

Exploring the Impact of Visual Information on Ethnic Restaurants  
Purchase Intention in Food Ordering Apps and the Moderating Role  
of Reputation, Cosmopolitanism and Cultural Values

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## Abstract

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Zhen Zhang

Food ordering apps (FDAs) have gained popularity in recent years due to the rapid development of the internet and mobile technology. Especially during the COVID-19 pandemic, more customers choose to order deliveries from restaurants using FDAs. This study examined how visual information, specifically, the pictures of the dish that appeared on the ethnic restaurant menu in FDAs impact consumer purchase intentions through trust and attitudes. The moderating effect of cosmopolitanism and cultural values were also explored. The studies were conducted cross-culturally in both North America and China to test consumers' purchase intention towards a Japanese restaurant in an FDA. Results revealed that consumers' purchase intention towards ethnic restaurants was positively affected by visual information presented in FDA menu through the serial mediation of online trust and attitudes. Cosmopolitanism was found to significantly moderate the positive relationship between visual information and online trust. Uncertainty avoidance, one of the six dimensions of cultural values, was also found to moderate the positive relationship between online trust and attitudes. Furthermore, the theoretical and managerial implications of the findings are discussed.

**Keywords:** Visual information; Ethnic restaurants; Food ordering apps (FDAs); Online trust; Cosmopolitanism; Cultural values; Attitudes; Purchase intentions.

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## 1. Introduction

As internet technology rapidly develops, the expansion of E-commerce has dramatically changed consumers' lifestyles and purchase behavior (Suhartanto, Ali, Tan, Sjahroeddin & Kusdiby, 2019). Online food delivery services (OFD) offer services where consumers can browse restaurants around them, and order deliveries from a website or an app such as UberEats, FanTuan, or DoorDash. It is noteworthy that during the COVID-19 pandemic, many cities in Canada have been placed in lockdowns. Thus, many restaurants have canceled dine-in services, and only offer online delivery services through food delivery apps (FDAs). Online food delivery services are indeed becoming a major tool by which consumers acquire needed foods. As a result, the revenue growth of online food delivery services (Platform-to-Consumer Delivery) in Canada is expected to reach \$889.4 million, which will be a 35% growth rate in 2020 (23.3% in 2019) due to the impact of COVID-19 (Statista, Sept 20, 2020). On the other side of the world, the forecasted revenue from OFD services in China is expected to be \$51.5 billion with a 44% user penetration rate in 2020 (Statista, 2020; Ma, 2020).

Compared to the vast literature on e-commerce and website quality, the literature regarding OFD services is fairly new and limited. Previous literature on OFD has explored different factors that would impact consumer's overall satisfaction, attitude, as well as intention to use towards OFD services using different theories, such as the Technology Acceptance Model, and the Mobile App Attributes (Alagoz & Hekimoglu, 2012; Alalwan, 2020; Pigatto, Machado, Negreti, & Machado, 2017; Ray, Dhir, Bala, & Kaur, 2019). However, few studies have extended their focus to any particular type of restaurant in the context of OFD services. An OFD platform like UberEats serves hundreds of restaurants in an area, including not only small to medium domestic and ethnic restaurants, but also global brands such as Macdonald's and Subway, which already have their own delivery platforms with a mature operating system. (Suhartanto et al., 2019). This indicates the fierce competition in the OFD business. Moreover, previous literature suggests that the growth of the ethnic business is limited due to its inability to attract customers from outside of the ethnic market (Altinay & Altinay, 2006; Jamal, 2005). Even though previous studies found that physical dining atmosphere (authentic atmospherics) affects consumer's behavioral intentions (re-purchase; recommendation; positive WOM) (Jang, Liu & Namkung 2011), the findings are not suitable in the OFD context. Thus, this study aims to explore the factors that impact the consumer's purchase intention towards ethnic restaurants in the OFD context. Due to the incongruity of the term OFD used in different literature (e.g.,

Mobile food ordering apps (MFOAs); Food ordering apps (FDAs); Online food-delivery aggregators (OFAs); Online food ordering), this research will use food ordering apps (FDAs) for the rest of the paper, which according to Ray, Dhir, Bala, & Kaur (2019) only FDAs provide their services through mobile devices (Ali, 2020; Kapoor & Vij, 2018; Suhartanto et al., 2019).

Previous studies on visual information in both online and offline situations have revealed mixed results of the impact of pictures on consumer's trust and purchase intention. Lin, Lu, & Wu (2012) found that customers' perceived credibility, as well as perceived message quality of eWOM articles, are significantly higher with pictures presented in the articles (vs. without pictures). On the other hand, Van Rompay, De Vries, and Van Venrooij's (2010) findings suggested that information incongruence between text and image in the advertisement context yields negative effects on consumer's trust; thus, it will result in lower consumer attitude towards e-vendors. In practice, the picture of dishes seems randomly distributed in the FDA menu: some restaurants display pictures for every dish on their menu, some only put verbal information on the menu, and some restaurants only add pictures to certain dishes. Thus, it is vital to understand the impact of dish pictures on consumer's purchase intention towards an online ethnic restaurant, especially when there are ambiguous dish names that are hard to translate or can only be understood by customers who come from the same culture of the ethnic restaurant (e.g., "ants climbing a tree" is a well-known Chinese dish made with glass noodle and ground pork). Moreover, studies have shown that reputation is also an indicator that will affect consumer trust towards online vendors (Ert, Fleischer, & Magen, 2016; Shankar, Urban, & Sultan, 2002). This study proposes that reputation could be moderating the relationship between visual information and online trust since low reputation may cause the consumer to doubt the authenticity of the picture presented in the FDA menu (Zhang & Hank, 2018).

Several empirical studies have taken place in different nations to explore the effects of national cultural values and cosmopolitanism on consumer acceptance of e-commerce. Yoon (2009) has found that cultural values had moderating effects on the relationship between trust and intention to use in his studies based on the TAM and Hofstede's cultural dimension model (Hofstede & Minkov, 2005). Thus, this study tries to add to the existing OFD (FDA) literature by exploring the moderating effect of cosmopolitanism on the relationship between visual information and online trust, as well as the effect of cultural values on the relationship between trust and consumer's attitude towards ethnic restaurants in a FDA context.

In summary, the purpose of this study is to explore the effect of pictures of dishes on consumer's purchase intention towards ethnic restaurants in the context of FDAs, as well as to test the sequential mediating effects of consumer's online trust and attitude towards ethnic restaurant between visual information and purchase intention. At last, this study aims to explore the moderating effect of cosmopolitanism and reputation on the relationship between visual information and online trust, as well as the moderating effect of cultural values on the relationship between online trust and consumer's attitude.

## **2. Conceptual background**

### **2.1 Visual information**

The effect of visual information has been studied in the advertising context for a long time. Visual information has been considered an important factor in website design as well as in menu design (Hou, Yang & Sun, 2017; Lin et al., 2012; Pennings, Striano & Oliverio, 2014). Many online shopping websites present visual information along with the verbal description of products in order to enhance consumers' cognitive elaboration and the comprehensiveness of their products (Lin et al, 2012). Kim and Lennon's (2008) studies on verbal and visual information in the online apparel shopping website context also revealed that visual information had a significant effect on consumer cognitive attitudes when the amount of verbal information of a product is low. Kim and Lennon's (2008) findings also suggested that with the presence of visual information, more detailed verbal descriptions will yield higher consumer purchase intention. However, in the context of FDAs, many food ordering apps are designed in pursuit of time-saving and convenience (Lee, Lee, & Jeon, 2017). Unlike websites, it would be difficult to embed too much verbal information in an online menu with limited screen space on a mobile device (Lee et al., 2017). Moreover, because of the nature of ethnic restaurants, some dishes with vague food names or unique ingredients may be hard for customers to imagine what the food will be, even with the verbal description presented. Thus, the current study argues that visual information plays a vital role in the menu of ethnic restaurants from FDAs.

