All the participants were assumed to have the ability to compare different websites and measure the usability and user experience of the websites. After analyzing the four versions of questionnaires, the results showed whether their cultural background had an effect on how they perceive the website or not.

3.2 Participants

This study was conducted among college students in China and in Western European countries (mainly Dutch students or German students who are studying in the Netherlands). They are aged from 18 to 45. Table 5 shows the mean ages of each group are no big difference, ranging from 22 to 24. We got 64 male participants and 63 female participants, which meets the needs of balanced gender. Each group meets the gender balance as shown in the table. About half of them are bachelors and the other

half are masters, except for the 3 PHDs. College students are one of the largest group using Internet, where they are encouraged to search for literature and jobs, to have social life and teamwork together. They have more cognition of what high level usability or user experience websites look like. In addition, since most college students do not live with their parents, they start to make meals for themselves. College is one of the best times in life to order delivery food. Among all the participants, as shown in Table 5, more than sixty percent of Chinese students used mobile apps to order and more than sixty percent of western European students ordered online food on takeaway websites. Chinese students ordered more frequently than western European students and regarded delivery time/discount a bit more important. Western European students took price as more important than Chinese students, and know more about what to eat before they order.

Table 5: Respondents for each version of questionnaire

		Total	CC	CWE	WEC	WEWE
	Number	127	33	30	33	31
Gender	Male	64	16	17	18	13
	Female	63	17	13	15	18
Education	Bachelor	63	8	18	15	22
	Master	61	24	11	17	9
	Doctor	3	1	1	1	0
Device	Smart phone	62	17	13	22	10
	Laptop	49	12	12	7	18
	Desktop	12	3	4	3	2
	Tablet	4	1	1	1	1
Age	Mean	23.58	23.43	23.43	22.35	24.06
	Std. Deviation	3.01	4.67	4.67	2.73	1.54
Time Consider	Mean	65.89	68.85	59.27	63.27	71.94
	Std. Deviation	24.38	28.62	22.34	28.16	13.99
Price Consider	Mean	72.60	67.58	81.57	61.36	81.23
	Std. Deviation	24.08	26.21	17.84	25.29	19.72
Discount Consider	Mean	54.57	58.12	48.83	55.82	55.03
	Std. Deviation	27.44	29.86	24.32	27.74	27.74
Know Beforehand	Mean	3.31	3.52	3.30	3.09	3.35
	Std. Deviation	1.10	1.03	1.02	1.26	1.05
How often	Mean	2.25	3.18	1.87	2.48	1.39
	Std. Deviation	1.36	1.38	1.22	1.37	.56

NOTE: WEC=Western European version for Chinese students

CWE=Chinese version for Western European students

WEC=Western European version for Chinese students

WEWE=Western European version for Western European students

The participants were divided into four groups, Chinese students filling in the questionnaire with Chinese version website, Chinese students filling in the questionnaire with Western European version website, Western European students filling in the questionnaire with Chinese version website and Western European students filling in the questionnaire with Western European version website. Table 5 shows the numbers of qualified respondents in each group of participants, 33 Chinese students filling in the questionnaire with Chinese version website, 30 Chinese students filling in the questionnaire with Western European version website, 33 Western European students filling in the questionnaire with Chinese version website and 31 Western European students filling in the questionnaire with Western European version website. All the uncompleted questionnaires were deleted from the analyzing data.

3.3 Materials

3.3.1 Independent Materials

Based on the analysis of 11 Chinese websites and 4 western European websites shown in Appendix A, the different website characteristics between China and Western Europe adapted to cultural dimensions shown in Table 1 and Table 2 were disclosed. Table 6 shows the summary of different characteristics between Chinese and Western European online websites.

From the website viewing, three user interface attributes, menu structure (food category, match), content style (discount information, content layout) and navigation style (title bar, bottom bar, search bar, location bar, backward and forward button), were selected to investigate in this study among the participants from China and Western European.

Among these attributes, people from the country of high uncertainty avoidance like menu structured with minimum and single type of menu option features. People from the country of low uncertainty avoidance like menu structured with more options and menu option features as Table 3 shows. Western European websites use top-down menus, which are with single menu option feature. Chinese online ordering websites provide many menus about food category and match strategies like nearest distance, delivery price. China scores lower on Uncertainty Avoidance Index (30, shown in Table 2) than Western European countries (mean score of the Netherlands and Germany: 59), which is consistent with the online ordering website design characteristics. The functions of search bar, location bar and backward/forward button are preventing users from getting lost, which applies to uncertainty avoided. Chinese online ordering websites put the search bar and location bar on unattractive place and have no backward/forward button. On contrary, Western European online ordering websites locate search bar and location bar in the obvious place, center of the title bar. And they usually have backward and forward buttons.

Individual people do not like the website with many slogans as in Table 3 shows, which collectivist people prefer. China was scored 20 on Individualism/Collectivism Index shown in Table 2, while the mean score of the Netherland and Germany is 73.5. Chinese online ordering websites have many restaurants, and they are all presented with discount slogans, applying to website features of

Collectivism. On contrary, western European online ordering websites present less restaurants and less discount information with different slogans, applying to website features of Individualism.

People from countries with high Power Distance characters are more patient to deal with website with mixed information structure and evenly layout as explained in Table 4. In Chinese websites examined in this study, there is lots of mixed information with borderline design to make layout evenly structured. However, people from low Power Distance countries like the information presented as clear and simple as possible but unevenly layout without obvious borderline design. China was scored 80 on Power Distance Index shown in Table 2. The mean score of Dutch and German score was 36.5, lower than Chinese score. Therefore, Chinese people will prefer websites with more information and colors as Chinese website features shown in Table 6, while Western European people will prefer websites with only useful information and less color as Western European website features shown in Table 6.

Table 6: The website characteristics adapted to cultural dimensions

Cultural dimension	Chinese websites	Western European websites
Uncertainty Avoidance Index	Unattractive search bar and location bar	Central search bar and location bar
	Without forward and backward button	With forward and backward button
	Many options (Food category and match)	Minimum and single style (Food category and match)
Individualism/ Collectivism Index	Many slogans (discount information)	Less slogans (discount information)
Power Distance Index	Many small areas (Content layout)	Only several big areas (Content layout)
	All kinds of information in one region (title bar, bottom bar)	Unified information in one region (title bar, bottom bar)

The websites designed based on these different characteristics in Table 6 are Figure 2, Figure 3, Figure 4 and Figure 5. Figure 2 is a Chinese website designed based on Chinese online ordering websites and Figure 3 is an English version of Figure 2. Figure 4 is a Chinese website designed based on Western European online ordering websites and Figure 5 is an English version of Figure 4.

Figure 6 with region numbers divides the English version of Chinese website into 6 parts. Region 1 is Title bar. Region 2 represents Search bar and Location bar. Region 3 is Food category and match. Region 4 is Content layout of the website. Region 5 is Bottom bar. Regions 6 are Discount information. Figure 7 divides the English version of Western European website into 7 parts. Region 1-6 represents the same parts as Figure 6. Regions 7 are Backward and Forward buttons.

