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RESEARCH ARTICLE



# The Influence of Cognitive Food Image on Tourists' Desire and Intention to Consume Destination Food: A Macau Study

Jianlun Zhang , Ja Young (Jacey) Choe  and Christine Lim

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## ABSTRACT

Despite its importance, moderated mediation analysis of destination food image is understudied in food tourism literature. By applying the stimulus-organism-response framework, the objectives of this study are firstly, to investigate the cognitive food image-intention relationship. Secondly, it will examine how tourists' desire to try local food is affected by cognitive image of destination food. Thirdly, desire-intention relationship will be investigated. Fourthly, the mediating effect of tourists' desire to try local food on the cognitive image-intention relationship will be examined. Fifthly, the moderating effect of tourists' perceived difficulty of finding local food on the desire-intention relationship will be discussed. Lastly, gender as a moderator on the cognitive image-desire relationship will be examined. This research is based on an online survey of 449 Chinese tourists who have visited Macau. Our findings show that tourists' desire to try destination food mediates the relationship between food image and tourists' intention to eat destination cuisine. The mediation effect is more salient for low level of tourists' perceived difficulty of finding destination cuisine. However, gender as a moderator of the image-desire is not significant. The study provides insight to destination management organizations and food-service businesses on the use of local cuisine in destination promotion.

## ARTICLE HISTORY

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## KEYWORDS

Destination food image; desire; intention; stimulus-organism-response framework; PLS-SEM; moderated mediation; Macanese food

## 关键词

目的地食物形象; 欲望; 意图; 本研究运用刺激物-机体-反应框架; 偏最小二乘法结构方程模型; 带调解的中介分析, 澳门当地美食

## 认知型食物形象对游客尝试当地食物的欲望与意图的影响:一项以澳门当地美食为例的研究

### 摘要

目的地美食形象的带调节效应的中介分析在美食旅游文献中并未得到充分研究。本研究运用刺激物-机体-反应框架, 首先考察目的地食物认知形象对游客的食物品尝意愿的直接影响。其次, 本研究将考察目的地美食认知形象对游客尝试当地美食的欲望造成的影响。第三, 研究旅客品尝目的地食物的欲望对其目的地食物品尝意图的影响。第四, 考察游客尝试当地美食的欲望在认知意象对食物品尝意向的影响之间的中介作用。第五, 讨论旅客感觉寻找当地食物的难易程度对食物品尝欲望和品尝意图间关系的调节作用。最后, 探讨性别能否作为食物认知形象和游客品尝当地食物欲望间关系的调节因素。基于对 449 名到访澳门的中国游客的一项在线调查, 本研究发现中国游客尝试目的地美食的欲望在食物形象与游客品尝目的地美食的意愿之间起中介作用。若国内游客觉得能比较

容易找到目的地美食, 则上述中介效应更为显著。然而, 本研究并未发现性别对食物认知形象及品尝当地食物欲望间的关系有调节作用。该研究为目的地管理组织和餐饮服务企业提供了如何运用在地食物形象对目的地进行包装及推广的见解。

## 1. Introduction

Tasting local food can be an important deciding factor on tourists' choice of visiting a destination (Henderson et al., 2012). According to UNWTO (2019), more than one-third of a tourist's traveling budget is dedicated to food and beverage. Information related to local cuisine can contribute to tourists' search for unique food experience during their vacation (Björk & Kauppinen-Räsänen, 2016). Food experience in the destination has become a potential pull force of inbound tourism as local food provides tourists with authentic culinary experience of destinations, and creates memory of the places they have visited (Mohamed et al., 2020).

Studies of destination image reveal that photographs taken in a destination can express the features of the place (Herath et al., 2020). According to Hunter (2012), photographs which depict the prominent features of the destination can help to shape visitors' perception of the destination. In the context of destination food image,<sup>1</sup> drawing tourists' attention to visual appeals of local food relies on favorable pictures as advertisements (ads) of destination food (Frochot, 2003). Pictures of destination food presented in government tourism website can help to shape tourists' perception of local cuisine and influence their consumption intention of local food (Hornig & Tsai, 2010). Research on the cognitive appeals of local food image is crucial, for such research can provide insights for the development of destination promotion materials and websites (Frochot, 2003; Lai et al., 2020).

Research on the role of local cuisine in destination promotion and branding has received growing interest in recent years. This is driven in part by destinations' attempt to use local food offerings as attractions to differentiate themselves (Mak et al., 2012). Previous studies of destination food image were usually undertaken using the path analysis of the direct relationship between destination food image and tourists' intention to consume local food (Chi et al., 2013; Karim & Chi, 2010; Lai et al., 2020). For example, it is found that tourists' consumption intention of local cuisine can be driven by a favorable cognitive image of destination food (Seo et al., 2017). However, investigating the direct relationship between cognitive food image and tourists' intention to consume local food is not enough to explain tourists' decision making associated with consuming destination food. It is plausible that mediating and moderating variables are involved in the food image-intention relationship, and they play indirect roles in the relationship. Despite their importance, mediation and moderated mediation analyses are rarely used in destination food studies to investigate desire, gender and perceived difficulty in relation to cognitive image of destination food.

To bridge this gap, the stimulus-organism-response (SOR) framework by Mehrabian and Russell (1974) is employed to explore factors involved in the transmission process associated with food image and intention. According to the framework, an organism

can be a mediator of the relationship between stimulus and response (Mehrabian & Russell, 1974). The SOR framework has been widely used in psychology and marketing research to investigate the links between input (stimulus), process (organism) and output (response). Past tourism research has used the SOR framework to explain tourists' behavior in theme park (Chang et al., 2014), film destinations (Rajaguru, 2014) and food tourism destinations (Yasami et al., 2021). In this study, we examine how tourists' desire is formed (O) during their processing of the information associated with cognitive image of destination food (S), which consequently impacts on tourists' intention to try local food (R). We further extend our research to investigate how perceived difficulty of finding local food and gender interact with tourists' desire to try destination food.

In order to better explain tourists' intention to consume destination food, it is necessary to examine the role of tourists' desire to try destination food as a mediator. According to Perugini and Bagozzi (2001), desire plays an important role in understanding people's decision making and it is the motivational factor that drives one's intention. In addition, examining the moderating effect of tourists' perceived difficulty of finding destination food is critical because different levels of perceived difficulty can better explain the variation in tourists' intention to eat local food at the destination. Furthermore, investigating gender difference in local food consumption behavior can provide valuable insight for destination marketers in terms of segmentation and promotion strategy for local food (D. Y. Kim et al., 2007). Several studies have found that gender is an important socio-demographic factor impacting food preference, food choice and food consumption behavior (Y. G. Kim et al., 2009; Mak et al., 2012).

As Macau is a designated UNESCO Creative City of Gastronomy, the government has put a lot of effort into attracting Chinese tourists and to get them interested in tasting Macanese food (Jackson, 2020; Wan & Choi, 2022). Local food like Macanese cuisine is now a prominent element of Macau destination marketing in China. To promote local food consumption effectively, it is imperative to investigate Macanese cuisine perceptions by Chinese tourists. Macanese food image is used in our research and our study subjects are Mainland Chinese who have visited Macau whom we believe are familiar with Macanese cuisine. The responses based on their perception of the Macanese food from various visual attributes are optimal. We also take a closer look at how desire, gender and perceived difficulty to find Macanese food interact with food image perception and affect tourists' intention to try Macanese cuisine using the SOR framework.