Many studies regarding OFD (FDA) and menu design only focused on consumer attitudes and purchase intention without examining the effect of online trust. Hou et al. (2017) revealed that the relationship between visual information of food names on a restaurant menu and consumers' attitude is moderated by different types of food names (descriptive vs. ambiguous), as well as information processing style (visualizer vs. verbalizer). However,

previous research on e-commerce and website design indicated that online trust is an important factor that should be considered before attitude and purchase intention. Nohria and Eccles (1992) proposed that the absence of human network attributes (i.e., audio, visual, and sensual) will jeopardize the building of online trust. Vasanthakumar and Arunprakash (2019) pointed out that information quality is an essential part of gaining online trust when ordering online food services. Online trust is also found to have a positive effect on consumer attitudes towards e-commerce (Alagoz & Hekimoglu, 2012; Gao & Wu, 2010). Also, more favorable attitudes are found to have significant positive impacts on consumer's willingness to purchase (Jarvenpaa, Tractinsky & Vitale, 2000) Hence, we argue that adding visual information to ethnic restaurants' menu in FDA will impact online trust positively, which in turn results in higher altitudes, thus leading to higher purchase intention.

**H1:** *Online trust and consumers' attitude toward online ethnic restaurants sequentially mediate the relationship between visual information and consumers' purchase intention: the presence of visual information (versus no visual information) enhances online trust, which leads to a higher consumer attitude, which increases consumers' purchase intention.*

## **2.2 Reputation**

In addition to visual information, the reputation of an online vendor is also a factor that was found to have a salient effect on online trust. Jarvenpaa et al. (2000) found that the perceived reputation of an online store positively impacts trust in an online store. Einwiller (2003) suggested that, in B2C e-commerce, a higher vendor reputation engenders higher consumer trust towards the e-vendor, and the effect will be less salient if the consumer has had direct experience with the vendor. However, very few studies have examined the effects of visual information and reputation together on trust in the context of FDAs. The current study argues that the reputation of an ethnic restaurant in FDAs will moderate the relationship between visual information and online trust. In FDAs, the most common cue to determine a restaurant's reputation is the presence of online ratings or the "stars" rated by experienced consumers (Ert et al., 2016). Based on previous literature, it would be reasonable to propose that if the restaurant's rating is high, the customer will tend to believe that the food pictures on the menu match the reality; this will enhance his/her trust towards the vendor. If the rating is low, which indicates a bad reputation of the restaurant, the customer will tend to think that the

visual information provided on the menu may be a false picture that will not match the actual product, which will lessen the positive impact of visual information on trust.

**H2:** *A higher reputation of ethnic restaurants in FDA results in higher impact of visual information on consumers' online trust; while a lower reputation of ethnic restaurants in FDA results in lower impact of visual information on consumers' online trust*

### **2.3 Cosmopolitanism**

The concept of cosmopolitanism has drawn significant attention from researchers due to the development of internet technology and the increased level of globalization in recent years (Saran & Kalliny, 2012). Cosmopolitanism is a term that reflects an individual's willingness and openness to engage in foreign cultures other than his/her own (Cleveland, Laroche, & Papadopoulos, 2009; Saran & Kalliny, 2012; Shapiro, 2012). Early literature describes cosmopolitans as individuals who travel frequently, interact with other people elsewhere, and "provide points of entry into other territorial cultures" (Hannerz, 1992. p.251). The definition of cosmopolitanism has remained ambiguous among different literature. Some researchers regard it as a learnable skill; some mention it as a predisposition at birth, while other researchers view it as a personal trait (Canon & Yaprak, 2002; Cleveland et al., 2011; Thompson & Tambyah, 1999). Nonetheless, many researchers have reached the same opinion on the effect of cosmopolitanism on consumer behavior, such that consumers who are high in cosmopolitanism will have a higher interest in engaging with other cultures, appreciating cultural differences, and will be more open to products from other cultures (Cleveland et al., 2009; Thompson & Tambyah, 1999; Zhang & Hanks, 2018).

More importantly, cosmopolitans are not necessarily people who travel to other countries; people can be cosmopolitan within their own countries because of the rapidly developed globalization and the reach of the internet (Cleveland et al., 2009; Craig & Douglas, 2006; Hannerz, 1990). Shapiro (2012) in his chapter on CouchSurfing revealed that couchsurfers, who are more cosmopolitan and open to other cultures, are more willing to take the risk to trust strangers. Thus, cosmopolitanism could be another important factor that will influence the consumer's trust. As mentioned, successfully attracting consumers from outside of their own cultural communities is vital for the survival of ethnic restaurants (Altinay, 2008). FDAs provide opportunities for ethnic restaurants to gain popularity and profit from cosmopolitans, who could also use FDAs to seek exotic foods with unique taste and fashion.

(Cleveland et al., 2009; Thompson & Tambyah, 1999). Thus, it is expected that people who consider themselves as cosmopolitan will have higher online trust towards ethnic restaurants, and will be less likely to judge differently whether there is visual information presented or not.

**H3:** *A higher degree of cosmopolitanism results in lower effect of visual information on consumers' online trust towards ethnic restaurants in FDA; while a lower degree of cosmopolitanism results in higher effect of visual information on consumers' online trust towards ethnic restaurants in FDA.*

## **2.4 Cultural values**

The final goal of this paper is to study the moderating effects of cultural values on the impact of online trust on consumer attitudes. Culture has been studied for decades as a vital factor in consumer behavior. According to Hofstede's (2011) shorthand definition, culture is "the collective programming of the mind that distinguishes the members of one group or category of people from others". Several researchers attempted to dimensionalize culture in the past century (Bond, 1987; Dorfman & Howerll, 1990; Hofstede, 1980, 1984, 1991). Among various conceptualizations of culture, Hofstede's (1980) original framework of five national cultural dimensions is the most widely used one among psychology, management, and sociology research (Soares et al., 2007; Søndergaard, 1994). At first, Hofstede's framework of national cultural dimensions is widely used in sociology and management research. Later on, Hofstede and Minkov (2010) added one more dimension to their original framework, which made it six dimensions of national cultures, including masculinity vs. femininity, power distance, uncertainty avoidance, collectivism vs. individualism, long term orientation, as well as the newest dimension, indulgence vs. restraint. In recent years, Hofstede's cultural framework has been applied in business and marketing research progressively (Farley & Murched, 2016; Hallikainen & Laukkanen, 2018; Yoon, 2009). Nevertheless, Hofstede's framework also received numerous critiques. One major critique is that the framework measures cultural values on a national/organizational level, which means individuals' cultural value differences cannot be measured with Hofstede's constructs (Hofstede, 2010, 2011). As a consequence of globalization and modernization of technology, the spread of information and knowledge is faster than ever before (Hofstede, 2011). Hence, the traditional way of comparing cultural differences among countries in marketing studies could be problematic, since globalization is reducing the heterogeneity of cultural differences among nations while increasing cultural heterogeneity within nations (Carpenter, Moore, Doherty, & Alexander,

2012; Cleveland & Laroche, 2007). Hofstede (2011) discusses the possibility of culture change due to technology development, and reveals that the younger generation in China has changed their cultural values due to rapid global exposure and economic development.

As a result, several researchers developed scales to measure cultural values at the individual level based on Hofstede's construct, which allows other researchers to predict the effect of cultural values on consumer behavior at the individual level (Heydari, Laroche, Paulin, & Richard, 2019; Srite & Karahanna, 2006). The increased popularity of ethnic restaurants may be an indicator of globalization. Thus, it is worth studying the moderating effects of Hofstede's cultural values on the relationship between online trust and attitudes towards ethnic restaurants in FDAs at the individual level but across nations (Cleveland & Laroche, 2007). The study will be conducted in both North America, and in China but cross-cultural differences will not be studied for the following reasons: 1. Containing data from different nations gives more variation to the data; 2. China and NA are predicted to generate the most revenue in 2020 regarding OFDs (Statista, 2020). Therefore, China and NA would be the best places to conduct a marketing study regarding FDAs (OFD).