Figure 2: Chinese website version in Chinese

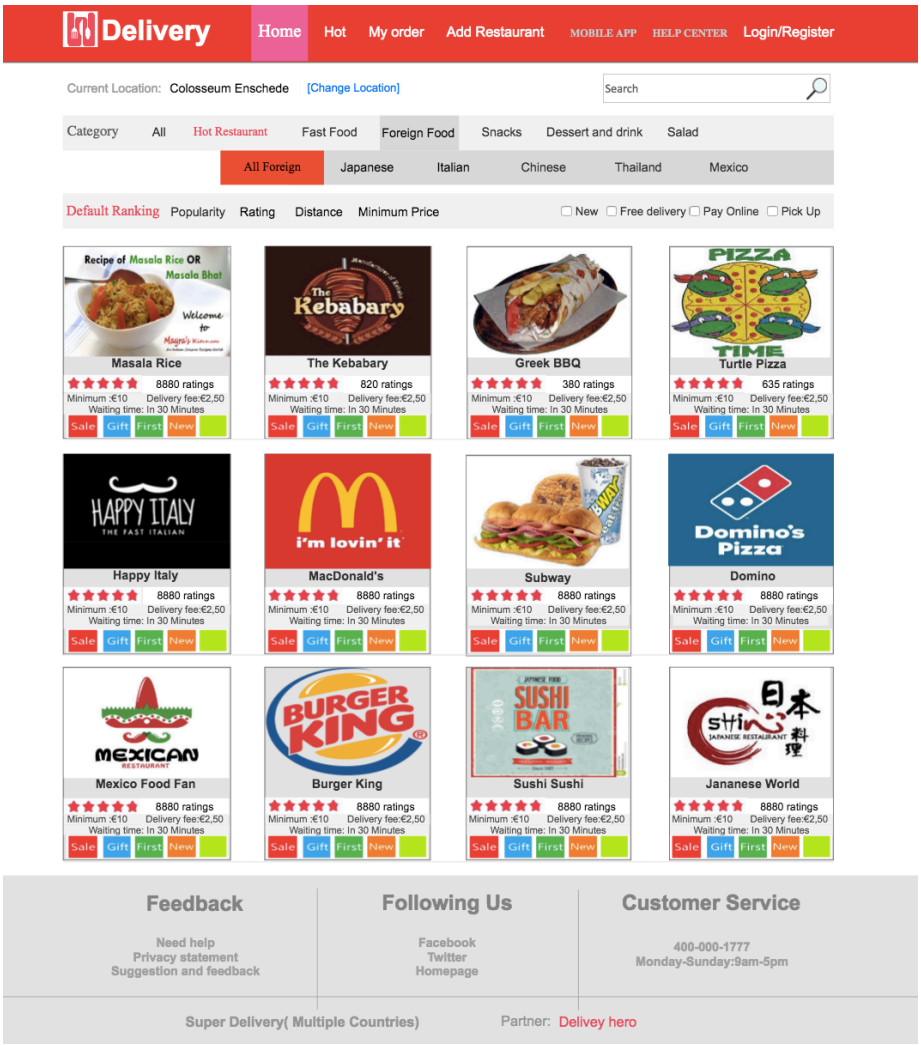


Figure 3: Chinese website version in English

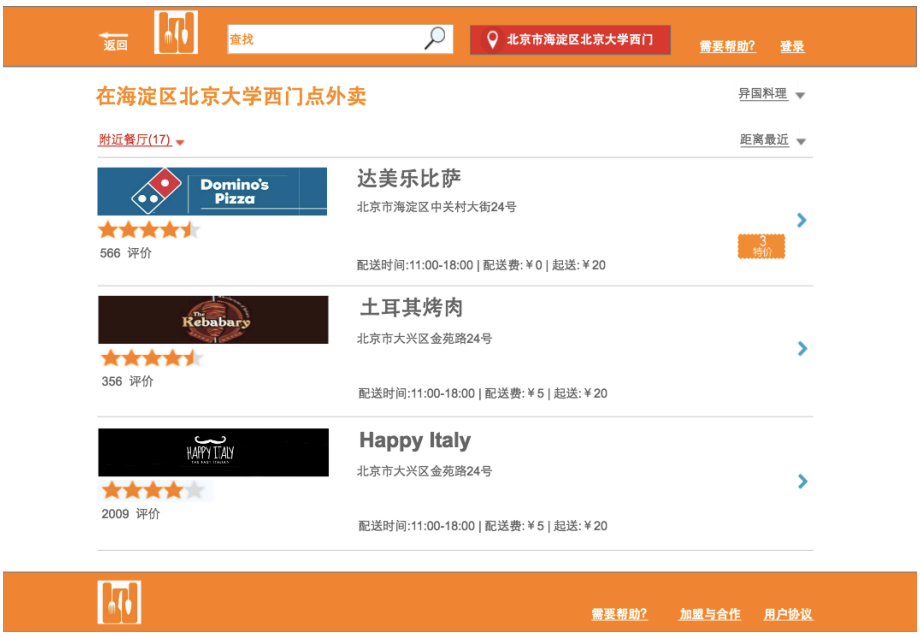


Figure 4: Western European website version in Chinese

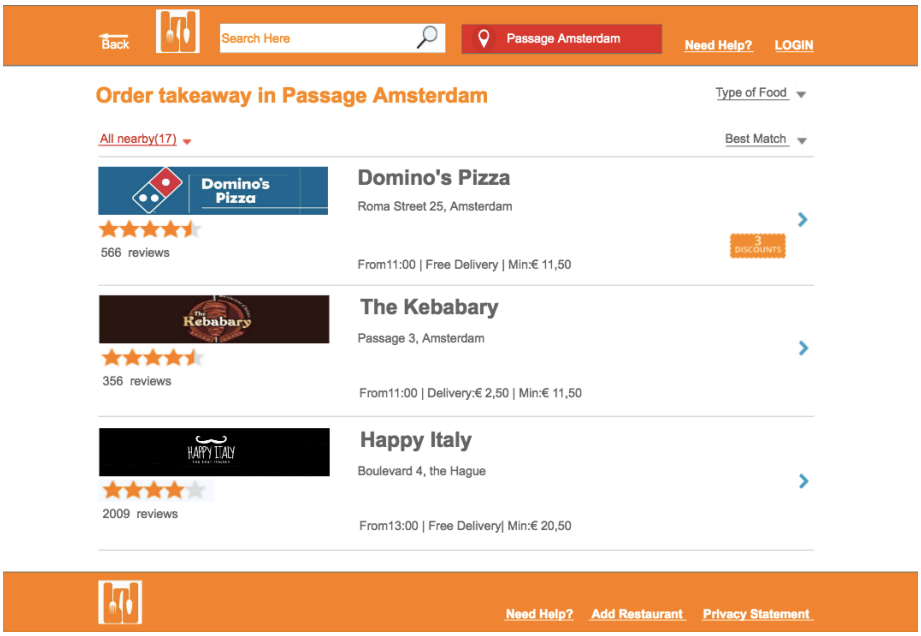


Figure 5: Western European website version in English

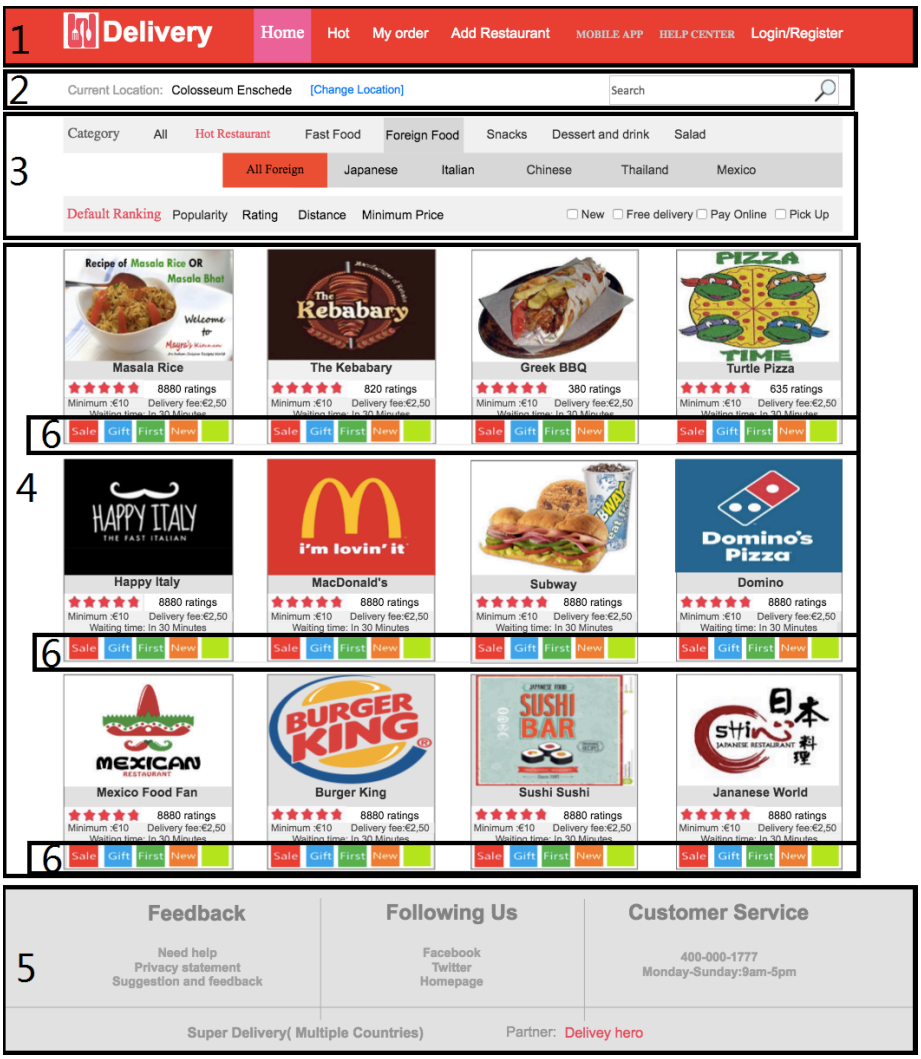


Figure 6: Chinese version in English with region numbers

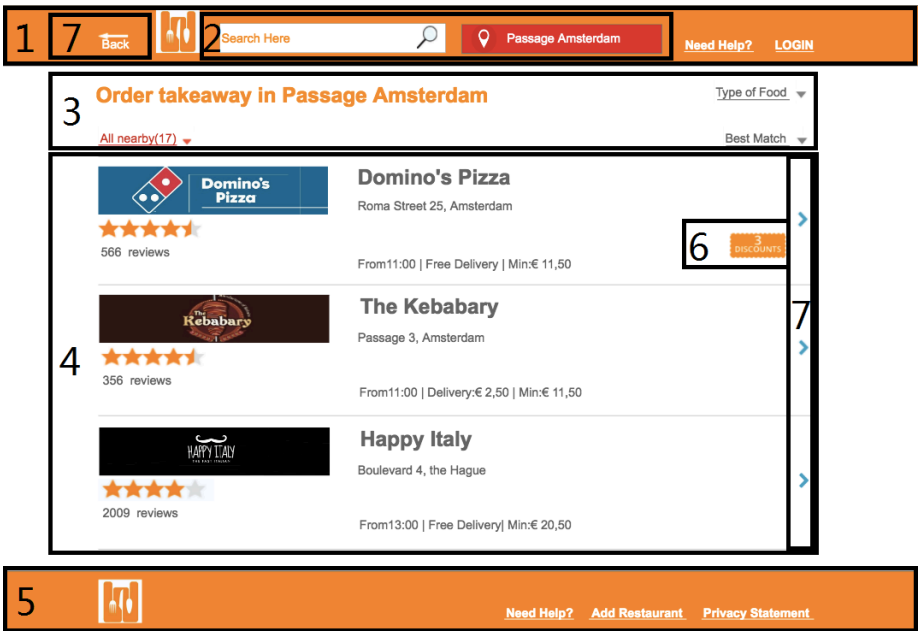


Figure 7: Western European website version in English with region numbers

3.3.2 Dependent Materials

Each group of participants was asked to complete a questionnaire with 36 items to investigate the usability and user experience of one of the websites and why they like or dislike different regions of the website.

The first part of the questionnaire is a scale, System Usability Scale, The first scale, System Usability Scale (SUS), contains 10 items to measure the usability of the website, see appendix C. To extract additional information from SUS, data dimensionality reduction (factor analysis) was conducted.

The first step of factor analysis was to examine if the items of SUS were suitable to conduct factor analysis. The value of Kaiser–Meyer–Olkin (KMO) Measure of Sampling Adequacy indicates how much the data is suitable to conduct factor analysis. It ranges from 0 to 1. When the value is higher, the scale is more suitable to conduct a factor analysis. Akbulut, Şendağ, Birinci, Kılıçer, Şahin & Odabaşı (2008) gives some summaries about KMO values. Values between 0.5 and 0.7 are normal, values between 0.7 and 0.8 are good, values between 0.8 and 0.9 are great, and values above 0.9 are superb (Hutcheson and Sofroniou, 1999). In the performance of factor analysis, the KMO value (Appendix B, Table a) of System Usability Scale is 0.859, which means the items are great to conduct factor analysis.

The second step was feature extraction. The result in Table b (Appendix B) shows the extraction results of component analysis using principal component analysis (PCA). SUS items were eventually extracted into two components based on PCA. Item 4 and 10 were extracted into a group, while the other items were of a group. The content of item 4 (“I think I would need the support of a technical person to be able to use this website”) and item10 (“I needed to learn a lot of things before I could get going with this website”) were grouped into one scale. According to Lewis & Sauro (2009)

and Sauro (2015) component 2 was named Learnable, which is not proper, since item 7 ("I would imagine that most people would learn to use this website very quickly") is also learnable item. Item 4 and Item 10 are questions about if users need extra information when they use the website, which should be named as "Usability-Dependency". The group of 8 other items was another scale, Usability-ISO with questions about overall usable (item3, item8) or Efficiency (item2，item6, item7), Effectiveness (item5) and Satisfaction (item1, item9), defined as usability attributes in ISO (1998).

The items of these scales are supposed to be reliable inter-correlated in data analysis. Reliability analysis was conducted for these two scales. The Cronbach's alpha coefficient normally ranges from 0 to 1. The higher the value is, more reliable the scale is. According to Nunnally (1978), Cronbach's alpha coefficients values above 0.7 are regarded as highly acceptable, values between 0.6 and 0.7 are considered as considerable acceptable, values less than 0.6 are regarded as unsatisfactory. In this study, the Cronbach's alpha coefficients values of the two scales in this study are as following shown in Appendix A Table c: System Usability Scale-ISO (0.852), System Usability Scale-Dependency (0.645). The results of reliability analysis showed that these two scales are acceptable.