In our study, we propose to use the SOR framework as the underpinning theoretical model. Using desire as mediator, and perceived difficulty and gender as moderators, the objectives of this study are to examine how cognitive image of destination food stimulates tourists' intention to try local food. Firstly, it will investigate the direct effect of cognitive image of Macanese food on intention. Secondly, the direct impact of cognitive image of Macanese food on desire will be examined. Thirdly, how tourists' intention to eat Macanese food can be driven by their desire to try Macanese food will be investigated. Fourthly, the mediating effect of desire on cognitive image-intention relationship will be examined. Fifthly, this study will discuss how perceived difficulty moderates the relationship between desire and intention. Lastly, it will investigate the moderating role of gender on cognitive image-desire relationship.

## 2. Literature review and hypotheses development

### 2.1 Stimulus-organism-response (SOR) theory

Based on the SOR theory, human behaviors can be generally categorized into two forms, namely approach and avoidance behaviors (Mehrabian & Russell, 1974). Approach behaviors correspond to individual's positive reaction to external stimuli in the environment, such as intention to interact with others in the environment. Avoidance behaviors are those that are opposite to approach behaviors (Vieira, 2013). Mehrabian and Russell (1974) propose that stimuli (S) generally include elements in the physical environment, which can lead to individual's emotional response (O) to such stimuli. Individual's behavioral response (R) which includes approach and avoidance behaviors, is activated by his/her emotion associated with the stimuli. Past research has validated the applicability of the framework in studies of consumer behavior, such as impulsive buying behaviors (C. C. Chen & Yao, 2018), servicescape (Jang & Namkung, 2009) and retail store image (Tahng & Tan, 2003). However, the application of the SOR framework is rarely seen in destination food research (Yasami et al., 2021).

### 2.2 Macanese food culture

Macau is located in Southeastern China and is a former colonial city of Portugal. Since 1999, its sovereignty has been transferred back to China. Macanese food is a hybrid cuisine that has a unique combination of ingredients and methods of food preparation adapted from Chinese, Portuguese and other Southeast Asian styles of cooking (Augustin-Jean, 2004; Wong et al., 2014). A variety of culinary arts are embedded in the multi-cultural origin of Macau, and Macanese cuisine is one of the representative featured local tourism products that appeals to tourists worldwide (Travel Trade Gazette UK & Ireland, 2010). The uniqueness of Macanese food culture has further contributed to the designation of Macau as a UNESCO Creative City of Gastronomy in 2017 (Wan & Choi, 2022); one of three cities in China to be awarded this prestigious title.

Despite its culinary cultural heritage, research on Macanese food has been limited (Wan & Choi, 2022). As tourists' perception of destination food can have great impact on their overall experience in the destination and intention to consume local food (Seo et al., 2017), investigating Macanese food from the tourist perspective is critical. In the study by Kong et al. (2015), Chinese and Hong Kong tourists who make up more than 85% of total tourists to Macau, are asked to specify the notable images of Macau that are perceived as important to them. Macanese cuisine is scored highly in the survey and many Chinese respondents express that tasting Macanese cuisine is of great interest to them. Zhang and Hitchcock (2017) point out that a significant percentage of female visitors to Macau are interested in shopping, healthcare and tasting local food, but not necessarily gambling. Additionally, investigating the perceived image of Macanese cuisine can help tourists to understand the Macanese food culture, which is essential to the overall satisfaction of their trip experience in Macau (Wan & Choi, 2022). Therefore, in the current study, Macanese cuisine is chosen as one of the unique and representative local foods in Macau.

### **2.3 Cognitive image of destination food as an antecedent of tourists' intention to eat local food**

Local cuisine in a destination is a location-specific factor which contributes to the formation of tourists' perception of the destination and can be considered an asset that helps the destination achieve competitive advantage in the global market. Thus, according to Okumus and Cetin (2018), research on destination marketing should consider the role of destination food image in promoting the place. Björk and Kauppinen-Räsänen (2016) also support that local food is one of the destination attractions that can influence potential tourists' destination choice. They propose that authentic food experience in a destination can contribute to tourists' satisfaction after they visit the place, which in turn affects tourists' formation of a favorable destination food image.

According to Lai et al. (2020), cognitive image of destination food is defined as a set of intangible attributes of local food which can affect individual's perception of local food and represent the sum of his/her knowledge and understanding of local food. Cognitive image of destination food captures food attributes (e.g., perceived quality, attractiveness, safety and healthiness of the food) and expresses the culinary culture of the destination (Mak et al., 2012; Seo et al., 2017). Lee et al. (2007) define intention as one's anticipation of performing a behavior in the future.

Previous studies support that destination food image is a multidimensional construct which includes the cognitive and affective components (Yasami et al., 2021). In the destination food image research, Seo et al. (2017) find that the cognitive image of Korean food is a better antecedent than affective image to predict travelers' intention to eat Korean food. Lai et al. (2020) also contend that cognitive food image has a stronger effect on tourists' intention to visit the destination than affective food image. In this study, cognitive image of Macanese food will be considered as an external factor that stimulates tourists' intention to eat Macanese cuisine.

Since many countries realize that local food is a significant part of branding and promoting the destination (Okumus & Cetin, 2018), research of destination food image has received growing interest. Destination food image studies have been conducted from the host and tourists' perspective. Previous research investigating the relationship between food image and intention is generally conducted from tourists' perspective (Lai et al., 2020). Examining the effect of destination food image on tourists' behavioral response has been vital in tourism marketing research, as the former provides insight for implementing effective destination marketing strategies (Yasami et al., 2021). Previous studies support that destination food image is an important factor that affects tourists' intention to consume destination food (Seo et al., 2017), intention to visit the destination for food tourism (Choe & Kim, 2018) and intention to recommend the place to others (Tsai & Wang, 2017). As a positive image of the destination can increase people's travel and revisiting intention (Qu et al., 2011), a favorable image of the destination food can enhance tourists' intention to consume local cuisine. Thus, the first hypothesis for the study is proposed as:

**H1.** Cognitive image of Macanese food (CI) has a positive effect on tourists' intention to eat Macanese food (TI).

## ***2.4 Cognitive image of destination food as an antecedent of tourists' desire to try local cuisine***

Perugini and Bagozzi (2004, p. 71) define desire as 'a state of mind whereby an agent has a personal motivation to perform an action or to achieve a goal'. Schroeder (2020) states that an essential feature of desire is that it is the internal factor that disposes one to the action of a certain behavior. This study argues that perceived image of Macanese food as a stimulus can catch tourists' visual attention. In the brain science research, Spence (2015) shows that sensory attributes of food can affect people's perceived taste, and a good perceived taste is necessary to generate people's desire to try food presented in images. Sensory attributes of food image can affect one's emotional reactions. Our brain will form cognition when it processes sensory signals such as color and shape of the food, and the sense of desire will be activated if the sensory signals are positive.

In the tourism marketing research, tourists' desire to perform a behavior has been incorporated into different models to reveal tourists' decision making and behavioral response. Han et al. (2014) propose that people's desire to perform a certain behavior can be affected by a set of evaluative appraisals associated with the accumulation of positive cognitive and affective sources. They argue that desire is the direct outcome or response of cognitive factors such as one's perceived image of a tourism product. They point out that players' perceived image of virtual golf can affect their desire to participate in such leisure activity. Hudson et al. (2011) contend that consumer's perception of the image of a product/service can affect his/her desire to consume the product/service. The study on cruise tourism by Han et al. (2016) finds that if tourists' perceived image of a cruise is environmentally friendly, their desire to travel with this cruise in the future will be strong. Hwang and Choe (2019) propose that the positive image of the drone food delivery service can affect people's desire to use the service. In sum, the relationship between image of a product and desire to use the product has been documented in diverse context. However, examining the effect of desire in the destination food image research is rare. Investigating the role of desire is important in the destination food image research since it reveals tourists' intention to try local food and provides insight into the projection strategy of a desirable food image. The second hypothesis is proposed as the following.