#### **2.4.1 Masculinity/ Femininity**

Masculinity refers to how assertiveness, achievement, and social status are valued in a society. (Hofstede, 1980; Soares et al., 2007). People who score high on masculinity are often assertive, looking for achievement and material success; whereas people who score high on femininity value quality of life, service, and sympathy. (Hofstede & Minkov, 2010). Tai and Chan (2001) also found out that consumers who are high on masculinity value the information cues of the performance of a product more in the advertising situation, thus, their attitude will be affected more by their online trust. However, Yoo and Donthu (2005) argued that when there is a competition between domestic and imported goods, consumers high on femininity will show sympathy to the weak side, which often refers to imported goods. Hence, consumers high on femininity (vs. masculinity) are more likely to show more favorable attitudes towards foreign products, and will be more willing to pay attention to the positive aspect of imported goods. (Griswold, 2003). Compared to domestic restaurants and international chain restaurants, ethnic restaurants are more likely to be perceived at a disadvantage. Hence, the effect of online trust on attitude will be weaker for consumers with high degrees of femininity.

**H4:** *A higher degree of masculinity results in higher effects of trust on consumers' attitude towards ethnic restaurants; while a higher degree of femininity results in lower effects of trust on consumers' attitude towards ethnic restaurants.*

#### **2.4.2 Power distance**

Power distance refers to the extent to which the less powerful members of institutions and organizations within a country expect and accept that power is distributed unequally. (Hofstede & Minkov, 2010). People with large power distance accept that there is inequality existing in wealth, social status, and class between superiors and subordinates (Hofstede, 2011; Yoo & Donthu, 2005). On the other hand, consumers with lower power distance are expected to value equality and perceive an equal and interdependent relationship between superiors and subordinates (Yoon, 2009). Yoon (2009) also suggested that having a low power distance society is a vital condition to form trust, since trust indicates readiness to be vulnerable even though there may be risks. Moreover, in large power distance societies, people with lower power distance are willing to obey and be influenced by their home country. Thus, buying domestic products and boycotting imported goods may be a way to show their obedience to a higher power (Yoo & Donthu, 2005). Hence, low power distance society values equality and forms their attitude based more on trust, while high power distance society values authority and generates attitude based more on obedience and local government policies.(Yoon, 2009; Yoo & Donthu, 2005).

**H5:** *A higher degree of power distance results in lower effect of online trust on consumers' attitudes towards ethnic restaurants in FDA, while a lower degree of power distance results in higher effect of online trust on consumers' attitudes towards ethnic restaurants in FDA.*

#### **2.4.3 Uncertainty avoidance**

Uncertainty avoidance examines the extent to which the members of a culture feel threatened by ambiguous or unknown situations (Hofstede & Minkov, 2010). It also refers to the level of risk an individual could accept; usually it can be indicated by the individual's ritual behavior, labor mobility, and rule obedience (Srite & Karahanna, 2006). Several researchers pointed out that consumers high on uncertainty avoidance tend to be hesitant in buying online products, perceive online shopping riskier, and have slower adoption rates towards e-commerce (Kailani & Kumar, 2011; Sabiote, Frías, & Castañeda, 2012; Yenyurt & Townsend, 2003;

Yoon, 2009). People in high uncertainty avoidance cultures are more associated with the need for security, anxiety, and the need for information and predictability (Hofstede, 1980). Hence, individuals with high uncertainty avoidance develop trust less easily and quickly, while spending more effort on reducing uncertainty (Furner, Racherla, & Zhu, 2013). In contrast, individuals with low uncertainty avoidance tend to take on risks with uncertainty more easily and have a higher tolerance for different opinions and information (Yoo & Donthu, 2005). Thus, it is reasonable to argue that consumers who have high uncertainty avoidance value information more, and show more favorable attitudes toward products with information that they trust. The visual information in an FDA menu, in turn, serves as a sign of predictability and uncertainty reduction for high uncertainty avoidance consumers. Hence, I predict that in the context of FDAs, consumers high on uncertainty avoidance depend more on trust to generate positive attitudes towards products than those who have low uncertainty avoidance.

**H6:** *A higher degree of uncertainty avoidance results in higher effect of online trust on consumers' attitude towards ethnic restaurants in FDA, while a lower degree of uncertainty avoidance results in less effect of online trust on consumers' attitude towards ethnic restaurants in FDA.*

#### **2.4.4 Collectivism/Individualism**

Collectivism/Individualism demonstrates the difference in the relationship that individuals have in different cultures (Hofstede & Minkov, 2010). People in collectivist cultures often have interdependent relationships with others. Collectivists show concern and trust toward people and societies that are in-group, so that they are less likely to try out new products outside their group (Yoo & Donthu, 2005; Yoon, 2009). Accordingly, ethnic restaurants, as opposed to domestic restaurants, are less likely to attract consumers who score high on collectivism. Individualists on the other hand are likely to act freely without concerns about social constraints and focus more on their own welfare as well as that of their families (Hofstede & Minkov, 2010). Gong, Li, and Stump (2007) argued that more individualistic people are inclined to try out new things because they value uniqueness and differentiation. Since FDAs have only become popular due to the modernization of technology in e-commerce in recent years, the introduction of ethnic restaurants to FDAs will more presumably make more individualistic consumers show favorable attitudes as an indication of uniqueness and free will (Gong et al., 2007).

**H7:** *A higher degree of individualism results in higher effects of trust on consumers' attitude towards ethnic restaurants; while a higher degree of collectivism results in lower effects of trust on consumers' attitude towards ethnic restaurants.*

#### **2.4.5 Long term orientation**

Long term orientation, contrary to short-term orientation, is “the fostering of pragmatic virtues oriented toward future rewards, in particular perseverance, thrift, and adapting to changing circumstances” (Hofstede & Minkov, 2010). This dimension reflects values, which are derived from Confucian Dynamism, that show tendencies towards the future. Yoon (2009) argued that people who are long-term oriented are more likely to take a risk under uncertain situations, because they have strong beliefs and focus more on long-term gains instead of short-term gains. Also, Yoo and Donthu (2005) suggest that long-term oriented consumers are more comfortable in adapting to changes in the market, and embrace the introduction of imported goods because they have strong beliefs to secure future rewards, thus, online trust will have less impact on attitudes for long-term oriented consumers.

On the other hand, short-term oriented consumers focused more on short-term benefits and are more associated with truth-seeking, quick results and respect for traditions (Hofstede & Minkov, 2010). Thus, they will pay more attention to information presented in the menu and rely more on trust to generate their attitude towards ethnic restaurants

**H8:** *A higher degree of long term orientation results in lower effects of trust on consumers' attitude towards ethnic restaurants; while a higher degree of short term orientation results in higher effects of trust on consumers' attitude towards ethnic restaurants.*

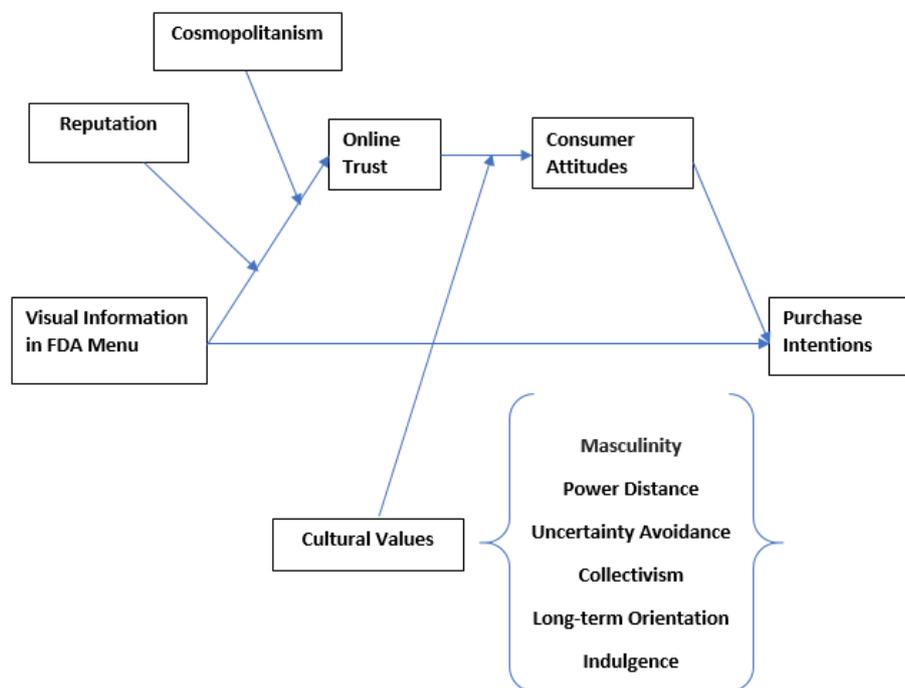
#### **2.4.6 Indulgence vs restraint**

Indulgence is the newest national cultural value dimension which Hofstede added. Indulgence refers to the degree to which the free gratification of basic and human desires, notably enjoying life and having fun, are allowed in a society (Hofstede & Minkov, 2010). Hofstede & Minkov (2010) suggested that this cultural dimension is related to the financial situation of a country significantly, but weakly. Consumers with higher degrees of indulgence tend to collect more information and have higher expectations from service business before making leisure related decisions (Koc, Ar, & Aydin, 2007). Thus, it is predicted that their

attitude will be affected more by their trust towards ethnic restaurants. People who score high on indulgence are generally happier and have a positive attitude.