The second part is a questionnaire measuring user experience, named User Experience Questionnaire. User Experience Questionnaire consists of 26 pairs of contrasting attributes. Using 7-likert scales in this study to measure the gradations between the opposites, the 7-likert scales express the agreement of the opposites. This questionnaire is comprised of six scales with 26 items as below. **1**: Attractiveness is the overall impression of the product, making up of six items (annoying/enjoyable, good/bad, unlikable/pleasing, unpleasant/pleasant, attractive/unattractive, friendly/unfriendly). It is similar to questions like "Do you like it or dislike it?" **2**: Perspicuity is the clearness or understandability of the product, comprised of 4 items (not understandable/understandable, easy to learn/difficult to learn, complicated/easy, clear/confusing). It is similar to questions like "Is it easy to get familiar with the product?" **3**: Efficiency scale comprised of 4 items (fast/slow, inefficient/efficient, impractical/practical, organized/cluttered). It is similar to questions like "Can users solve their tasks with the product without unnecessary effort?" **4**: Dependability scale is comprised of 4 items (unpredictable/predictable, obstructive/supportive, secure/not secure, meets expectations/does not meet expectations). It is similar to questions like "Does the user feel in control of the interaction?" **5**: Stimulation scale is comprised of 4 items (valuable/inferior, boring/exciting, not interesting/interesting, motivating/demotivating). It is similar to questions like "Is it exciting and motivating to use the product?" **6**: Novelty scale is comprised of 4 items (creative/dull, inventive/conventional, usual/leading edge, conservative/innovative). It is similar to questions like "Is the product innovative and creative?"

UEQ is comprised of six scales, covering a comprehensive impression of user experience. The format of the questionnaire supports users to immediately express feelings, impressions, and attitudes that arise when they use a product. The six scales measure both classical usability aspects (efficiency, perspicuity, dependability) and user experience aspects (novelty, stimulation). Reliability analysis was conducted among the six scales (efficiency, perspicuity, dependability, attractiveness, novelty, stimulation). The Cronbach's alpha coefficients values of the eight scales in this study are as following shown in Appendix A Table c: User Experience Questionnaire-Attractiveness (0.850), User Experience

Questionnaire-Perspicuity (0.746), User Experience Questionnaire-Efficiency (0.818), User Experience Questionnaire-Dependability (0.720), User Experience Questionnaire-Stimulation (0.785), User Experience Questionnaire-Novelty (0.789). The results of reliability analysis showed that all the scales are acceptable.

The third part is hotspot questions. In a Hot Spot question, users indicate the answer by clicking a specific region of an image as Figure 6 and Figure 7 show. A Hot Spot refers to a pre-defined range of pixel coordinates within an image that when clicked indicates a correct answer. Participants were required to choose like/dislike partial regions of the website by clicking the region once/twice, or choose neutral if not clicking this region. After clicking the regions, participants gave the reasons why they like or dislike this part, and give the overall comments of the website. These are qualitative data.