**H2.** Cognitive image of Macanese food (CI) has a positive effect on tourists' desire (TD) to try Macanese food.

## ***2.5 Tourists' desire to try destination food as an antecedent of tourists' intention to eat local food***

In earlier psychology research, the study by Stasson and Fishbein (1990) points out several shortcomings of the Theory of Planned Behavior (TPB) proposed by Ajzen (1991). They contend that the concept of desire is mixed up with that of intention. The TPB argues that attitude has direct impact on intention. This assumes that desire is the same as intention conceptually. However, Stasson and Fishbein (1990) argue that the effect of desire should be tested separately from intention. Perugini and Bagozzi (2004) emphasize the importance of distinguishing desire and intention conceptually and



contend that desire is a form of motivational commitment which directly leads to intention. Davis (1986, p. 74) argument that 'someone intends to do something only if he is motivated to do it' aptly supports the motivational input of desire as likely to affect one's intention. In tourism research, the study by Han et al. (2014) supports that people's desire to try the virtual golf can enhance their intention to be involved in such activity. Song et al. (2012) argue that tourists' intention to revisit the mud festival is directly affected by their desire to participate in such an event. Therefore, the third hypothesis of this study is proposed as:

**H3.** Tourists' desire to try Macanese food (TD) has a positive effect on tourists' intention to eat Macanese food (TI).

### ***2.6 Mediating effect of desire on the relationship between cognitive image of destination food and intention to eat local food***

In the previous destination food literature, several studies (e.g., Choe & Kim, 2018; Karim & Chi, 2010; Tsai & Wang, 2017) only focus on investigating the direct effect of destination food image on behavioral intention, and the concepts of mediation and moderation remain understudied. Preacher et al. (2007) define mediation as a process in which the effect of the independent variable (IV) on the dependent variable (DV) is transmitted by a third variable which is called the mediator.

Tourism researchers have espoused several social psychology theories in their investigation of factors influencing behavioral intentions (Song et al., 2012). Bagozzi (1992) argues that one important variable that is omitted in the TPB is desire. The model of goal-directed behavior (MGB) proposed by Perugini and Bagozzi (2001) further shows that desire is the motivational factor that impact people's behavioral intention. The model illustrates that individual attitude affects intention through desire, and thus supporting the mediating role of desire.

Although the distinction between desire and intention has not been frequently tested empirically in the tourism research, recently a few studies have examined the indirect effect of desire on consumers' tourists' behavioral intention (e.g., Hwang & Choe, 2019). Yasami et al. (2021) employ the SOR framework to investigate tourists' consumption of destination food and the behavioral process associated with food image. They argue that external stimuli (S) generally include the attributes of offerings (such as local food) that tourists encounter in the destination. The organism (O) component generally entails tourists' satisfaction on local food. Tourists' behavioral response (R) expresses their inclination to performing or avoiding a certain behavior, which is activated after they process the information related to food stimuli. Yasami et al. (2021) contend that the organism component is the mediator of the stimulus-response relationship. Han et al., (2017) support the mediating effect of desire between tourists' satisfaction of bike traveling experience and their loyalty of bike travel. In the destination image research, Song et al. (2012) find that factors such as tourists' attitude toward attending the festival can indirectly influenced their intention to visit through desire. The study by Hwang and Choe (2019) includes desire as the mediating variable channeling the effects of several constructs such as the image of the drone food delivery service on intention to use the



service. Based on the SOR framework, this study investigates the mediating effect of the emotional factor, namely tourists' desire to try Macanese cuisine, on the relationship between external stimulus (i.e. Macanese food image) and behavioral response (i.e. tourists' intention to consume Macanese cuisine).

H4. Tourists' desire to try Macanese food (TD) mediates the relationship between cognitive image of Macanese food (CI) and tourists' intention to eat Macanese food (TI).

### ***2.7 The moderated mediation effect of perceived difficulty on the relationship between tourists' desire to try local food and intention to eat local cuisine***

Aiken and West (1991) state that in moderation, the direct effect of the IV on the DV is dependent on the level of a third variable (i.e. the moderator) and such direct effect is significantly different for high and low level/value of the moderator. In some cases, the mediation effect can vary across different levels/values of a moderator variable and groups of individuals such as female and male groups. Specifically, the strength of the mediating effect is linearly dependent upon a moderator and such conditional mediating effect is called moderated mediation (Preacher et al., 2007).

Based on the theory of planned behavior (TPB), Ajzen (2002) argues that one's behavioral intention is dependent on his/her confidence on performing a certain behavior successfully. Perugini and Bagozzi (2001) define perceived difficulty as the degree of one's perception on the difficulty of performing a certain behavior. According to previous studies on perceived difficulty, if one thinks that the actual performance of the given behavior is difficult, his/her intention to perform the behavior may be weakened (Ajzen, 1991; Wallace et al., 2005). This is because perceived difficulty of performing a behavior is negatively associated with the intention activation in our mind. If one perceives that the behavioral intention is difficult to be activated, the actual behavior may be forgotten or reprioritized (Prestwich et al., 2008). The causes of one's perceived difficulty of performing a behavior are perceived hindrances which may include limited time, skills, money, and other environmental factors (Ajzen, 2002). In the context of destination food research, Hsu (2014) points out that tourists who cannot speak Chinese may think that finding traditional Taiwanese cuisine is difficult for them because of language barriers. In this case, tourists' intention to consume Taiwanese food would be weakened. Additionally, previous studies have investigated how perceived difficulty affects one's intention and the attitude-behavior relationship. For example, in Chen (2007)'s study on organic food availability and food choice, perceived difficulty of finding organic food can affect people's buying intention. Conversely, if organic food is prominently displayed in grocery stores and supermarkets, customers will be willing to buy it. Based on a survey of 2489 U.S. citizens, Martinez and Lewis (2016) find that citizens' perceive difficulty of performing the health control behavior (e.g., dieting) can moderate the attitude-intention relationship.

We argue that psychological factor (i.e. tourists' perceived difficulty of finding local food) can interact with tourists' desire to try destination food during the formation of tourists' emotional state. We frame the analysis in terms of moderated mediation phenomenon by linking the indirect effect of cognitive image of destination food on

tourists' intention to eat local food through tourists' desire to try local food with perceived difficulty as the moderator. Thus, we test the moderated mediation model in the following hypothesis:

**H5.** Tourists' perceived difficulty of finding Macanese food (PD) moderates the indirect effect of cognitive image of destination food (CI) on tourists' intention to eat local food (TI) through tourists' desire to try local food (TD).

### ***2.8 The moderated mediation effect of gender on the relationship between cognitive image of local food and tourists' desire to try local food***

In the social science research, Bem (1981) contends that gender is not simply a biological factor and it should be considered a psychological construct to explain one's decision making process. Venkatesh and Morris (2000) suggest that the cognition of social environment between males and females is different, and gender is considered a moderating variable. Although gender-based difference in terms of attitude toward food, food preference and food choice have been investigated in the social science research, very few studies examine the effect of gender on the different level of desire to try food presented in images.

In the brain science research, scholars have found gender difference in desire to try food presented in visual images. Wang et al. (2009) argue that under the same food stimuli, the brain regions (e.g., the amygdala, insula and hippocampus) which control emotions such as desire, are more active in females than males. Similar findings are also reported by Uher et al. (2006), stating that the brain regions which control visual and taste sensation are more active in women when they see the same visual food stimuli. Frank et al. (2010) further confirm that compared to men, women show less control of desire to eat high-caloric food presented in visual images. These findings seem to suggest that gender difference is displayed in the level of desire when food images are presented. The latter is rarely investigated in destination food image tourism research. We argue that demographic factor (i.e. gender) can have interaction effect on tourists' desire to try local food which is activated by the external stimulus (i.e. cognitive image of destination food). By extending the mediation model, we can test if the indirect effect of cognitive image of destination food on tourists' intention to eat local food through desire is moderated by gender in the following hypothesis:

**H6.** Gender (GD) moderates the indirect effect of cognitive image of destination food (CI) on tourists' intention to eat local food (TI) through tourists' desire to try local food (TD).