On the other hand, individuals who have a high level of restraint express limited desires, interests, and a low level of trust towards new and alternative options (Koc et al, 2007). Ethnic restaurants may be perceived as an alternative choice by short term oriented consumers. They are also more sensitive to negative feelings, and are more likely to remember negative events (Hofstede & Minkov, 2010; Koc et al, 2007). This in turn will cause individuals who value restraint more than indulgence to become cynical and show less interest in trying out new things, diminishing the effect of trust on their attitude towards ethnic restaurants

**H9:** *A higher degree of indulgence results in higher effects of trust on consumers’ attitude towards ethnic restaurants; while a higher degree of restraint results in lower effects of trust on consumers’ attitude towards ethnic restaurants.*



**Figure 2.1 Conceptual model**

The conceptual model for this study is presented in Figure 2.1. A summary of all hypotheses made for this study is presented in Figure 2.2. In the next section, the methodology of the study is explained.

### 3. Methodology

### 3.1 Study design and procedure

The main purpose of this study is to investigate the impact of visual information presented in an ethnic restaurant menu in food ordering apps on consumer purchase intentions. Furthermore, the study also seeks to find out the mediating effects of online trust and attitude, as well as the moderating effects of reputation, cosmopolitanism, and cultural values. For the purpose of generalization of the current study, and also adding more cultural variability into the data, samples were collected from both North America (respectively the U.S. and Canada) and China. However, based on the suggestions from the previous literature (Cleveland & Laroche, 2007; Hallikainen & Laukkanen, 2018), this paper assumes there is cultural heterogeneity within countries and cultural values were measured and compared at the individual level rather than the national level.

**H1:** *Online trust and consumers' attitude towards the online ethnic restaurant sequentially mediate the relationship between visual information and consumers' purchase intention: the presence of visual information (versus no visual information) enhances online trust, which leads to a higher consumer attitude, which increases consumers' purchase intention.*

**H2:** *A higher reputation of ethnic restaurants in FDA results in higher impact of visual information on consumers' online trust; while a lower reputation of ethnic restaurants in FDA results in lower impact of visual information on consumers' online trust.*

**H3:** *A higher degree of cosmopolitanism results in lower effect of visual information on consumers' online trust towards ethnic restaurants in FDA; while a lower degree of cosmopolitanism results in higher effect of visual information on consumers' online trust towards ethnic restaurants in FDA.*

**H4:** *A higher degree of masculinity results in higher effects of trust on consumers' attitude towards ethnic restaurants; while a higher degree of femininity results in lower effects of trust on consumers' attitude towards ethnic restaurants.*

**H5:** *A higher degree of power distance results in lower effect of online trust on consumers' attitudes towards ethnic restaurants in FDA, while a lower degree of power distance results in higher effect of online trust on consumers' attitudes towards ethnic restaurants in FDA.*

**H6:** *A higher degree of uncertainty avoidance results in higher effect of online trust on consumers' attitude towards ethnic restaurants in FDA, while a lower degree of uncertainty avoidance results in less effect of online trust on consumers' attitude towards ethnic restaurants in FDA.*

**H7:** *A higher degree of individualism results in higher effects of trust on consumers' attitude towards ethnic restaurants; while a higher degree of collectivism results in lower effects of trust on consumers' attitude towards ethnic restaurants.*

**H8:** *A higher degree of long term orientation results in lower effects of trust on consumers' attitude towards ethnic restaurants; while a higher degree of short term orientation results in higher effects of trust on consumers' attitude towards ethnic restaurants.*

**H9:** *A higher degree of indulgence results in higher effects of trust on consumers' attitude towards ethnic restaurants; while a higher degree of restraint results in lower effects of trust on consumers' attitude towards ethnic restaurants.*

### **Figure 2.2 Summary of Hypotheses**

A 2 (Visual information: present vs. absent) x 2 (Reputation: high vs. low) between-subject design was conducted in North America and China. All data were collected through online surveys. Participants were randomly assigned to one of the four conditions, and were asked to read the consent form, and agree with the conditions before they could start the survey. During the study, participants were presented with a part of a menu from a fictional Japanese restaurant in a fake food ordering app. A short descriptive message was also presented with the menu as follow:

*“Now please imagine that you are looking for a place to order some food from an online food ordering app. You browse an online food ordering app which is called EZFood and find a Japanese sushi restaurant. A part of the menu and the average rating of this restaurant are shown below. Please review the menu. Questions regarding your opinions on the menu as well as the Food Ordering app will be presented once you finish reviewing and click continue.”*



**Figure 3.1 Sample Stimuli in English and Chinese**

The visual information was manipulated by including/excluding a dish picture by every dish presented in the menu, and also a visual background appeared at the top of the menu. Reputation was manipulated by the ratings from 1-5, along with a “star” sign appearing at the top left corner of the menu. All information from the survey, including titles, consent form, descriptive message, menu design, and survey questions were initially designed in Qualtrics and were translated into Chinese. Examples of the menu with both English and Chinese versions are presented in Figure 3.1.1. The English version shows the condition in which visual information is presented in the menu with a high reputation. The Chinese version represents

the condition in which visual information is absent from the menu with a low reputation. Next, consumers' online trust, attitudes, purchase intentions, cosmopolitanism, and cultural values were measured.

### **3.2 Data collection**

A total of  $n=340$  participants were recruited from North America and China. All participants indicated that they have had past experience in online shopping. Among the participants,  $n=160$  of them were recruited in North America through Mturks,  $n=180$  of them were recruited in China through Tengxun Wenjuan (<https://wj.qq.com/>), a survey service similar to Mturks. Each participant received a \$2 incentive after the survey in North America and ¥4 for participants in China. Overall, 325 samples qualified as valid, and 15 samples were eliminated from the data analysis process due to various reasons (e.g., Extremely short completion time; disagreed with the consent form). Among the valid data,  $n=166$  respondents were from China, and  $n=159$  respondents were from NA. About 41.2% of the participants were female and about half (49.8%) of the participants were from age 25-39. More detailed sample characteristics are shown in Table 1.

### **3.3 Measurements and scales**

All scales used in this study were adapted from validated scales developed in previous research. Minor modifications were made to some of the items to make the items fit the context of this study. Details of the items are found in Appendix A. There are a total of 48 items measured in the questionnaire. All items were measured with 7-points Likert scales. Consumers' online trust was measured via five items adapted from Cyr, Kindra & Dash (2008) and Bart, Shankar, Sultan, & Urban (2005). Consumer attitudes contain three items adapted from Karmarkar and Tormala (2010) measured on a 7-point Likert scale (Good-Bad; Favorable-Unfavorable; positive-negative).

Purchase intention was measured with two items adapted from Karmarkar and Tormala (2010). The measurement of cosmopolitanism was adapted from Cleveland et al.'s (2009) study, which contained six items. At last, the first five dimensions of cultural values were measured with 26 items adapted from Yoo, Donthu, and Lenartowicz's (2011) measurements, which were power distance (5 items), uncertainty avoidance (5 items), collectivism (6 items), long-term orientation (6 items), and masculinity (4 items). The scale for the newest cultural dimension, which is indulgence, which had six items, was adapted from Heydari et al.'s (2019)

working paper. The data was analyzed using SPSS statistics version 27. The results are presented in the following section.