The fourth part of the questions in this study is general information or characteristics of the participants. “What device are you using to do the survey?” “What is your age?” “What is your gender?” “What is your nationality?” “What is your highest education level?” “How many years have you been studying in the Netherlands?” “To what extent you will take delivery time into consideration when you order delivery food?” “To what extent you will take price into consideration when you order delivery food?” “To what extent you will take sales into consideration when you order delivery food?” “Do you know beforehand what you are going to order when you order delivery food online?” “How do you usually order food?” “How often do you order delivery food online?” The answers of these questions are complemented information of the participants.

3.4 Procedure

There are 4 questionnaires in this study, Chinese version in Chinese, Chinese version in English, Western European version in Chinese, Western European version in English. Chinese participants were asked to complete one of two versions in Chinese randomly. Western European participants were asked to complete one of two versions in English randomly.

When participants entered the questionnaire, the first part is an introduction of this research and the researcher. Then they started with a description asking them to take a close look at the webpage. One of the webpages designed was shown. After that, they went to next page of the questionnaire, which are System Usability Scale and User Experience Questionnaire. And when they entered another page afterwards, the same webpage shown at the beginning appeared again with frames at different areas of the webpage. An introduction in front of the webpage asked participants to click the region once if they liked it, and click twice if they did not like it. They were supposed to click at least two areas and gave reasons why they like or dislike the area. Then participants went to the last page of the questionnaire, which is about their personal characteristics. And the questionnaire was finished when they clicked next and saw a thank you letter.

The questionnaires are shown in Appendix C. After analyzing the qualified questionnaires of the study, how participants from different culture perceive takeaway website design are discussed.

4. Results

This chapter presents the results of this research.

4.1 Scales Results

This part will show the results of Between-Subjects effects and the difference of mean values in perceived usability and user experience between the four groups. Table d (Appendix A) shows the results of Tests of Between-Subjects Effects, which represented if there was an interaction effect or a main effect between the two variables based on the 8 scales. The tables of statistical results in this section show the mean scores of two variables, dependent variables (website version: Chinese website, Western European website) and independent variables (student nationality: Chinese students, Western European students). Univariate analysis of variance was performed to compare the mean scores of each group.

4.1.1 System Usability Scale

System Usability Scale has 10 items, extracted into two scales in this study, System Usability Scale-ISO and System Usability Scale-Dependency.

System Usability Scale-ISO

This scale includes 8 items. To investigate if there was an interaction effect between the two variables or a main effect based on this scale, the variance analysis was performed. The analysis of variance in Appendix A Table d showed that there was no significant interaction effect found and there was no significant main effect found for the variable website version. However, there was a significant main effect found for the variable website version, $F(1, 126)=15.522$, $p=0$. Table 7 revealed that the mean scores of usability ISO of Chinese website was significantly lower than that of Western European website.

Table 7: mean scores construct usability ISO, 7-likert scale

	Chinese students		Western European students		Total	
	Mean	Std. Deviation	Mean	Std. Deviation	Mean	Std. Deviation
Chinese website	4.30	1.09	4.15	0.99	4.22	1.04
Western European website	4.84	1.13	4.98	0.67	4.91	0.93
Total	4.57	1.13	4.57	0.93		

System Usability Scale-Dependency

This scale includes 2 items. The variance analysis was performed to investigate if there was an interaction effect between the two variables or a main effect based on this scale. The analysis of variance in Appendix A Table d showed that there was no significant interaction effect found and there was no significant main effect found for the variable website version. However, There was a significant

main effect found for the variable student nationality, F (1, 126)=5.538, sig.<0.05. Table 8 revealed that Western European students were rating higher than Chinese students especially in Western European website, but the difference was not very big.

Table 8: mean scores construct usability dependency, 7-likert scale

	Chinese students		Western European students		Total	
	Mean	Std. Deviation	Mean	Std. Deviation	Mean	Std. Deviation
Chinese website	5.36	1.29	5.55	1.14	5.45	1.22
Western European website	5.36	1.53	6.19	0.73	5.77	1.27
Total	5.36	1.40	5.88	1.00		

4.1.2 User Experience Questionnaire

User Experience Questionnaire is comprised of 26 items, which were divided into 6 scales, User Experience Questionnaire-Attractiveness, User Experience Questionnaire-Perspicuity, User Experience Questionnaire-Efficiency, User Experience Questionnaire-Dependability, User Experience Questionnaire-Stimulation and User Experience Questionnaire-Novelty.

User Experience Questionnaire-Attractiveness

This scale includes 6 items. The variance analysis was performed to investigate if there was an interaction effect between the two variables or a main effect based on this scale. The analysis of variance in Appendix A Table d showed that there was no interaction effect found between the two variables and no main effect found for the variable student nationality. However, there was a main effect found for the variable website version, F (1, 126) =0.822, p=0.005. Table 9 revealed that Chinese website was scaled in significant lower average score than Western European website.

Table 9: mean scores construct user experience attractive, 7-likert scale

	Chinese students		Western European students		Total	
	Mean	Std. Deviation	Mean	Std. Deviation	Mean	Std. Deviation
Chinese website	3.54	1.47	3.51	0.94	3.52	1.24
Western European website	4.23	1.20	3.97	0.78	4.11	1.02
Total	3.88	1.38	3.75	0.89		

User Experience Questionnaire-Perspicuity

This scale includes 4 items. The variance analysis was performed to investigate if there was an interaction effect between the two variables or a main effect based on this scale. The analysis of variance in Appendix A Table d showed that there was an significant interaction effect found between the two variables F (1, 126)=5.186, P<0.05. This result means that there was a significant difference in

how Chinese participants and Western European participants rated perspicuity. And there was a main effect found for the variable website version, F (1, 126)=14.249, p=0. There was no main effect found for the variable student nationality. Table 10 revealed that both Chinese students and Western European students rated the western website higher, but the difference was much bigger for the Western European students.

Table 10: mean scores construct user experience perspicuity, 7-likert scale

	Chinese students		Western European students		Total	
	Mean	Std. Deviation	Mean	Std. Deviation	Mean	Std. Deviation
Chinese website	4.31	1.27	4.13	1.37	4.23	1.31
Western European website	4.63	1.24	5.42	0.83	5.01	1.13
Total	4.47	1.25	4.79	1.29		

User Experience Questionnaire-Efficiency

This scale includes 4 items. The variance analysis was performed to investigate if there was an interaction effect between the two variables or a main effect based on this scale. The analysis of variance in Appendix A Table d showed that there was no interaction effect found and there was no main effect found for the variable student nationality. But there is a significant main effect found for the variable website version, F (1, 126)=10.771, p=0.001. Table 11 revealed that Chinese website was rated in lower average score than Western European website.

Table 11: mean scores construct user experience efficiency, 7-likert scale

	Chinese students		Western European students		Total	
	Mean	Std. Deviation	Mean	Std. Deviation	Mean	Std. Deviation
Chinese website	3.80	1.30	4.02	1.28	3.90	1.28
Western European website	4.36	1.41	4.91	0.95	4.63	1.23
Total	4.08	1.37	4.47	1.20		

User Experience Questionnaire-Dependency

This scale is comprised of 4 items. The variance analysis was performed to investigate if there was an interaction effect between the two variables or a main effect based on this scale. The analysis of variance in Appendix A Table d showed that there was no significant interaction effect found between the two variables. There was no main effects found for the variable website version and the variable student nationality as well.

Table 12: mean scores construct user experience dependency, 7-likert scale

	Chinese students	Western European students	Total

	Mean	Std. Deviation	Mean	Std. Deviation	Mean	Std. Deviation
Chinese website	4.22	1.21	4.08	1.11	4.15	1.15
Western European website	4.25	1.22	4.73	0.72	4.48	1.03
Total	4.23	1.20	4.41	0.98		

User Experience Questionnaire-Stimulation

This scale includes 4 items. The variance analysis was performed to investigate if there was an interaction effect between the two variables or a main effect based on this scale. The analysis of variance in Appendix A Table d showed that there was no interaction effect found and no main effect found for the variable website version. However, there was a main effect found for the variable student nationality, $F(1, 126)=4.119$, $p<0.05$. Table 13 revealed that Chinese students rated lower average score than Western European students.

Table 13: mean scores construct user experience stimulation, 7-likert scale

	Chinese students		Western European students		Total	
	Mean	Std. Deviation	Mean	Std. Deviation	Mean	Std. Deviation
Chinese website	3.25	1.22	3.70	0.99	3.46	1.13
Western European website	3.65	1.20	3.99	0.93	3.82	1.08
Total	3.45	1.22	3.85	0.96		

User Experience Questionnaire-Novelty

This scale includes 4 items. The variance analysis was performed to investigate if there was an interaction effect between the two variables or a main effect based on this scale. The analysis of variance in Appendix A Table d showed that there was no significant interaction effect found between the two variables. There was no main effects found for the variable website version and the variable student nationality as well.