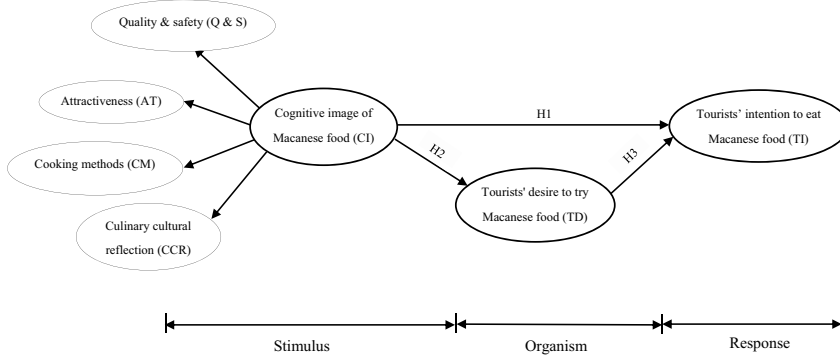
In keeping with the previous literature, the definitions, measures and characteristics of the constructs used in this study are summarized in Table 1. We incorporate the SOR framework in the conceptual models of our study. Figure 1 demonstrates the mediation and moderated mediation path models of this study. Part A shows the direct paths of cognitive image-intention, cognitive image-desire and desire-intention and the



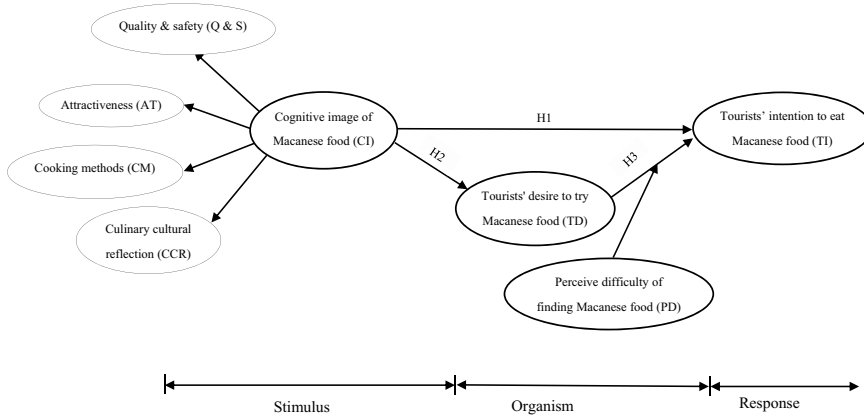
**Table 1.** Definition, measure and characteristic of the constructs based on previous literature.

Constructs	Definitions	Measures	Characteristics
Cognitive image of destination food	Individual's impression of and the sum of their knowledge and understanding of tangible attributes of the product (Lai et al., 2020).	Food sensory attributes such as perceived quality, attractiveness, promotion of health, cooking method and reflection on culinary culture (Seo & Yun, 2015; Renko et al., 2014).	An external factor that correspond to one's cognition and impression on the food product (Seo et al., 2017).
Desire	"A state of mind whereby an agent has a personal motivation to perform an action or to achieve a goal" (Perugini & Bagozzi, 2004, p. 71).	For example, it can be measured by an item worded as "my desire to ... is strong" using a Likert type scale (Seo et al., 2017).	An internal factor that disposes one to the action of a certain behavior (Schroeder, 2020).
Perceived difficulty	The degree of one's perception on the difficulty of performing a certain behavior (Perugini & Bagozzi, 2001).	For example, it can be measured by an item worded as "for me, to ... would be difficult" by a Likert type scale (Chen, 2007).	An internal factor that corresponds to the psychological impediment of performing a certain behavior (Perugini & Bagozzi, 2001).
Gender	A socially constructed term that generally refers to bodily/psychological aspects of humans (Lindqvist et al., 2021).	Collect participants' responses on gender using a dichotomous question and code male/female respondents with 0/1 in data analysis (Lindqvist et al., 2021).	A psychological factor that corresponds to people's performance of norm-related behavior (Lindqvist et al., 2021).
Intention	One's anticipation of performing a desirable behavior in the future (Lee et al., 2007).	For example, it can be measured by an item worded as "I intend to ... " using a 7-point scale anchored by strongly disagree/strongly agree (Seo et al., 2017).	An outcome that corresponds to one's inclination and planning of performing an actual behavior (Perugini & Bagozzi, 2004).

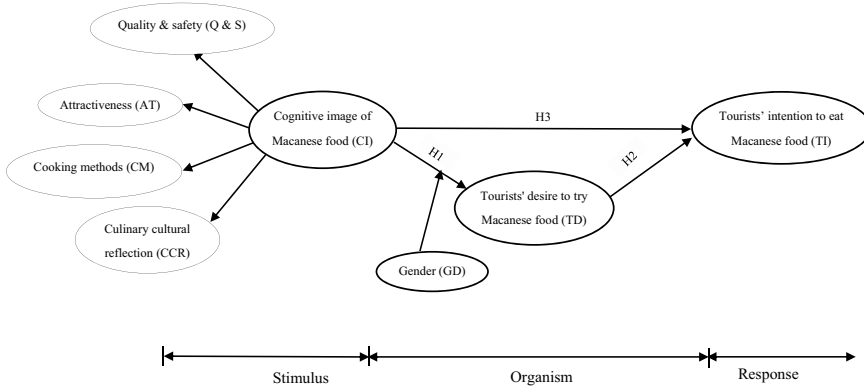
a. Mediation of tourists' desire to try Macanese food (H4)



b. Moderated mediation of perceive difficulty of finding Macanese food (H5)



c. Moderated mediation of gender (H6)



**Figure 1.** The conceptual models. (a) Mediation of tourists' desire to try Macanese food (H4). (b) Moderated mediation of perceived difficulty of finding Macanese food (H5). (c) Moderated mediation of gender (H6). Note: Quality & safety (Q & S), attractiveness (AT), cooking methods (CM), culinary cultural reflection (CCR), gender (GD), desire (TD), perceived difficulty (PD) and intention (TI) are first order constructs measured by multiple items in the survey. Cognitive image of Macanese food (CI) are second order construct measured by 4 first order constructs (i.e. quality & safety, attractiveness, cooking methods and culinary cultural reflection). Part A demonstrates the mediation model which uses desire as the mediator. Part B illustrates the moderated mediation analysis which uses perceived difficulty as the moderator of the desire to intention path. Part C depicts gender as the moderator of the cognitive image to desire path.

mediating effect of desire on the cognitive image-intention path. Part B illustrates that the desire-intention path is moderated by perceived difficulty. Part C depicts that the cognitive image-desire path is moderated by gender.

### 3. Methodology

#### 3.1. Measures

The questionnaire for the research was developed based on an in-depth review of relevant studies. Pictures of Macanese cuisine taken from the Macao Government Tourism Office website, are included in the survey for the respondents to answer questions in the various sections on Macanese food. Neuroscientists have reported that our brains have amazing ability to store and encode pictures, capturing the subject and specific visual qualities (Glaser, 2016). Thus, including pictures of Macanese cuisine in the survey can help mainland Chinese tourists to recall the experience of tasting Macanese food during their visit.