Sample N= 325		Frequency	Percent %
Gender	Male	188	57.8
	Female	134	41.2
	Transgender	2	0.6
	Not listed here	1	0.3
	Total	325	100.0
Age	18-24	105	32.3
	25-39	162	49.8
	40-60	52	16.0
	60+	6	1.8
	Total	325	100.0
Nationality	Asian or Pacific Islander	9	2.8
	Black or African American	8	2.5
	Hispanic or Latino	5	1.5
	Native American or Alaskan Native	2	0.6
	White or Caucasian	131	40.3
	Prefer not to answer	1	0.3
	Not listed here	3	0.9
	Chinese	166	51.1
	Total	325	100.0

**Table 1 Sample Characteristics (N=325)**

#### **4. Analysis and results**

##### **4.1 Reliability and Validity**

The reliability test was conducted using SPSS statistics 27 by testing the Cronbach's  $\alpha$  of all constructs used in the study. In general, reliability is considered acceptable when Cronbach's  $\alpha$  is higher than 0.7. As presented in Table 2, Cronbach's  $\alpha$  for all constructs used in the study is higher than 0.7, ranging from 0.802 to 0.938, which indicated good internal consistency of the constructs.

<b>Construct</b>	<b>Reference</b>	<b>Items</b>	<b>Cronbach's <math>\alpha</math></b>
Trust	Bart et al (2005); Cyr et al (2008)	5	0.916
Attitudes	Karmarkar and Tormala (2010)	3	0.930
Purchase Intentions	Karmarkar and Tormala (2010)	2	0.938
Cosmopolitanism	Cleveland et al (2009)	6	0.909
Indulgence	Heydari et al (2019)	6	0.896
Power Distance	Yoo et al (2011)	5	0.913
Uncertainty Avoidance	Yoo et al (2011)	5	0.885
Collectivism	Yoo et al (2011)	6	0.900
Long-term Orientation	Yoo et al (2011)	6	0.802
masculinity	Yoo et al (2011)	4	0.924

**Table 2 Constructs, Reference, and Cronbach's  $\alpha$**

An exploratory factor analysis was conducted to investigate the construct validity of the data. As shown in Table 3, the KMO measure for our construct was 0.898, exceeding the common cutoff value of 0.5. The high KMO value which exceeded 0.8 indicates the data was suitable for factor analysis (Kaiser & Rice, 1974). Besides, Bartlett's test of sphericity was significant ( $p=0.000$ ), which also indicates the data was suitable for factor analysis and an overall good structural validity. Overall, the ten factors have explained 67.3% of the total variance. The factor loadings for all items exceeded the widely accepted level of 0.5, ranging from 0.861 to 0.568, to their measured constructs except for 2 items that measured long-term orientation (0.398 and 0.339 respectively). However, the scale for long-term orientation was adapted from a previous validated study without any modification. Plus, some researchers also suggested that items' factor loadings which exceed 0.3 could also be acceptable (Costello & Osborne, 2005). The items from long-term orientation were kept for further analysis. The hypotheses regarding mediation and moderation effects were then tested in SPSS using Hayes PROCESS macro models and the results will be presented in the following section.

**Table 3 KMO and Bartlett's Tests**

<b>KMO and Bartlett's Test</b>		
Kaiser-Meyer-Olkin Measure of Sampling		0.898
Bartlett's Test of Sphericity	Approx. Chi-Square	11886.956
	df	1128
	Sig.	0.000

## 4.2 Hypotheses testing

### 4.2.1 Mediation test

The first hypothesis of this study predicts that the effect of visual information on purchase intention is sequentially mediated by online trust and attitude . Therefore, based on Hayes's (2017) model suggestion, Model 6 from Hayes PROCESS macro was used to test the sequential mediation effects hypothesized in H1. Visual information was used as the independent variable and was dummy coded into 1 (presence of visual information), and 0 (absence of visual information). The variables included in the analysis were: visual information (IV), trust and attitude (inputted in sequence), and purchase intention (DV). The bootstrap method was also used for testing the indirect effects with 10,000 bootstrap samples, recommended by Hayes (2017) for mediation analysis using Model 6.

The outcome of the mediation analysis is summarized in Table 4. Model 1 indicated that there is a significant positive relationship between visual information and online trust ( $\beta=0.397, p < 0.005$ ). Model 2 suggested that the positive relationship between online trust and attitude is significant ( $\beta=0.698, p < 0.001$ ). Model 3 indicates a significant and positive relationship between attitude and purchase intention ( $\beta=0.940, p < 0.001$ ). The overall results represent significant sequential mediation effects of online trust and attitude on the relationship between visual information and purchase intention. Furthermore, the bootstrap analysis revealed that the total effect of visual information on purchase intention was significant ( $\beta=0.829, p < 0.001$ ), however, with a nonsignificant direct effect ( $\beta=0.058, p=0.59, 95\% CI=[-0.1563, 0.2730]$ ) and a significant indirect effect through the mediation of online trust and attitude ( $\beta=0.260, 95\% CI=[0.0991,0.4393]$ ). In summary, the results demonstrated that the presence of visual information on an ethnic restaurant menu in FDAs engenders higher online trust, which causes more favorable attitudes which in turn, trigger higher purchase intentions. Thus, H1 was supported.

**Table 4 Mediation Analysis Output**

	Model 1 Outcome Variable: TRUST		Model 2 Outcome Variable: ATT		Model 3 Outcome Variable: PI	
Variables	$\beta$	t	$\beta$	t	$\beta$	t
VS	0.3968**	3.1141**	0.4731***	4.3767***	0.0584	0.5352
TRUST	–	–	0.6984***	15.0162***	0.1653**	2.7796**
ATT	–	–	–	–	0.9396***	17.1926***
R-sq	0.0291		0.4607		0.6803	
F	9.6978**		137.5513***		227.661***	

Notes: \* $p < 0.05$ ; \*\* $p < 0.01$ ; \*\*\* $p < 0.001$ . VS=visual information; ATT=attitude; PI=purchase intention. TRUST=trust.

**Table 5 Bootstrap Analysis Output**

Indirect Effect Key	Effect	BootSE	BootLLCI	BootULCI	t	p
Total	0.7704	0.1456	0.4865	1.0574		
VS->TRUST->PI	0.0656	0.0362	0.0089	0.1492		
VS->ATT->PI	0.4445	0.1096	0.2371	0.6697		
VA->TRUST->ATT->PI	0.2604	0.0866	0.0991	0.4393		
<b>Direct Effect</b>						
VS->PI	0.0584		-0.1563	0.273	0.5352	0.5929
<b>Total Effect</b>						
VS->PI	0.8288		0.4781	1.1795	4.6494	0.0000

Notes: VS=visual information; ATT=attitude; PI=purchase intention; TRUST=trust.

Level of confidence for all confidence intervals in output: 95.0000; Number of bootstrap samples for percentile bootstrap confidence intervals: 10000.

#### 4.2.2 Moderation tests

After testing the serial mediating effects for the overall model, moderation analyses were conducted to test the moderation effects of reputation, cosmopolitanism, and six dimensions of cultural values separately.

First, the moderating effects of reputation and cosmopolitanism on the relationship between visual information and online trust were tested with model 1 from Hayes PROCESS macro respectively. Reputation was dummy coded into 1 (high reputation) and 0 (low

reputation). The results in Table 6 showed that the interaction between visual information and reputation was nonsignificant ( $\beta=-.356$ ,  $p=.1560$ ), indicating that no moderation effect of reputation was found. Hence, H2 was not supported.