Table 14: mean scores construct user experience novelty, 7-likert scale

	Chinese students		Western European students		Total	
	Mean	Std. Deviation	Mean	Std. Deviation	Mean	Std. Deviation
Chinese website	3.17	1.54	3.63	0.86	3.39	1.27
Western European website	3.31	1.04	3.23	0.90	3.27	0.97
Total	3.24	1.31	3.43	0.89		

4.2 Hotspot Results

In a Hot Spot question, users indicate the answer by clicking a specific area of an image. Participants clicked once meaning they liked this area and clicked twice showing disliking. After they clicked the regions, they provided the reasons of why they liked or disliked the regions they clicked.

4.2.1 Statistical Results

Table 15 shows the numbers when participants clicked a specific region.

The numbers of total like and dislike comments revealed that both Chinese students and Western European students like Western European version more (Chinese website: 72+91 likes, 70+68 dislikes; Western European website: 83+103 likes, 51+44 dislikes), and that Western European students gave more positive answers of both versions (Chinese students: 72+83 likes, 70+51dislikes; Western European students: 91+103 likes, 68+44 dislikes). This result was consistent with the statistics results of scales.

After analyzing the sum of like/dislike counting numbers of all regions, the counting numbers of each region are analyzed. Chinese students have less likeness in the design of Title bar (Region 1 in Figure 6 and Figure 7) in Chinese website than Western European students. The design of Title bar in Western European website (Region 1 in Figure 7) was appreciated by both groups of students.

Search bar and Location bar (Region 2 in Figure 6 and Figure 7) in both versions of websites were appreciated by both groups of students, especially the Search bar in Western European website (Region 2 in Figure 7) was well reputed with many (15+18) positive comments (like) and no negative comments (dislike) by both groups.

Food category and match in Chinese website (Region 3 in Figure 6) gained a lot of positive comments (26+35) and less negative comments (13+9). While Food category and match in Western European website (Region 3 in Figure 7) were much less appreciated （8+10 likes, 8+11 dislikes）by both groups.

Content layout in Western European website (Region 4 in Figure 7) was preferred by both groups than Content layout in Chinese website (Region 4 in Figure 6). For Content layout in Chinese website, there were half students liking and half disliking in both groups and Content layout in Western European website gained much more likes than dislikes from both groups.

Both groups liked Discount information in Western European website (Region 5 in Figure 7) and disliked Discount information in Chinese website (Region 5 in Figure 6). Discount information in Chinese website had much more dislikes (5+10) than likes (3+2), while Discount information in Western European website had much more likes (7+10) than dislikes (3+1) from both groups.

There was no significant difference in how both groups of students perceive Bottom Bar in Chinese and Western European websites (Region 6 in Figure 6 and Figure 7).

In Chinese website, there are no Backward and forward buttons which exist in Western European website (Region 7 in Figure 7). The comments of Backward and forward buttons were equal between like and dislike in both groups.

Table 15：Numbers of Hotspot like and dislike regions

	CC		CWE		WEC		WEWE	
	LIKE	DISLIKE	LIKE	DISLIKE	LIKE	DISLIKE	LIKE	DISLIKE
Title bar	4	12	13	10	10	4	11	4
Search bar	8	2	10	3	15	0	18	0
Location bar	10	4	12	2	10	3	11	4
Food category and match	26	13	35	9	8	8	10	11
Content layout	12	14	10	11	17	6	24	2
Discount information	3	5	2	10	7	3	10	1
Bottom bar	6	4	9	11	4	4	5	7
Backward forward button	/	/	/	/	10	10	10	8
Comments	3	16	0	12	2	13	4	7
Total	72	70	91	68	83	51	103	44

NOTE: WEC=Western European version for Chinese students

CWE=Chinese version for Western European students

WEC=Western European version for Chinese students

WEWE=Western European version for Western European students

4.2.2 Qualitative Results

After the participants chose the regions they liked or disliked, they were supposed to give some reasons why they liked or disliked this region. The comments revealed more details about how they perceive these websites and supported the first hypothesis.

Western European students gave more positive answers. Most of these positive comments were overall comments about the function itself, which they think as useful or clear. Here are some examples: “useful”, “I can choose the category to find what I want to order”, “It is easy to find food with categories”, “I can choose quickly”, “It has all the necessary information”, “simple and convenient”, “easy, commonly used”, “It is useful to have this functions on the top”. These comments are about efficiency and clearness, which means Western European students emphasize classical usability criteria in online food ordering website design.

Chinese students gave more negative answers. The negative answers were various but all concentrating on the appearance of the website, including the structure, the color scheme. For instance, many negative comments were like “Layout looks pretty simple. Could be more pleasant to look at since it is a key component of the website”, “red color is giving me headaches”, “Colors and fonts are inconsistent, and do not match”, “I do not understand what the different buttons mean. And why there

is one button with no text. Very ugly bar." "Too common" are mostly-used reviews. These comments are about attractive visual appearances or novelty, which means Western European students emphasize additional user experience criteria in online food ordering website design.

Some participants were confused about the aim of this questionnaire, commenting like "You want to make takeaway website appealing, unless you present good food with nice price when I open the webpage." Actually the main elements analyzed in this study were the layout, information structure and color scheme of the websites. Some respondents who had the experience of ordering online food were familiar with the website and might give comments based on the websites they have already used. Some had no experience at all, as a result they could not understand some parts of the website. And also these were only webpages as shown in Figure 2, Figure 3, Figure 4, Figure 5, which means no interaction presented which many participants might expect. Many Chinese participants in this study are website designers or they at least know some design principles. Therefore, they gave some professional advices the website design, like "Block space is not proper", "Horizontal and vertical space between areas are not equal, which makes the design coarse." Participants had totally different even opposite opinions. Some regarded the area as ugly, while other commented it as appealing. People could like or dislike the color.

5. Conclusions

This chapter is drawing conclusions of the research results in last chapter, structured in four parts, Discussion of the results, Limitation of this research, Further study of the research and Conclusion of this study.

5.1 Discussion

In general, the overall results were congruent with the first hypothesis: Western European participants emphasize classical usability criteria (efficiency, perspicuity, dependability) and Chinese participants emphasize additional user experience criteria (stimulation, novelty), but not congruent with the second hypothesis: Chinese students prefer the website designed with Chinese design characteristics and Western European students prefer the website designed with Chinese design characteristics. The results of this study revealed that both Chinese students and Western European students preferred the Western European version. In addition, the mean values of Western European students were higher in both versions than those of Chinese students.

In the results of hotspot questions, table 15 shows the statistical results, which are incongruent with the second hypothesis. The total numbers of "like" and "dislike" comments revealed that both Chinese students and Western European students like Western European version more and Western European students gave more positive comments on both versions. Among all the hotspot regions in Figure 6 and 7, Western European version of Title bar (Region 1), Search bar and Location bar (Region 2), Content layout (Region 4) and Discount information (Region 5) were preferred by both groups of students, which were designed in the simple but eye-catching way. The only exception is that Chinese version of Food category and match (Region 3), which have many menu options, gained more "like" and less "dislike" than Western European version. The function of "Food category and match" in

Chinese version has much more information than that in Western European version. Participants cannot get fundamental information from the dropdown menus without dropdown items in the Western European webpage. This result gives us a notice that, simple information should be clear and sufficient to attract users. Bottom Bar (Region 6) was a neutral region between the two design versions and between the two groups of students. It is not a region so important as to make a difference of perception between the two groups of students. Backward and forward button (Region 7) in Western European websites gained equal likes and dislikes from both groups of participants. It is not a necessary part for them.

The qualitative data from Hotspot questions to some extent supported the first hypothesis. The comments revealed more information about their preference. Chinese students commented more about appearance (Stimulation) and they wanted more information like daily recommendation (Novelty), which these websites were not presented. These comments mean that Chinese participants emphasize additional user experience criteria (stimulation and novelty). Western European students care more about understandability and clearness (perspicuity) of the information. They always wanted simple and clear information (efficiency). The comments were always like "good overview", "simple and consistent", "limited but useful information". These comments reveal that Western European participants emphasize classical usability criteria (efficiency, perspicuity and dependability).