The indicators for the measurement scales of each construct were adapted from various studies as shown in Table 2. Cognitive image of Macanese cuisine, a higher-order multi-dimensional construct, was measured by 4 lower-layer constructs, namely quality and safety, attractiveness, cooking method and culinary culture reflection. The number of items in each construct ranged from 2 to 7. All indicators were measured by seven-point Likert-type scale, ranging from ‘strongly disagree’ (1) to ‘strongly agree’ (7).

A Chinese questionnaire was firstly developed. Then, back translation procedures were conducted. The English scales were translated into Chinese and the refined scales in Chinese were then checked by the first author. A third person who is professional in both Chinese and English was involved in the back translation, and translated the Chinese version of scales back into English. The first author checked the English version and confirmed the scales were the same meanings as the original scales. As this study aims to examine mainland Chinese tourists’ perception of Macanese cuisine, the questionnaire incorporated response scales of question-statements that start with ‘I think ...’. Before administering the questionnaire, a pilot test was carried out among 100 mainland Chinese tourists in Macau to verify that the wordings and the meaning of the questionnaire were well understood and did not yield obvious bias effects.

**Table 2.** Measures of constructs in this study.

Constructs	Measurement scales
Tourists’ intention to eat Macanese cuisine	3 items adapted from Seo et al. (2017)
Tourists’ desire to try local food	3 items adapted from Hwang and Choe (2019)
Tourists’ perceived difficulty of finding Macanese cuisine	2 items adapted from Chen (2007)
Gender	Ask respondents to specify their gender
Cognitive image of destination food: measured by 4 lower-layer constructs (quality & safety, attractiveness, cooking method and culinary culture reflection)	Scales of quality & safety (7 items), attractiveness (6 items) and cooking method (3 items) of Macanese cuisine are adapted from Seo et al. (2017). Scales of the fourth lower layer construct, culinary culture reflection (3 items) on Macanese cuisine, are adapted from Seo and Yun (2015) and Renko et al. (2014)

### **3.2. Data collection**

According to the Statistics and Census Service (2019), more than 70% of tourists to Macau are from mainland China and mainland tourists' expenditure on food and beverage has increased steadily since 2015. Previous studies suggest that it is important to investigate tourists who have been to the destination in order to examine the effect of destination food image (e.g., Choe & Kim, 2018). Therefore, a screening condition is used to select mainland Chinese citizens who have visited Macau as qualified respondents for the current study.

Based on the destination image literature (C. F. Chen & Phou, 2013), this study employs the convenience sampling method to collect data. We paid Wenjuanxing or WJX in short, a commercial online survey service provider in China ([https:// www.wjx.cn](https://www.wjx.cn)), to collect data for this study between November and December 2019. WJX collected 460 questionnaires, of which 449 were usable for data analysis and 11 were excluded since the corresponding respondents had not visited Macau. According to Hair et al. (2016), this sample size meets the requirement of 5% probability of Type I error in the context of Partial Least Square approach of Structural Equation Modeling (PLS-SEM).

### **3.3. Data analysis**

Unlike the covariance-based SEM (CB-SEM), PLS-SEM is a 'causal-predictive approach to SEM' which estimates the parameters by maximizing the explained variance of the indicators (Hair et al., 2019, p. 3). Specifically, the PLS-SEM estimates the parameters by the linear combination of the indicator variables and measures the target construct variables by the variance extracted from the indicators (Ali et al., 2018). Normal sampling distributional assumption is not a requirement in PLS-SEM; and bootstrapping is used to produce 5000 resamples drawn randomly with replacements from the original sample data (Hair et al., 2016). Hair et al. (2011) recommend choosing PLS-SEM if the researchers aim to predict key target constructs or define key driver constructs in the conceptual model. Since our study focuses on multiple predictors and criterion variables, we want to use PLS-SEM to test mediation and moderation relationships which have implications for developing stronger theoretical argument in destination food image research. This study uses SmartPLS 3.0 for the direct and indirect path analyses.

## **4. Results**

### **4.1. Profile of respondents**

Table 3 shows the demographic profile of the respondents. Among the 449 respondents, more than 77% are from the top 7 Chinese tourist source cities to Macau. Female (male) respondents account for 58.8% (41.2%) of total respondents. More than 60% of the respondents are young tourists (aged between 18 and 30) and around 62% hold a bachelor's degree or above.

**Table 3.** Demographic profile of respondents.

Items		Percentage
Places of origin (provinces)	Guangdong	47.15%
	Hunan	4.62%
	Fujian	4.21%
	Hubei	3.21%
	Beijing	4.47%
	Shanghai	10.32%
	Others	26.02%
	Age	Under 18
18–25		33.21%
26–30		30.15%
31–40		17.57%
41–50		7.84%
51–60		4.09%
61+		5.34%
Gender	Male	41.20%
	Female	58.80%
Education	Junior high school	3.09%
	High school graduate, diploma or the equivalent	8.21%
	College degree	22.69%
	Bachelor's degree	52.79%
	Master's degree	12.08%
	Doctoral degree	1.13%
	Manager/ Professional/ Executive/ Administrator	26.84%
	Self-employed	3.45%
	Blue Collar- skilled worker	21.99%
	Blue Collar- unskilled worker	11.80%
	Retired	7.38%
	Homemaker	1.61%
	Student	19.11%
Others	7.83%	
Income	No income so far	17.99%
	Below 2000 RMB or 2222 HKD	4.88%
	2001–3000 RMB or 2223–3333 HKD	5.29%
	3001–5000 RMB or 3334–5555 HKD	14.20%
	5001–8000 RMB or 5556–8888 HKD	33.64%
	8001–15,000 RMB or 8889–16,666 HKD	18.94%
	More than 15,001 RMB or 16,667 HKD	5.06%

## 4.2. Measurement models

In PLS-SEM, the measurement models are assessed first and separately from the structural models. The confirmatory factor analysis (CFA) is conducted to evaluate the reliability and validity of the measurement model. Prior to the CFA, the Harman's single factor test is used to examine if there is a common method bias in this study (Podsakoff et al., 2003). Using SPSS, the factor analysis of all items (without rotation) generates more than one factor (i.e. 3 factors). The first factor accounts for less than 50% of total variance (i.e. 47.62%). Thus, no common method bias is detected in the research. This study uses a reflective-reflective hierarchical component approach to measure cognitive image of Macau food with 4 lower-layer constructs, namely attractiveness (AT), cooking method (CM), quality & safety (Q&S) and culinary culture reflection (CCR).

The CFA begins with the assessment of indicator loadings and their significance level are assessed. Table 4 shows that the loadings of all indicators exceed the threshold of 0.7 (Hair et al., 2016) and they are all statistically significant. We notice that one indicator loading (see item PD2 in Table 4) of perceived difficulty is low. Using the 5000 resamples generated by SmartPLS, we further assess the t-value of this indicator loading and find