**Table 6 Moderation Analysis Output: Reputation**

OUTCOME VARIABLE:  
TRUST

Model Summary							
	R	R-sq	MSE	F	df1	df2	p
	.2642	.0698	1.2716	8.0294	3.0000	321.0000	.0000

Model							
	coeff	se	t	p	LLCI	ULCI	
constant	4.4561	.1245	35.7838	.0000	4.2111	4.7011	
VS	.5739	.1772	3.2386	.0013	.2253	.9225	
REP	.6098	.1761	3.4624	.0006	.2633	.9562	
Int_1	-.3558	.2502	-1.4220	.1560	-.8481	.1365	

Notes: VS=visual; REP=reputation; N=325

The results, as shown in Table 7, suggest that the interaction effect of cosmopolitanism and visual was statistically significant ( $\beta=-.283$ ,  $p < 0.05$ ), indicating that there is a moderating effect of cosmopolitanism on the relationship between visual information and online trust. After looking at the output of conditional effects, the results revealed that the positive relationship between visual information and trust was nonsignificant at +1SD of cosmopolitanism (COS), and was significant at -1SD and Mean COS condition. Thus, cosmopolitanism negatively moderated the relationship between visual information and trust. H3 was supported.

Second, the moderation effect of cultural values on the relationship between online trust and attitude was tested through model 1 as well. Since all hypotheses made on cultural values were directional, one-tailed t-tests were used in testing the hypotheses regarding the moderation effect of cultural values (Zar, 1999). Since the output from SPSS only provided results from two-tailed t-tests, p values were then divided by 2 to examine the effect in one-tailed tests. The summary of the output with two-tailed t-tests was shown in Table 8. Among the six dimensions of cultural values, no significant interaction effects were found between trust and indulgence ( $\beta=0.009$ ,  $p=0.82$ ), trust and collectivism ( $\beta=0.064$ ,  $p=0.11$ ), trust and long-term orientation ( $\beta=0.058$ ,  $p=0.26$ ), and trust and masculinity ( $\beta=-0.001$ ,  $p=0.97$ ) in either two-tailed or one-

tailed tests. The results suggested that the moderation effects of the aforementioned cultural values were not significant. Thus, H4, H7, H8, H9 were not supported.

**Table 7 Moderation Analysis Output: Cosmopolitanism**

```

Model : 1
  Y : TRUST
  X : VS
  W : COS

Sample
Size: 325

*****
OUTCOME VARIABLE:
TRUST

Model Summary
      R      R-sq      MSE      F      df1      df2      p
      .4166    .1736    1.1297    22.4744    3.0000    321.0000    .0000

Model
      coeff      se      t      p      LLCI      ULCI
constant    1.5139    .4893    3.0942    .0021    .5513    2.4765
VS          1.9507    .7163    2.7234    .0068    .5415    3.3599
COS         .5797    .0861    6.7342    .0000    .4103    .7490
Int_1      -2.2833    .1248   -2.2698    .0239   -.5289   -.0378

Product terms key:
Int_1      :      VS      x      COS

Test(s) of highest order unconditional interaction(s):
      R2-chng      F      df1      df2      p
X*W      .0133      5.1521      1.0000      321.0000      .0239
-----
      Focal predict: VS      (X)
      Mod var: COS      (W)

Conditional effects of the focal predictor at values of the moderator(s):

      COS      Effect      se      t      p      LLCI      ULCI
4.7080      .6169      .1676      3.6814      .0003      .2872      .9466
5.6569      .3480      .1181      2.9463      .0035      .1156      .5804
6.6059      .0792      .1670      .4742      .6357     -.2494      .4077

```

Notes: VS=visual; COS=cosmopolitanism; N=325

The interaction between power distance and trust was non-significant in a two-tailed test ( $\beta = -0.054, p = 0.06$ ). However, the interaction coefficient was negative as predicted in the directional hypothesis H5, a one-tailed t-test would be suitable for this condition. Thus, the moderation effect of power distance is significant on the relationship between online trust and attitude ( $\beta = -0.054, p = 0.03$ , one-tailed), indicating that the effect of online trust on attitude will be reduced as the degree of power distance increases. Thus, H5 is supported. The interaction effect between uncertainty avoidance and trust was significant ( $\beta = .101, p = 0.03$ ), indicating that uncertainty avoidance moderates the relationship between trust and attitude in this study. The

Johnson-Neyman output further revealed that the positive relationship between trust and attitudes became stronger as uncertainty avoidance went higher, and the positive relationship became nonsignificant when uncertainty avoidance went down (UAV=1.78,  $p=0.07$ ). Thus, H6 was supported by the results. Further discussion of the results are explained in the next section.

**Table 8 Moderation Analysis Output: Cultural Values**

DV=ATT	N=325	Coefficient		Model Fit	
Moderator	Variables	$\beta$	t	R <sup>2</sup>	F
IND	TRUST	0.6355**	3.086	0.4582	90.479***
	IND	0.1593	0.8199		
	IND*TRUST	0.0087	0.2225		
PD	TRUST	0.8725***	8.8181	0.4738	96.3538***
	PD	0.4523*	2.8742		
	PD*TRUST	-0.0543	-1.8659		
UAV	TRUST	0.1555	0.5878	0.4376	83.2396***
	UAV	-2.0143*	-2.0143		
	UAV*TRUST	0.1014*	2.2036		
COL	TRUST	0.4148*	2.2315	0.4432	85.1537***
	COL	-0.2127	-1.0257		
	COL*TRUST	0.0641	1.6214		
LTO	TRUST	0.4218	1.4826	0.4311	81.0855***
	LTO	-0.2934	-1.1779		
	LTO*TRUST	0.0579	1.1307		
MAS	TRUST	0.7393***	6.5081	0.4492	87.254***
	MAS	0.1108	0.8176		
	MAS*TRUST	-0.001	-0.0405		

Note: \* $p < 0.05$ ; \*\* $p < 0.01$ ; \*\*\* $p < 0.001$ . two tailed. VS=visual; COS=cosmopolitanism; ATT= attitude; IND= indulgence; PD= power distance; UVA= uncertainty avoidance; COL= collectivism; LTO= long-term orientation; MAS= masculinity.

## **5. Discussion and implications**

### **5.1 General discussion**

Several studies have been conducted on the impact of visual information, reputation, cosmopolitanism, and cultural values in the context of e-commerce and the food industry in marketing and hospitality management literature (Cyr et al., 2008; Hou et al, 2017; Zhang & Hanks, 2018). However, to the extent of the author's knowledge, very few studies focused specifically on the effect of visual information on consumer purchase intentions towards ethnic restaurants in the FDAs (OFD) literature. According to the results, H1 was supported, which means that visual information in an ethnic restaurant menu in FDAs positively impacts consumer purchase intentions. Furthermore, this positive relationship is sequentially mediated by trust and consumer attitudes, indicating that presenting food pictures along with dish names makes consumers have higher trust towards the ethnic restaurant, which induces more favorable attitudes, resulting in increased purchase intentions. The results could also further explain the positive relationship between visual information and purchase intention/intention to use by the mediating effects of trust and attitude (Mitchell & Olson, 1981; Seaman et al., 2014).

Second, H3 is supported by our results, suggesting that cosmopolitanism moderates the positive relationship between visual information and trust; people with a higher degree of cosmopolitanism have higher trust towards the ethnic restaurants in FDAs, whether there is visual information or not. This finding is consistent with the definition of cosmopolitanism (Cleveland et al., 2009, 2011), and provided empirical findings that supported that cosmopolitans are generally open to different cultures, and willing to try out products from other cultures, even if they know there could be risks. However, since cosmopolitanism was measured instead of manipulated in this study, it happened that cosmopolitanism was generally high in our data (Mean COS= 5.66, SD=0.95). This is one of the limitations concerning the current study, and further studies should consider enlarging the sample size to avoid this problem. On the other hand, the results did not support H2, meaning that no moderation effect was found for reputation in this study. One reason to explain the non-significant moderation role of reputation could be that the icons of "ratings" and the "stars" indicating the reputation of the restaurant were too small in size for participants to notice since most of the participants finished their survey through mobile devices. Another reason could also be that we happened

to have a “high” cosmopolitanism participant group that cares less about the ethnic restaurant’s ratings.