Among the eight scales, the only one scale where a significant interactive effect was found is User Experience Questionnaire-Perspicuity, a scale assessing the clearness and understandability of the website. The result in Table 10 means that Chinese students prefer the website consisting ambiguous information, which is congruent with a low score in Uncertainty Avoidance Index. And Western European students prefer the website presenting simple and clear website design, which is congruent with a high score in Uncertainty Avoidance Index. We can draw a conclusion from this scale that Chinese online food ordering websites should provide more information and complex website design to appeal to the customer group of Chinese college students, while Western European online ordering website should provide less and clear information and simple website design to appeal to the customer group of Western European college students.

User Experience Questionnaire-Perspicuity, along with other three scales (System Usability Scale-ISO, User Experience Questionnaire-Attractiveness，User Experience Questionnaire-Efficiency) were found that there are main effects for the variable website version. The results, as shown in Table 7, Table 9, Table 10 and Table 11, mean that both groups of students regarded Chinese website design as less attractive, less clear, less effective and less efficient. We can draw a conclusion that the Chinese website design failed to meet the requirements of classical usability criteria, where Western European website design did better.

Based on the scales of System Usability Scale-Dependency and User Experience Questionnaire-Stimulation, there are main effects found for the variable student nationality. The results in Table 8 and Table 13 showed that, Chinese students tended to regard both websites as with insufficient information and not interesting, while western students felt better in these two aspects. Chinese participants prefer more information in the website, and regard visual appearance as more

important compared with Western European participants. This conclusion is congruent with the first hypothesis indeed that Chinese students consider less on efficiency (classical usability criteria) and more on visual appearance (additional user experience criteria).

User Experience Questionnaire-Dependency and User Experience Questionnaire-Novelty are the scales where no interactive and main effects were found. Actually when participants were familiar with the structure and information, they regarded the websites as more predictable and less original. On the scale, User Experience Questionnaire-Novelty, the results showed that Chinese students rated Chinese website lower and Western European students rated Western European website lower.

Excluding User Experience Questionnaire-Dependency and User Experience Questionnaire-Novelty (assumed to be unusable scales as last paragraph stated), Chinese website was rated at much lower scores on scales (User Experience Questionnaire-Perspicuity, System Usability Scale-ISO, User Experience Questionnaire-Efficiency) than Western European website, which means Western European website design emphasizes critical usability criteria while Chinese website does not. The effect results of User Experience Questionnaire-Stimulation show that Chinese people concerned more on additional user experience criteria. And the effect result of User Experience Questionnaire-Attractiveness, a general assessment, turned out to be consistent with the effect results of classical usability criteria but inconsistent with that of stimulation (additional user experience criteria). That is to say, in this study, the Chinese website designed is not so visual appearance as users were totally attracted and ignored the classical usability, or Chinese people do care more on visual appearance of website design but not so much as to ignore the classical usability.

These results were not out of expectation at all, though the incongruence between the results and second hypothesis. There are several possible reasons of the results that both Chinese students and Western European students preferred the Western European version, and Western European students tended to rate higher on both versions than Chinese students First, since many of the Chinese participants were majoring in software engineering, they are much more professional in assessing website design than Western European participants. They were more critical about the websites. As a result, they rated both websites at lower scores. In addition, as Table 5 shows, Chinese students ordered online food more often, which might also make them more critical about the website design. Thirdly forty percent of Chinese participants had the experience living in the Netherlands, influenced by Western European culture. They preferred Western European website as Western European students do. Fourthly, college students receive high education, which is international and makes them think in the same way. Their preference does not represent cultural dimensions, since they are thinking outside the cultural box to some degree. In fact, the concepts of usability and user experience in website design, as well as many principles in website design were originated in Western countries. That might be a reason that Chinese websites did have less consideration of usability and user experience. The last reason, which is a very important one, is that Hofstede's cultural scores do not represent national cultural differences. Since culture is not stable. (Beugelsdijk, Maseland, & Hoorn, 2015) reexamined scores on Hofsede's cultural dimensions, which turned out to be different from the existing scores. In addition, the methodology used in Hofstede's cultural analysis was assumed that cultural values influence

practice (McSweeney, 2002; Maseland & Van Hoorn, 2009; Hofstede, 2010). Cultural values can be descripted as how people in a culture think what they should do. Cultural practice means how they actually do. However, “what people think they should do” is not equal to “what they do”. This method is questioned. McSweeney (2002) and Maseland & Van Hoorn (2009) also pointed out that cultural difference should not be investigated by participants’ values as Hofstede did.

5.2 Limitation

The questionnaire and the webpages are far from perfect. Here are some further developments. Pretesting the websites is very necessary to detect some design problems. First, the color and website elements should be totally same in both versions, which will be more structured. Second, the color scheme of many colors in Chinese website is not professional since colors are not harmonious and pleasing to the eye. The border design is not refined.

The questionnaire description based on the goals of this study is needed. Aim of the study should be clear to users, so they provide more effective information. The main elements analyzed in this study were the layout, information structure and color scheme of the websites. However some participants commented that “You want to make takeaway website appealing, unless you present good food with nice price when I open the webpage”, which is not related. Some even suggested a programing scheme that the website should provide recommendation based on users’ characteristics. The websites designed in this study are static websites (webpages), on which fake location address is confusing. The static address reminds participants to know what the function is, but is confusing with the wrong address.

5.3 Further study

Some further researches can be conducted based on this study.

This research can be further investigated among other groups of participants, not concentrating on college students. In this case, the study was investigated among college students who were influenced by high education and international culture. The research results did not totally support the second hypothesis, which might result from the international high education. If the study is investigating among people inside of the cultural box, for example, high school students who never went abroad, the results might be very different.

A qualitative study about cultural influence on website design can be conducted. This study had hot spot questions which involved open questions, and the answers to these questions revealed more about participants perception of website design. The reasons of why they liked or disliked the website regions of Figure 6 and Figure 7 gave away how they perceive website design in detail. Conducting a qualitative study by interviewing participants can also get rid of some limitation and misunderstanding in website design and questionnaire design.

The scores of cultural dimensions can be retested or latest cultural dimensions should be added to the study, since culture is not something stable. (Beugelsdijk, Maseland, & Hoorn, 2015) examined the development of scores on Hofsede’s cultural dimensions. They turned out to be different

from the existing scores. Hofstede's cultural dimensions were investigated based on the data extracted from a pre-existing bank of employee attitude surveys undertaken from 1967 to1973 within IBM (McSweeney, 2002). The primary data is not convincing after around half century. Moreover, investigating cultural difference based on participants from one single company-IBM is not convincing (McSweeney, 2002). New data should be used to retest cultural differences. If cultural scores of Hofstede's dimensions do not necessarily represent the cultural characteristics, unreliable background might be the reason of incongruence between the hypotheses and the results.

5.4 Conclusions

The quantitative results supported the first hypothesis that Western European participants emphasize classical usability criteria (efficiency, perspicuity, dependency) and Chinese participants emphasize additional user experience criteria (stimulation, novelty) in online food ordering website design. The results revealed their cultural preference to some extent. Many comments from Chinese students are about visual appearance, more information requests, or lack of originality. Comments from Western European students are about the functions, efficiency and perspicuity (clear and simple information) of website design.

The research results did not support the second hypothesis that Chinese students prefer Chinese website design and Western European students prefer Western European website. Both groups of students prefer Western European website designed in this study based on cultural dimensions. First of all, since Chinese participants in this study have experience living or studying in the Netherlands, they are influenced by western European culture. Secondly, college students receive high education, which is international and makes them think in the same way. Their preference does not represent cultural dimensions, since they are thinking outside the cultural box to some degree. Thirdly, the conceptions of usability and user experience are originated from western countries. High educated college students have more knowledge of these concepts, thus preferring western European version of website. In addition, many Chinese participants are majoring in software engineering, which is website design related. Chinese participants consider it in the professional way and thus they are more critical on the website design.

References

Akbulut, Y., Şendağ, S., Birinci, G., Kılıçer, K., Şahin, M. C., & Odabaşı, H. F. (2008). Exploring the types and reasons of Internet-triggered academic dishonesty among Turkish undergraduate students: Development of Internet-Triggered Academic Dishonesty Scale (ITADS). *Computers & Education*,*51* (1), 463-473.

Beugelsdijk, S., Maseland, R., & Hoorn, A. (2015). Are scores on Hofstede's dimensions of national culture stable over time? A cohort analysis. *Global Strategy Journal*, *5*(3), 223-240.