**Table 4.** Parameter estimates of the measurement model (First-order).

Constructs	Items	Loadings	t-statistics	AVE	CR	
Quality & Safety (QS)	QS 1	I think eating Macanese cuisine is safe.	0.77	31.22	0.62	0.92
	QS 2	I think Macanese cuisine is hygienic.	0.81	37.02		
	QS 3	I think Macanese cuisine is natural.	0.76	28.25		
	QS 4	I think Macanese cuisine is easily digestible.	0.78	34.26		
	QS 5	I think Macanese cuisine is reliable.	0.83	37.91		
	QS 6	I think Macanese cuisine is neat.	0.83	36.61		
	QS 7	I think Macanese cuisine is made by fresh ingredients.	0.76	29.12		
Attractiveness (AT)	AT 1	I believe Macanese cuisine tastes good.	0.80	28.31	0.66	0.92
	AT 2	I believe Macanese cuisine smells good.	0.83	37.31		
	AT 3	I think Macanese cuisine is attractive.	0.83	36.24		
	AT 4	I think Macanese cuisine is appealing.	0.82	36.28		
	AT 5	I think Macanese cuisine is popular.	0.82	34.56		
	AT 6	I think Macanese cuisine is easy to eat.	0.78	33.89		
Cooking Methods (CM)	CM 1	I think Macanese cuisine takes long time to prepare.	0.81	32.94	0.70	0.87
	CM 2	I think Macanese cuisine uses different cooking methods.	0.85	55.45		
	CM 3	I think Macanese cuisine uses scientific cooking methods.	0.85	52.55		
Culinary cultural Reflection (CCR)	CCR 1	I think eating Macanese cuisine is a way to understand Macau's local culture.	0.85	40.35	0.73	0.89
	CCR 2	I think Macanese cuisine reflects the blend of the culture of the East and the West.	0.87	44.86		
	CCR 3	I think Macanese cuisine helps me understand Macau's multi-cultural heritage.	0.84	48.13		
Desire (TD)	TD 1	I desire to try Macanese cuisine.	0.87	48.09	0.76	0.91
	TD 2	My desire to try Macanese cuisine is strong.	0.85	43.79		
	TD 3	I wish to try Macanese cuisine.	0.90	63.06		
Perceived difficulty (PD)	PD 1	Even if I want to try Macanese cuisine shown in pictures (or similar) in Macau, I do not think I would be able to find it.	0.97	44.35	0.54	0.66
	PD 2	I think finding the Macanese cuisine shown in the pictures (or similar) will take a lot of effort.	0.36	2.64		
Intention (TI)	TI 1	I would like to eat Macanese cuisine.	0.91	64.68	0.79	0.92
	TI 2	I intend to eat Macanese cuisine.	0.86	49.23		
	TI 3	I am willing to eat Macanese cuisine.	0.89	53.13		

that the loading of this item is significant ( $t$ -value = 2.64,  $p < 0.01$ ). Therefore, we include this item for data analysis in our study. As shown in Table 4, all constructs have values of average variance extracted (AVE) greater than 0.4 and construct reliability (CR) greater than 0.6, which are acceptable for SEM (Fornell & Larcker, 1981). Therefore, the measurement model passes the assessment of CR and AVE.

The discriminant validity of the first-order reflective model is checked. Table 5 shows that the square roots of AVE (given in bold) are greater than the bivariate correlations of the constructs. Hence, the discriminant validity is supported, which shows that all the constructs are mutually exclusive (Hair et al., 2016). Therefore, the measurement model passes the validity test. Table 5 also shows that the bivariate correlations of all paired lower-layer constructs are above 0.5, which indicates that the use of reflective-reflective hierarchical component approach is appropriate (Hair et al., 2018).

As for the second-order reflective model, several parameters including regression weights and the variance inflation factors (VIFs) of constructs are estimated. As shown in Table 6, all the regression weights are greater than 0.1, which is acceptable (Hair et al., 2016). Using 5000 resamples, the  $t$ -values of all regression weights are greater than 1.96, which indicate that at the 0.05 significance level, all the second-order constructs are

**Table 5.** AVEs and bivariate correlations of constructs.

	AT	CM	CCR	QS	TD	PD	TI
Attractiveness (AT)	<b>0.81</b>						
Cooking Method (CM)	0.59	<b>0.84</b>					
Culinary Cultural Reflection (CCR)	0.71	0.56	<b>0.85</b>				
Quality & Safety (QS)	0.80	0.65	0.69	<b>0.81</b>			
Desire (TD)	0.76	0.47	0.65	0.56	<b>0.87</b>		
Perceived Difficulty (PD)	0.46	0.44	0.44	0.47	0.42	<b>0.74</b>	
Intention (TI)	0.67	0.36	0.61	0.56	0.78	0.38	<b>0.89</b>

Note: The square roots of AVE of every construct are in bold. Other numbers are bivariate correlations of constructs

**Table 6.** Regression weights and VIF of the Second-order reflective model.

Second-order construct	First-order constructs	Regression weights	VIF
Cognitive image of Macanese food	Quality & Safety (QS)	0.94	2.17
	Attractiveness (AT)	0.93	2.15
	Cooking Methods (CM)	0.75	1.64
	Culinary Cultural Reflection (CCR)	0.83	1.79

significant. The VIF values which detect the collinearity of constructs are all less than the cutoff value of 5 for PLS-SEM (Hair et al., 2016). Therefore, the second-order reflective model passes the validity test.

### 4.3. Structural models

The predictive performance of the structural model should be assessed before conducting the hypothesis testing (Ali et al., 2018). The coefficient of determination  $R^2$  is used to assess the in-sample predictive power of the structural model (Hair et al., 2011). It is calculated by the squared correlations of the estimated value and actual value of the endogenous construct. According to Hair et al. (2011),  $R$ -square values of 0.25, 0.5 and 0.75 indicate weak, moderate and substantial level of in-sample predictive power, respectively. The  $R^2$  of 0.644 shows that TI (tourists' intention to eat Macanese cuisine) can be influenced by cognitive image of Macau food (CI) and desire (TD) with a moderately good explanatory power. Additionally, the Stone-Geisser index ( $Q^2$ ) is included to assess the predictive relevance of the model (Ali et al., 2018). The  $Q^2$  result of 0.472 for cross-validated redundancy shows a medium-large predictive relevance of the structural model (Hair et al., 2019). In this study, we use the standardized root mean square residual (SRMR) to assess the overall fit of the mediation and moderated mediation models. The SRMR is defined as the difference between the observed correlation and the model implied correlation matrix (Hu & Bentler, 1998). As suggested by Hu and Bentler (1998), a SRMR value less than 0.08 shows a good fit of the structural model.

## 4.4 Hypotheses testing

### 4.4.1 Mediation effect of TD

We used the bias-corrected bootstrapping technique (default) to test the hypotheses in this study. The standard errors and confidence intervals are empirically derived from the bootstrap resample data. Prior to testing the hypotheses, it is necessary to examine the

direct relationships between cognitive image (CI), tourist desire (TD) and intention (TI). We follow the steps prescribed in Baron and Kenny (1986), and assess the results of the estimated linear regression models for the direct effect of CI on TI, CI on TD and TD on TI as shown below (t-statistics in parentheses):

- (1)  $TI = 2.04 + 0.61CI$   
(14.98)
- (2)  $TD = 1.25 + 0.74CI$   
(22.89)
- (3)  $TI = 1.21 + 0.13CI + 0.63TD$   
(2.38)    (12.42)

The path coefficients in (1) and (2) are significant at the 5% level; hence, hypotheses 1 and 2 are supported. We make inference that the direct effects of CI on TI and CI on TD are significantly positive. Equation (3) shows TD is positively related to TI while the effect of CI is controlled; hence hypothesis 3 is supported. Furthermore, the estimated coefficient of CI is significantly smaller than that in (1). The indirect effect of CI on TI via TD is 0.46 and the 95% bias-corrected confidence interval (0.38, 0.55) does not include 0. This infers that the indirect effect is statistically significant and we can conclude that tourists' desire to try local cuisine mediates the relationship between cognitive image of destination food and tourists' intention to eat Macanese cuisine. The standardized root mean square residual (SRMR) which corresponds to the model fit index is 0.076 and it is lower than the cutoff value of 0.08 (Hu & Bentler, 1998). This shows that the observed sample correlation matrix fits well with the model implied correlation matrix. Therefore, hypothesis 4 is supported.