**Table 9 Summary of Hypotheses**

Hypotheses	Status
H1: <i>Online trust and consumers’ attitude towards the online ethnic restaurant sequentially mediate the relationship between visual information and consumers’ purchase intention: the presence of visual information (versus no visual information) enhances online trust, which leads to a higher consumer attitude, which increases consumers’ purchase intention.</i>	<b>Supported</b>
H2: <i>Higher reputation of ethnic restaurants in FDA results in higher impact of visual information on consumers’ online trust; while lower reputation of ethnic restaurants in FDA results in lower impact of visual information on consumers’ online trust.</i>	Not supported
H3: <i>A higher degree of cosmopolitanism results in lower effect of visual information on consumers’ online trust towards ethnic restaurants in FDA; while a lower degree of cosmopolitanism results in higher effect of visual information on consumers’ online trust towards ethnic restaurants in FDA.</i>	<b>Supported</b>
H4: <i>A higher degree of masculinity results in higher effects of trust on consumers’ attitude towards ethnic restaurants; while a higher degree of femininity results in lower effects of trust on consumers’ attitude towards ethnic restaurants.</i>	Not supported
H5: <i>A higher degree of power distance results in lower effect of online trust on consumers’ attitudes towards ethnic restaurants in FDA, while lower degree of power distance results in higher effect of online trust on consumers’ attitudes towards ethnic restaurants in FDA.</i>	<b>Supported</b>
H6: <i>A higher degree of uncertainty avoidance results in higher effect of online trust on consumers’ attitude towards ethnic restaurants in FDA, while lower degree of uncertainty avoidance results in less effect of online trust on consumers’ attitude towards ethnic restaurants in FDA.</i>	<b>Supported</b>
H7: <i>A higher degree of individualism results in higher effects of trust on consumers’ attitude towards ethnic restaurants; while a higher degree of collectivism results in lower effects of trust on consumers’ attitude towards ethnic restaurants.</i>	Not supported

<p>H8: <i>A higher degree of long term orientation results in lower effects of trust on consumers' attitude towards ethnic restaurants; while a higher degree of short term orientation results in higher effects of trust on consumers' attitude towards ethnic restaurants.</i></p>	<p>Not supported</p>
<p>H9: <i>A higher degree of indulgence results in higher effects of trust on consumers' attitude towards ethnic restaurants; while a higher degree of restraint results in lower effects of trust on consumers' attitude towards ethnic restaurants.</i></p>	<p>Not supported</p>

H4, H7, H8, and H9 regarding the moderation effect of cultural values on the relationship between trust and attitude were all rejected based on the nonsignificant interaction results. Thus, it can be concluded that individuals with different cultural values on indulgence, masculinity, collectivism, and long-term orientation will show no differences in their attitudes towards ethnic restaurants in FDAs based on their online trust. However, H5 is supported, which means that people with a high degree of power distance perception will less likely to express their attitudes based on how much they trust the online vendors, but rather listen and follow instructions from authorities with higher power (Yoo & Donthu, 2005).

Moreover, H6 was also supported by the results, meaning that the positive effect of trust on attitude will be stronger for individuals with a high degree of uncertainty avoidance. This result is consistent with findings from previous literature (Farley & Murched, 2016). Even though individuals with high uncertainty avoidance tend to avoid situations with uncertainty and ambiguity and express more need for security and information (Hofstede, 1991), it also indicates that their attitudes will be affected more by trust than those who have low uncertainty avoidance. The pictures that appeared on the menu in FDAs would provide more information on what kind of food they will get from an ethnic restaurant and reduce their perceived risks and uncertainty. Hence, high uncertainty avoidance individuals generate more trust in the ethnic restaurant, which results in more positive attitudes towards the restaurant.

Overall, the findings suggested visual information has a positive impact on consumer purchase intentions through the mediation of trust and attitude. Higher degree cosmopolitanism will make the positive impact of visual information on online trust less prominent; And finally, among the cultural values, uncertainty avoidance was the most prominent value that moderates the relationship between online trust and attitude, followed by power distance, which

negatively moderates that positive effect of online trust on consumer attitudes towards ethnic restaurants in FDA.

## **5.2 Theoretical implications**

The effect of visual information has been studied in many contexts in e-commerce. However, few studies regarding the effect of visual information have been conducted in the FDAs (OFD) context. The current study filled this gap and contributed to the OFD literature by confirming the positive impact of visual information on consumers' purchase intentions towards ethnic restaurants in food ordering apps, and the significant serial mediation effect of trust and attitude. Moreover, cosmopolitanism is becoming a popular research subject because of the rapid development of the internet and globalization. Empirical studies of cosmopolitanism in the online marketing context remain scarce. This study also added empirical findings to the cosmopolitanism literature by finding out the moderating effect of cosmopolitanism on the relationship between visual information and trust towards online ethnic restaurants.

The study also investigated the moderating effect of all six dimensions of cultural values at the individual level. However, the relationship between trust and attitude towards online ethnic restaurants seems moderated only by uncertainty avoidance and power distance. To the extent of the author's knowledge, no previous studies examined the effect of cultural values in the context of ethnic restaurants and FDAs. The current findings may provide some insights for future studies on FDAs (OFD) and ethnic products. Furthermore, since Hallikainen & Laukkanen (2018) found that aspects of cultural values such as collectivism and masculinity had a significant direct effect on three dimensions of trust (ability, benevolence, integrity) towards e-commerce separately, future research could also be conducted to examine the moderating effect of cultural values on the relationship between visual information and trust, instead of between trust and attitude.

## **5.3 Managerial implications**

The findings also provide some practical implications for OFD firms and ethnic restaurant owners who intend to expand their business to the online market. First, the findings indicated that in general, consumers who use food ordering apps respond more positively to online menus with food pictures presented, compared to those with dish names solely. Therefore, FDA managers should consider asking restaurant owners to optimize their online

menus with visual information in order to gain more trust from consumers as well as increase the overall credibility of FDAs.

As Cleveland, Laroche & Takahashi (2014) argued, cosmopolitanism should be viewed as a learned disposition; globalization of media, and the development of internet technology allowed people to become cosmopolitans and to engage with people and products from other cultures without traveling and physical contiguity. Hence, our main findings regarding visual information and the significant moderating effect of cosmopolitanism both provided useful information for ethnic restaurant owners. The owners and managers of ethnic restaurants should consider putting the restaurants onto different food ordering apps with proper advertisements to increase their online publicity, which should be more likely to attract more cosmopolitan customers through the online media and result in more profits. Moreover, ethnic restaurant owners should pay close attention to their menu design and detailed information, especially visual information, to attract less cosmopolitan consumers, as well as consumers who have a higher degree of uncertainty avoidance. Lastly, since the effect of online trust on attitude will be less prominent in high power distance societies, ethnic restaurant owners should also familiarize themselves with local demographic characteristics and learn more about the local government policies as well as acceptance on e-commerce and foreign products before opening their restaurants.

## **6. Limitations and future directions**

There are various limitations to this study. First, the data collected for the study appeared to belong to a high cosmopolitan group; this could affect the normality and robustness of the data, which could weaken the strength of the significant moderation effect of cosmopolitanism. Thus, future studies should be conducted with a larger sample size with more robustness. Second, during the exploratory factor analysis, the items that measured attitude and purchase intention both had high loadings into one factor, suggesting that they are measuring the same construct. This limitation could be caused by adopting these two variables from the same literature, and they were measured as dependent variables separately in the previous literature. Moreover, the items contained in attitude and purchase intention were also scarce. Thus, future research should consider adopting scales not only for attitude and purchase intention, but also for other variables, with more caution and reviewing different scales measuring the same variable carefully before choosing. Another possible explanation for the confounding loadings of attitude and purchase intention would be that consumers may be

generating their attitude and making the purchase decision at the same time when they are using FDAs.