Bevan, N. (2009, August). What is the difference between the purpose of usability and user experience evaluation methods. In *Proceedings of the Workshop UXEM* (Vol. 9, pp. 1-4).

Bevan, N. (1995). Measuring usability as quality of use. *Software Quality Journal*, *4*(2), 115-130.

Brooke, J. (1996). SUS - A quick and dirty usability scale. *Usability evaluation in industry*, *189*(194), 4-7.

Brooke, J. (2013). SUS: a retrospective. *Journal of usability studies*, *8*(2), 29-40.

Cappel, J. J., & Huang, Z. (2015). THE ICEBERG MODEL OF WEBSITE USABILITY. *Issues in Information Systems*, *16*(1).

Cymek, D. H., Venjakob, A. C., Ruff, S., Lutz, O. H. M., Hofmann, S., & Roetting, M. (2014). Entering PIN codes by smooth pursuit eye movements.*Journal of Eye Movement Research*, *7*(4).

Dumitrescu, V. M., & Iacob, D. (2012). Cultural awareness, sensitivity and competence: Basic requirements for business success in Nepal and South Africa. *Synergy*, (2), 121-134.

Frandsen-Thorlacius, O., Hornbæk, K., Hertzum, M., & Clemmensen, T. (2009, April). Non-universal usability?: a survey of how usability is understood by Chinese and Danish users. In *Proceedings of the SIGCHI Conference on Human Factors in Computing Systems* (pp. 41-50). ACM.

Hofstede, G. (2011). Dimensionalizing cultures: The Hofstede model in context. Online readings in psychology and culture, 2(1), 8.

Hofstede, G., Hofstede, G. J., & Minkov, M. (1991). Cultures and organizations: Software of the mind (Vol. 2). London: McGraw-Hill.

Hofstede, G. (2010). The GLOBE debate: Back to relevance. *Journal of International Business Studies*, *41*(8), 1339-1346.

Holzinger, A. (2005). Usability engineering methods for software developers. *Communications of the ACM*, *48*(1), 71-74.

Hornbæk, K. (2006). Current practice in measuring usability: Challenges to usability studies and research. *International journal of human-computer studies*, *64*(2), 79-102.

Hsieh, H. C. L. (2015). Probing the effects of culture on the communication of websites design. *Theoretical Issues in Ergonomics Science*, *16*(6), 606-630.

Hutcheson, G. D., & Sofroniou, N. (1999). *The multivariate social scientist: Introductory statistics using generalized linear models*. Sage.

Ilmberger, W., Schrepp, M., & Held, T. (2008, November). Cognitive processes causing the relationship between aesthetics and usability. In*Symposium of the Austrian HCI and Usability Engineering Group* (pp. 43-54). Springer Berlin Heidelberg.

ISO, W. (1998). 9241-11. Ergonomic requirements for office work with visual display terminals (VDTs). *The international organization for standardization*,*45*.

Khan, T., Williams, M. A., & Pitts, M. (2016). Cross-cultural differences in automotive HMI design: a comparative study between UK and Indian users' design preferences. *Journal of Usability Studies*, *11*(2), 45-65.

Kurosu, M. (2015). Usability, Quality in Use and the Model of Quality Characteristics. In *Human-Computer Interaction: Design and Evaluation* (pp. 227-237). Springer International Publishing.

Leavitt, M. O., & Shneiderman, B. (2006). Research-based web design & usability guidelines. *US Department of Health and Human Services*.

Lewis, J. R., & Sauro, J. (2009, July). The factor structure of the system usability scale. In *International Conference on Human Centered Design* (pp. 94-103). Springer Berlin Heidelberg.

Li, H., Sun, X., & Zhang, K. (2007, July). Culture-centered design: Cultural factors in interface usability and usability tests. In *Software Engineering, Artificial Intelligence, Networking, and Parallel/Distributed Computing, 2007. SNPD 2007. Eighth ACIS International Conference on* (Vol. 3, pp. 1084-1088). IEEE.

Marcus, A., & Gould, E. W. (2000). Crosscurrents: cultural dimensions and global Web user-interface design. *interactions*, *7*(4), 32-46.

Maseland, R., & Van Hoorn, A. (2009). Explaining the negative correlation between values and practices: A note on the Hofstede–GLOBE debate.*Journal of International Business Studies*, *40*(3), 527-532.

McSweeney, B. (2002). Hofstede's model of national cultural differences and their consequences: A triumph of faith-a failure of analysis. *Human relations*,*55*(1), 89-118.

Nielsen, J. (2001). Success rate: The simplest usability metric. Alertbox, February 18, 2001. Retrieved November 13, 2002.

Nunnally, J. C. (1978). Psychometric Theory (2nd Ed.) MacGraw-Hill. *New York*.

Rauschenberger, M., Schrepp, M., Cota, M. P., Olschner, S., & Thomaschewski, J. (2013). Efficient measurement of the user experience of interactive products. How to use the user experience questionnaire (ueq). example: spanish language version. *IJIMAI*, *2*(1), 39-45.

Reinecke, K., & Bernstein, A. (2013). Knowing What a User Likes: A Design Science Approach to Interfaces that Automatically Adapt to Culture. *Mis Quarterly*, *37*(2), 427-453.

Santoso, H. B., Schrepp, M., Isal, R., Utomo, A. Y., & Priyogi, B. (2016). Measuring User Experience of the Student-Centered e-Learning Environment. *Journal of Educators Online*, *13*(1), 58-79.

Sauro, J. (2015). Measuring usability with the system usability scale (SUS). 2011. *Verfügbar unter: http://www. measuringusability. com/sus. php [22.04. 2013]*.

Shackel, B. (1991). Usability-context, framework, definition, design and evaluation. *Human factors for informatics usability*, 21-37.

Shackel, B., & Richardson, S. J. (1991). *Human factors for informatics usability*. Cambridge University Press.

Soriano, M. A. (2014). United Arab Emirates & Mexico: Do's and dont's in negotiation strategies," A Mexican perspective". *The Business & Management Review*, *5*(1), 378.

Appendix A

Chinese online ordering websites

https://www.ele.me/home/

http://bj.meituan.com/

http://beijing.daojia.com.cn/

http://shanghai.dianwoba.com/

http://waimai.baidu.com/

http://www.dianping.com/

http://waimaichaoren.com/

https://www.4008-517-517.cn/cn/home.html (mcdonalds delivery service)

https://www.4008823823.com.cn/kfcios/Html/index.html (KFC delivery service)

https://www.4008123123.com/phhs_ios/index.htm (pizzahut delivery service)

http://www.dominos.com.cn/ (dominos delivery service)

Western European online ordering websites

https://www.justeat.nl/

http://www.thuisbezorgd.nl/

http://www.247pizza.nl/

https://bestellen.dominos.nl/

Appendix B

Factor analysis

Table a: KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.859
Bartlett's Test of Sphericity	Approx. Chi-Square	442.270
	df	45
	Sig.	.000

Table b: Rotated Component Matrixa

	Component	
	1	2
SUS-1	.769	-.059
SUS-3	.732	.317
SUS-2	.727	.187
SUS-5	.670	.180
SUS-9	.586	.137
SUS-8	.585	.412
SUS-7	.580	.499

SUS-6	.502	.497
SUS-4		.876
SUS-10	.262	.740

Extraction Method: Principal Component Analysis.

Rotation Method: Varimax with Kaiser Normalization.

a. Rotation converged in 3 iterations.

Reliability Analysis

Table c: Reliability Statistics

Scale	Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
System Usability Scale-ISO	.852	.852	8
System Usability Scale-Dependency	.645	.645	2
User Experience Questionnaire-Attractiveness	.850	.846	6
User Experience Questionnaire-Perspicuity	.746	.750	4
User Experience Questionnaire-Efficiency	.818	.815	4
User Experience Questionnaire-Dependability	.720	.721	4
User Experience Questionnaire-Stimulation	.785	.785	4
User Experience Questionnaire-Novelty	.789	.793	4

Effect Analysis

Table d: Tests of Between-Subjects Effects

	Version		Student		Version * Student	
	F	Sig.	F	Sig.	F	Sig.
System Usability Scale-Dependency	15.522	0.000	0.000	0.985	0.694	0.406
System Usability Scale-ISO	2.221	0.139	5.538	0.020	2.221	0.139
User Experience Questionnaire-Attractiveness	8.220	0.005	0.492	0.485	0.338	0.562
User Experience Questionnaire-Perspicuity	14.249	0.000	2.083	0.152	5.186	0.024
User Experience Questionnaire-Efficiency	10.771	0.001	3.066	0.082	0.567	0.453
User Experience Questionnaire-Dependability	3.047	0.083	0.776	0.380	2.522	0.115
User Experience Questionnaire-Stimulation	3.170	0.077	4.119	0.045	0.079	0.779
User Experience Questionnaire-Novelty	0.407	0.525	0.948	0.332	1.841	0.177

Appendix C

Questionnaire (Western European version)

Part 1: Introduction

Dear participant,

Thank you in advance for completing this survey.