#### 4.4.2 Moderated mediation effect of PD

Following the procedures in Edwards and Lambert (2007), this study further assesses whether PD moderates the indirect effect of CI on TI through TD. Depending on the level of PD, the conditional indirect effect can be different. The moderated mediation is supported if the indirect effects at high and low level of PD (given by  $\pm 1$  standard deviation of the mean of PD) are statistically different. The standard deviation of the mean of PD is  $\pm 1.18$ . As shown in Table 7, at the high level (PD = 1.18), the conditional indirect effect is 0.41, which is positive and significant, with a 95% bias-corrected confidence interval given by (0.37, 0.58). At low level (PD = -1.18), the conditional indirect effect is 0.52 and the 95% confidence interval is (0.47, 0.69). The difference in the conditional indirect effect is -0.11 (95% bias-corrected confidence interval is -0.16 to -0.02). Figure 2 shows that the conditional indirect effect is stronger at low level of PD. The value of the SRMR is 0.071, which shows that the model is correctly specified. Therefore, hypothesis 5 is supported.

#### 4.4.3 Moderated mediation of GD

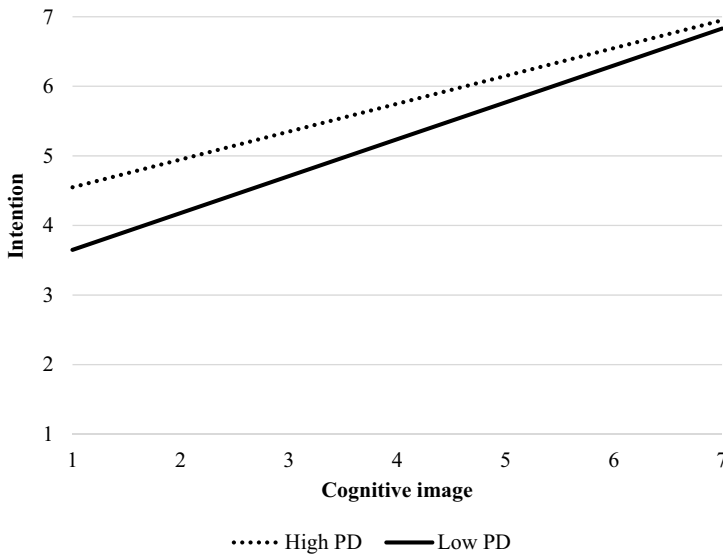
The moderated mediation of GD will be supported if the indirect effect of CI on TI through TD is significantly different between female and male groups. As shown in Table 7, the conditional indirect effect for females (value of GD is 1) is weaker than that of males. As to the female group, the conditional indirect effect is 0.49 and the 95% confidence interval is (0.42, 0.63). In respect to the male group, the conditional indirect effect is 0.57 and the 95% confidence interval is (0.45, 0.76). The value of the SRMR is



**Table 7.** Hypotheses testing results.

Hypothesis	Path	Unstandardized path coefficients	95% confidence interval	Decision
<b>Direct effects</b>				
H1	Cognitive image of destination food (CI) → tourists' intention to eat local food (TI)	0.61*** (0.04)	(0.55, 0.73)	Supported
H2	Cognitive image of destination food (CI) → tourists' desire to try local food (TD)	0.74*** (0.03)	(0.67, 0.80)	Supported
H3	Tourists' desire to try local food (TD) → tourists' intention to eat local food (TI)	0.63*** (0.05)	(0.51, 0.77)	Supported
<b>Indirect effect</b>				
H4	Cognitive image of destination food (CI) → tourists' desire to try local food (TD) → tourists' intention to eat local food (TI)	0.46*** (0.04)	(0.38, 0.55)	Supported
<b>Conditional indirect effects</b>				
H5	Moderated mediation by PD (CI → TD → TI at high and low level of PD)	0.41*** (0.06)	(0.37, 0.58)	Supported
	At high PD (+1 standard deviation of the mean of PD)	0.52*** (0.06)	(0.47, 0.69)	
	At low PD (-1 standard deviation of the mean of PD)	-0.11*** (0.04)	(-0.16, -0.02)	
	Difference of indirect effects		F-statistic = 196.92, p < 0.01	
H6	Moderated mediation by GD (CI → TD → TI for female and male group)	0.49*** (0.06)	(0.42, 0.63)	Not supported
	Female group (GD = 1)	0.57*** (0.07)	(0.45, 0.76)	
	Male group (GD = 0)	-0.08 (0.06)	(-0.20, 0.05)	
	Difference of indirect effects		F-statistic = 376.11, p < 0.01	

Note: \*\*\*p < 0.01, standard errors are presented in parentheses.



**Figure 2.** Conditional indirect effects for high and low PD. Note: PD standards for perceived difficulty of finding Macanese food

0.078 and the structural model misspecification is not found in this study. The conditional indirect effects are positive and significant for both groups, but their difference is not significant (a 95% confidence interval =  $-0.20, 0.05$ ). Thus, hypothesis 6 is not supported. While gender difference in desire is purported in the brain science research cited, the latter has not conducted any test of significance. Our result shows that the indirect effect of cognitive image on intention through desire is not moderated by gender, which suggests that the gender difference associated with the indirect effect is too small to be significant.

## 5. Discussion and implications

### 5.1 Theoretical implications

Diversifying tourism offerings of a destination has been a crucial task for destination management organizations (DMOs) around the world (Chi et al., 2013). Since local food is one of the most important elements that determine the destination's attractiveness, many DMOs endeavor to promote the place as culinary destination with an aim to induce tourism (Okumus & Cetin, 2018). However, the investigation of the relationship between destination food image, tourists' desire and intention to try destination food, needs more attention. In this study, we aim to use three conceptual models to examine how Macanese food image indirectly affects tourists' intention to consume Macanese cuisine. We quantify the indirect effects of Macanese food image on tourists' intention to eat Macanese cuisine through tourists' desire to try Macanese food by estimating the unconditional model (i.e. mediation effect) and the conditional models (i.e. moderated mediation effect).

From the theoretical perspective, this study contributes to the destination food image literature in several ways. First, although several studies in tourism research (e.g., Aydin et al., 2021; Seo et al., 2017) have empirically tested the relationship

between local food image and tourists' behavioral intention, the underlying mechanism of how such behavioral intention is activated remains understudied. By applying the SOR framework, this study makes an attempt to advance stronger theoretical underpinning in destination food research. Our study posits that the sensory attributes elicited by cognitive image of destination food are stimuli (S) which can affect tourists' processing of information about destination food. Tourists' emotions toward destination food such as tourists' desire to try local food are formed in the process (O), which consequently drives tourists' intention to consume destination food (R). The findings of this research suggest that tourists' desire to try Macanese food plays an important role as the mediator between cognitive image of Macanese food and tourists' intention to consume Macanese cuisine. This implies that cognitive image of destination food stimulates tourists' eating intention through their desire to try destination cuisine. We argue that the resulting four dimensions of cognitive image of Macanese food are external stimuli which create positive perceptions of Macanese cuisine in the minds of tourists. Such positive perceptions correspond to the enjoyable experience of tasting Macanese food, experience of authentic local food culture and desire to try Macanese cuisine. As a result, tourists' intention to consume Macanese cuisine is activated. Our study contributes to the destination food image research by identifying the causal chain of cognitive food image-desire-intention and the process by which tourists' intention to eat local food is indirectly stimulated by a favorable destination food image.