Third, the manipulation of reputation in this study may fail to be noticed by participants in this study because of the “one star” symbol instead of “five stars”, and this study did not add a manipulation check for reputation. However, reputation was considered an important factor in online shopping, and was found to have a significant impact on online trust in several previous studies (Einwiller, 2003; Tran, 2020). Thus, future research could study the moderating effect of reputation between visual information and trust with more prominent manipulation, or test the direct effect of reputation on trust solely in the context of FDAs because since restaurants in FDA are often categorized by the level of reputation, so reputation could be a more salient factor which directly affects consumer’s trust and purchase intention in FDA context. Finally, this study used a menu from a Japanese restaurant, as a representation of ethnic food, which indicates that the result may not be generalizable to other ethnic restaurants with different ethnic attributes. Moreover, sushi ,as a well-known ethnic food, has received pretty divergent opinions among different consumers. There are many potential covariates that have not been controlled in this study (liking for sushi, dietary restrictions, vegetarian, etc.). Future studies on ethnic restaurants in FDAs could use ethnic food categories from different cultures as stimuli and control possible covariates for more generalizable and accurate results.

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## **Appendices**

### **Appendix A: Items used in the questionnaire**

#### **Age**

Please indicate your age group:

- 18-24
- 25-39
- 40-60
- 60 plus

#### **Gender**

What is your gender:

- Female
- Male
- Transgender

**Cosmopolitanism** (Cleveland et al., 2009) (All items are measured using a seven-point Likert scale (1= strongly disagree; 7= strongly agree))

1. I enjoy exchanging ideas with people from other cultures or countries
2. I am interested in learning more about people who live in other countries
3. I enjoy being with people from other countries to learn about their views and approaches.
4. I like to observe people of other countries, to see what I can learn from them
5. I like to learn about other ways of life
6. I find people from other cultures stimulating

**Six dimensions of national culture values** (Heydari et al., 2019; Yoo et al., 2011)

All items were measured using seven-point Likert-type scales, anchored by (1) “strongly disagree” and (7) “strongly agree”.

### **Indulgence vs restraint**

1. I seek every chance I can to have fun
2. Feeling and desires related to merrymaking with friends should be gratified freely
3. There should not be any limits on individuals’ enjoyment
4. Societies should value relatively free gratification of desires and feelings
5. Desires, especially with respect to sensual pleasure should not be suppressed
6. Gratification of desires should not be delayed

### **Power distance**

1. People in higher positions should make most decisions without consulting people in lower positions.
2. People in higher positions should not ask the opinions of people in lower positions too frequently.
3. People in higher positions should avoid social interactions with people in lower positions.
4. People in lower positions should not disagree with decisions made by people in higher positions.
5. People in higher positions should not delegate important task to people in lower positions.

### **Uncertainty avoidance**

1. It is important to have instructions spelled out in detail so that I always know what I am expected to do.
2. It is important to closely follow instructions and procedures.
3. Rules and regulations are important because they inform me as to what is expected of me.
4. Standardized work procedures are helpful.
5. Instructions for operations are important.

### **Collectivism/ Individualism**

1. Individuals should sacrifice self-interest for the group.
2. Individuals should stick with the group even through difficulties.
3. Group welfare is more important than individual rewards.
4. Group success is more important than individual's success.
5. Individuals should only pursue their goals after considering the welfare of the group.
6. Group loyalty should be encouraged even if individual goals suffer.

### **Long-term orientation**

How closely do you associate with the following qualities?

1. Careful management of money (Thrift)
2. Going on resolutely in spite of opposition (Persistence)
3. Personal steadiness and stability
4. Long-term planning
5. Giving up today's fun for success in the future
6. Working hard for success in the future

### **Masculinity/ Femininity**

1. It is more important for men to have a professional career than it is for a woman.
2. Men usually solve problems with logical analysis, women usually solve problems with Intuition.
3. Solving difficult problems usually requires an active, forcible approach, which is typical of men.
4. There are some jobs that a man can always do better than a woman.

**Trust** (Cyr & Kindra, 2008; Bart, Shankar, Sultan, & Urban, 2005) All items are measured using a seven-point Likert scale (1= strongly disagree; 7= strongly agree)

1. I can trust the online vender
2. This online restaurant is credible to me
3. I can trust the information presented in this menu.
4. My overall believability of the information on the online vendor
5. The online vendor/app represents a company or organization that will deliver on promises made

### **Attitude** (Karmarkar & Tormala, 2010)

All items are measured using a seven-point Likert scale

Please indicate your attitude towards this restaurant:

1. Negative- Positive
2. Bad-good
3. Unfavorable- favorable

### **Purchase Intention** (Karmarkar & Tormala, 2010)

All items are measured using a seven-point Likert scale

1. Please indicate how interested you would be ordering food from this restaurant
2. Please indicate how much you think you would like placing orders from this restaurant

## **Appendix B: Information and consent form**

**Study Title:** Exploring the Impact of Visual Information on Ethnic Restaurants Purchase Intention in Food Ordering Apps and the Moderating Role of Cosmopolitanism and Cultural Values

**Researcher:** Zhen Zhang

**Researcher's Contact Information:** 13930589881@163.com

**Faculty Supervisor:** Michel Laroche

**Faculty Supervisor's Contact Information:** Michel.laroche@concordia.ca

### **Source of funding for the study:**

You are being invited to participate in the research study mentioned above. This form provides information about what participating would mean. Please read it carefully before deciding if you want to participate or not. If there is anything you do not understand, or if you want more information, please ask the researcher.

The consent form and materials will be translated into Chinese (Simplified) for participants in China.

### **A. PURPOSE**

Online food delivery apps have become trendy around the world in the past years. It is a convenient and time-saving way for people who do not have the time to dine out and it often offers promotions. Consumers will get the food delivered to their door with a few clicks.

The purpose of this research aims to study how consumers with different cultural backgrounds and cosmopolitanism will have different attitudes towards an ethnic restaurant when they are ordering food online. Meanwhile, the research also aims to understand how the design of an online menu will impact consumers' levels of trust and attitudes towards an ethnic restaurant.

### **B. PROCEDURES**

If you participate, you will be asked to read the instruction. The survey will begin once you click "I agree"

During the survey, you will be asked to review a menu with different dish names of an ethnic restaurant from an online food ordering application as well as the ratings of the restaurant. You will then be asked some questions regarding cultural opinions. At last, you will be asked to express your opinions towards the ethnic restaurant.

In total, participating in this study will take 15-20 mins.

### **C. RISKS AND BENEFITS**

You will not face any foreseeable risks for participating in this survey.

This research is not intended to benefit you personally.

### **D. CONFIDENTIALITY**

We will gather the following information as part of this research:

- Age range
- Gender
- Cultural background
- Opinions on cultural values
- Opinions on cosmopolitanism
- Level of trust towards a certain restaurant
- Attitude towards a certain restaurant
- Purchase intention towards a certain restaurant

We will not allow anyone to access the information, except people directly involved in conducting the research. We will only use the information for the purposes of the research described in this form.

It should be noticed that you cannot withdraw your data after submitting.

The information gathered will be anonymous. That means that it will not be possible to make a link between you and the information you provide.

We will protect the information by storing the data into a secured computer with passwords that are only known by researchers. Only research and supervisor will have access to the data during the time of the data analyzing process.

We intend to publish the results of the research. However, it will not be possible to identify you in the published results.

We will destroy the information five years after the end of the study.

## **F. CONDITIONS OF PARTICIPATION**

You do not have to participate in this research. It is purely your decision. If you do participate, you can stop at any time. If you have any questions regarding this survey, please contact the researcher

As a compensatory indemnity for participating in this research, you will receive \$3. If you withdraw before the end of the research, you will not receive anything.

It will not be possible to identify you from this list once you submit this survey.

There are no negative consequences for not participating, stopping in the middle, or asking us not to use your information.

## **G. PARTICIPANT'S DECLARATION**

I agree to participate in this survey under the conditions described above

I am over 18 years old

I have read and understood this form.

I have had the chance to ask questions and any questions have been answered.

§ I agree

§ I disagree

If you have questions about the scientific or scholarly aspects of this research, please contact the researcher. Their contact information is on page 1. You may also contact their faculty supervisor.

If you have concerns about ethical issues in this research, please contact the Manager, Research Ethics, Concordia University, 514.848.2424 ex. 7481 or [oor.ethics@concordia.ca](mailto:oor.ethics@concordia.ca).