This is a master thesis survey on users' appreciation on website design, conducted by Tingting Xu from the University of Twente. Your responses, along with those from other students, will help in investigating how people appreciate website designs.

The survey should take approximately 15 minutes to complete. You can give up whenever you want, but it would be really helpful if you could fill out the complete survey.

Your participation is vital to the success of this thesis. Your survey data will be processed securely and only be used in this master thesis.

Sincerely, Tingting XU

What device are you using to do the survey?

1. Smart phone

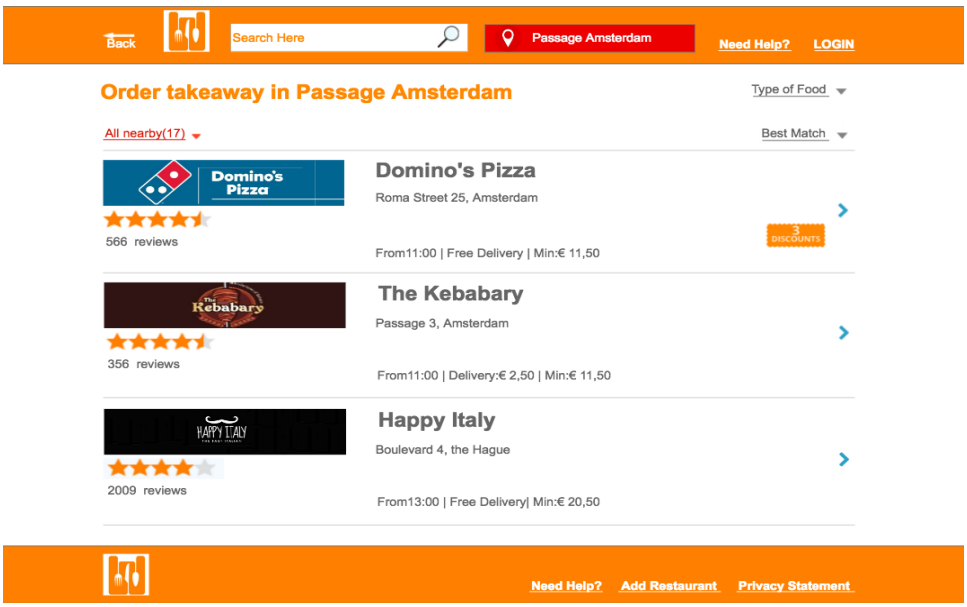
2. Laptop

3. Desktop

4. Tablet

Part 2: Scales

Please take a close look at web page below. (Timing)



In general, how do you think of this website? There are 10 descriptive sentences below. Could you please indicate to what extent you agree or disagree with the statements?

System Usability Scale

	Strongly	Dis-	Some what	Neither agree	Some what	Agree	Strongly

	disagree	agree	dis-agree	nor disagree	agree		agree
1. I think that I would like to use this website frequently.	❍	❍	❍	❍	❍	❍	❍
2. I found the website unnecessarily complex.	❍	❍	❍	❍	❍	❍	❍
3. I thought the website was easy to use.	❍	❍	❍	❍	❍	❍	❍
(4) I think that I would need the support of a technical person to be able to use this website.	❍	❍	❍	❍	❍	❍	❍
(5) I found the various functions in this website were well integrated.	❍	❍	❍	❍	❍	❍	❍
(6) I thought there was too much inconsistency in this website.	❍	❍	❍	❍	❍	❍	❍
(7) I would imagine that most people would learn to use this website very quickly.	❍	❍	❍	❍	❍	❍	❍
(8) I found the website very cumbersome to use.	❍	❍	❍	❍	❍	❍	❍
(9) I felt very confident using the website.	❍	❍	❍	❍	❍	❍	❍
(10) I needed to learn a lot of things before I could get going with this website.	❍	❍	❍	❍	❍	❍	❍

User Experience Questionnaire

	1	2	3	4	5	6	7
(1) annoying : enjoyable	❍	❍	❍	❍	❍	❍	❍
(2) not understandable : understandable	❍	❍	❍	❍	❍	❍	❍
(3) creative : dull	❍	❍	❍	❍	❍	❍	❍
(4) easy to learn : difficult to learn	❍	❍	❍	❍	❍	❍	❍
(5) valuable : inferior	❍	❍	❍	❍	❍	❍	❍
(6) boring : exciting	❍	❍	❍	❍	❍	❍	❍
(7) not interesting : interesting	❍	❍	❍	❍	❍	❍	❍
(8) unpredictable : predictable	❍	❍	❍	❍	❍	❍	❍
(9) fast : slow	❍	❍	❍	❍	❍	❍	❍
(10) inventive : conventional	❍	❍	❍	❍	❍	❍	❍
(11) obstructive : supportive	❍	❍	❍	❍	❍	❍	❍
(12) good : bad	❍	❍	❍	❍	❍	❍	❍

(13) complicated : easy	❍	❍	❍	❍	❍	❍	❍
(14) unlikable : pleasing	❍	❍	❍	❍	❍	❍	❍
(15) usual : loading edge	❍	❍	❍	❍	❍	❍	❍
(16) unpleasant : pleasant	❍	❍	❍	❍	❍	❍	❍
(17) secure : not secure	❍	❍	❍	❍	❍	❍	❍
(18) motivating : demotivating	❍	❍	❍	❍	❍	❍	❍
(19) meets expectations : does not meet expectations	❍	❍	❍	❍	❍	❍	❍
(20) inefficient : efficient	❍	❍	❍	❍	❍	❍	❍
(21) clear : confusing	❍	❍	❍	❍	❍	❍	❍
(22) impractical : practical	❍	❍	❍	❍	❍	❍	❍
(23) organized : cluttered	❍	❍	❍	❍	❍	❍	❍
(24) attractive : unattractive	❍	❍	❍	❍	❍	❍	❍
(25) friendly : unfriendly	❍	❍	❍	❍	❍	❍	❍
(26) conservative : innovative	❍	❍	❍	❍	❍	❍	❍

Part 3: Hotspot

Please, indicate to what extent you like the design of the different parts of the website by clicking on the different regions. Click once if you like the design of a website part, then the region will turn green. Click twice if you dislike the website part and the region will turn red. Click three times, and the color will turn back to normal; this, and this means that you neither like nor dislike the region.

Choices: “dislike”, “neutral”, “like”

Chinese website Regions: Title bar, Search bar, Location bar, Food category and match, Content layout, Bottom bar, Discount information

Western European website Regions: Title bar, Search bar, Location bar, Food category and match, Content layout, Bottom bar, Discount information, Backward and Forward button

Questions after choose “like”:

You clicked once on this part, which means you like it. Can you explain why you like it?

Questions after choose “dislike”:

You clicked twice on this part, which means you dislike it. Can you explain why you dislike it?

Do you have any other comments on this website?

Part 4: Personal Characteristic

Could you please answer some questions about your personal characteristics.

What is your age?

What is your gender?

1. Male

2. Female

What is your nationality?

1. Chinese

2. Dutch

3. Other

What is your highest education level?

1. Bachelor

2. Master

3. Doctor

How many years have you been studying in the Netherlands?

To what extent you will take delivery time into consideration when you order delivery food?

To what extent you will take price into consideration when you order delivery food?

To what extent you will take discounts into consideration when you order delivery food?

Do you know beforehand what you are going to order when you order delivery food online?

5-likert Scales: From Never to Always

How do you usually order food?

1. On takeaway website

2. On restaurant website

3. Using mobile apps

4. By phone call

How often do you order delivery food online?

1. Seldom, like once or twice a year

2. Sometimes, like once or twice a month

3. Often, like once or twice a week

4. Usually, almost everyday

5. Depends