Second, evaluating the three interaction paths with the moderated mediation effect of perceived difficulty is also rare in the destination food image literature. Based on the SOR framework, this study argues that psychological factor such as tourists' perceived difficulty of finding local food can interact with the indirect effect of cognitive food image on tourists' intention to consume local food through tourists' desire to try destination food. In this regard, tourists' behavioral response (i.e. intention to consume destination food) activated by desire is dependent on the level of tourists' perceived difficulty of finding local food. Our study shows that tourists' perceived difficulty of finding Macanese cuisine moderates the indirect effect of cognitive image on intention through tourists' desire to try Macanese food. Such indirect effect is more salient at low level of tourists' perceived difficulty. In previous destination food image studies, the factor of perceived difficulty of finding local food has been neglected. The results of our study show that tourists' intention to consume Macanese cuisine triggered by cognitive image of Macanese food through desire, will be stronger if the Macanese food can be easily found.

Third, based on the SOR framework, we hypothesize that demographic factor such as gender might affect tourists' processing of external stimulus associated with food image. We argue that male and female tourists may form different perceptions of destination food during the processing of external stimulus, and thus gender may moderate the indirect effect of cognitive food image on intention through desire. Contrary to our hypothesis and some past literature in brain science (Frank et al., 2010; Wang et al., 2009), the results show that the indirect effect of cognitive food image on intention through tourists' desire is not moderated by gender. Therefore,

our study provides new insight that gender does not necessarily play a significant moderating role in the link between cognitive image of Macanese cuisine and tourists' desire to try Macanese food.

## **5.2. Practical implications**

In terms of practical implications, our study can inform national/regional/local DMOs and tourism industry stakeholders in destination promotion using local cuisines. Cognitive image of Macanese food as demonstrated in our study can stimulate tourists' desire and intention to eat Macanese cuisine. While many restaurants in the destination offer famous food dishes from various countries to accommodate tourists around the world, tasting of local food should be promoted prominently to tourists (Li et al., 2021). As tourists' perception of destination food is intangible, well presented images of such food can play an important role in creating the sense of authenticity to them (Seo et al., 2017). Research on food advertising argues that visual attributes are as important as the taste in terms of their impact on people's perception of the food product (Elder & Krishna, 2010). Therefore, the use of local food in print and digital advertising for destination promotion, ought to display authentic and attractive images of local cuisine. The use of images that show different characteristics of food (e.g., freshness, safety, reflection of local culinary culture) in the DMOs' website and government-run mobile apps is imperative to stimulate tourists' desire and intention to consume destination cuisine. It is recommended that DMOs' website should include the storyline about the evolvement of the local cuisine, to shape tourists' cognition of destination food. Additionally, DMOs can launch some themed photo contests and encourage tourists to send authentic pictures of destination food with narratives on their food tasting experience. The winning images selected can be posted in the DMOs' website to shape potential tourists' overall perception of destination food. Furthermore, DMOs can use the celebrity power of star chefs and invite them to do live cooking shows of local food. DMOs can also invite local food bloggers to post live shows of their experience in famous restaurants and hawker stalls in the social media platforms, so that tourists can gain insights into the culinary culture of the destination. From the perspective of Macanese food, the Macao Government Tourism Office should increase publicity efforts to feature Macanese food in its website. Information about what Macanese cuisine is and how it is evolved into a mixture of the East and the West should be available in the MGTO website to shape tourists' overall image of Macau local food.

Destination governments should develop food events with local food culture themes to enhance the image of local food; incentivize creative eateries, restaurant and hawker business activities to supply local food cuisines which can be potential attractions to tourists. Support from the government-industry partnership for local food culture is crucial for a destination to build up its identity which can influence the formation of cognitive image of destination food (Seo & Yun, 2015). In Macau, an international food festival is held every year and it is very popular among tourists. Apparently, it is difficult for tourists to find Macanese featured food that are appealing to them at the festival. More information and promotional activities on Macanese cuisine in the festival are imperative, since the latter represents Macau food culture and identity of the city. Setting up night market to promote local food consumption in Macau is also a potential drawback for both locals and tourists, like



in Taiwan and Thailand. The night market should include hawker stalls decorated in the traditional *cha chaan teng* (classic tea house)-style or Portuguese ceramic tiles design, selling Macanese cuisine. The ambience of the night market should include elements such as Cantonese Opera and Portuguese style live cooking show to create an authentic atmosphere and improve the overall image of Macanese cuisine. Recently, the Macau government has organized an event called ‘Macau week’ in several Chinese cities (i.e. Shanghai, Hangzhou and Nanjing) from March to June 2021. In the future, the government can organize similar Macau road shows in more cities in mainland China to promote Macau’s unique culinary culture and cuisine.

Although Macau is a small destination, Chinese tourists may have difficulty finding authentic Macanese cuisine. This is because many of the restaurants and hawker stalls offering authentic Macanese cuisine are not in close proximity to popular tourism sites. Many of the traditional restaurants are located in the residential heartlands and the old towns of Macau where few tourists visit. Therefore, easily accessible information of local food is important to engender tourists’ eating intention (Karim & Chi, 2010; Okumus & Cetin, 2018) and can lower tourists’ perceived difficulty of finding local food. As shown in the demographic profile, more than 60% of respondents are aged between 18 and 30. The study by Wan and Choi (2022) also supports that the younger generation is more likely to be food tourists to Macau since their primary or secondary purpose of visiting the place is for authentic food experience. Tourists, especially those who are young, are likely to search for information about local cuisine by different sources such as travel blogs and government tourism website prior to their visit (Karim & Chi, 2010; Wan & Choi, 2022). Therefore, local foodie accounts in famous social media platforms (e.g., WeChat) should be posted on the government tourism website to help tourists find local food (Yu & Sun, 2019). Additionally, food narratives in the mobile applications developed by the local government can be another information source of local food that can affect young tourists’ intention to consume local food during their visit (Choe et al., 2017). To reduce tourists’ effort into finding Macanese cuisine, destination travel agencies can offer guided food tours to famous Macanese restaurants and hawker stalls. Importantly, local government should set up more visitor center stations to provide information for the location of eateries serving authentic local cuisine. Some visitor centers, especially those in close proximity to popular tourism sites in Macau, can also set up booths offering free Macanese food tasting.

To date, the tourism industry is struggling and the recovery efforts are daunting because of the COVID-19 pandemic. Due to the restrictions on international travel, the destination government should exploit opportunities for domestic culinary tourism and consider new or better ways of managing the foodservice business. In the post-COVID-19 era, the government should work out a more stringent standard of food hygiene for restaurants and hawker stalls in order to reduce tourists’ perceived travel risk in the destination. In the government tourism website and government-run social media platforms, images and videos showing the clean environment, food hygiene and measures taken in social distancing at restaurants should be displayed. Restaurants can also consider innovative means of delivering food, such as using service robots for food delivery within the restaurants and drones for take-away food delivery to reduce interpersonal contact. Images or videos

showing such food delivery methods should also be posted on government-run social media platforms, which may address tourists' concern on food safety and improve the image of local food.

### **5.3. Study limitations and future research**

There are several limitations that might affect the generalizability of the findings of this study. First, this study only investigates the cognitive image of destination food in the context of Macau. A comparative study on Chinese and international tourists' perception of food image, and how it influences their desire and intention to consume local cuisine can be insightful. Future research can investigate tourists' perception gap of destination food before and after their visit. Second, in the screening question, we only ask respondents if they have visited Macau before but not the time of their visit. The perception of Macanese cuisine might be different among tourists who have visited Macau more recently or farther back in time. Third, one item (PD2) of the perceived difficulty of finding Macanese food construct has relatively low factor loading (0.36). However, this does not mean the measurement of the perceived difficulty construct is invalid, since the construct is not measured by a single item.

### **Note**

1. We have used destination food/cuisine and local food/cuisine interchangeably in the paper. In the context of our research, these terms are used with reference to Macanese food/cuisine.

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