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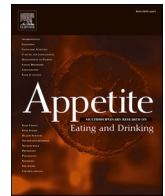
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# The cognitive development of food taste perception in a food tourism destination: A gastrophysics approach

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## ABSTRACT

This study aims to explore the nature and processes involved in the cognitive development of food tourist's taste perception and identify cognitive factors influencing their food taste experience in the context of a food tourism destination. Adopting a gastrophysics approach, this exploratory qualitative research analyses food taste perceptions of Chinese domestic tourists during their visit to the Hangzhou Cuisine Museum and its associated restaurants. The findings suggest that prior knowledge formation as a manifestation of cognitive signs relating to Hangzhou cuisine and interpretive cognitive information acquired at the museum exhibition, greatly affect the tourists' local food taste experiences: these comprise menu selection and appetitive responses in textual, visual and gustatory senses. This paper sheds light on important theoretical and practical implications for stakeholders concerning tourist experiences around food taste perception in food tourism destinations and attractions.

## 1. Introduction

The integral role that food plays in tourism has been well documented. Consequently, food tourism has emerged as a major research theme for tourism and associated disciplinary areas (Ellis et al., 2018; Everett, 2019; Henderson, 2009; Lee & Scott, 2015; Park et al., 2019; Yeoman et al., 2015). Previous studies predominantly examined the motivations (Hall & Sharples, 2003; Kim & Eves, 2012; Kim et al., 2009, 2010, 2013) and the factors influencing choice or consumption of local foods and beverages at destinations (Kim et al., 2009; Mak et al., 2012; Yen et al., 2018). However, from an experience perspective, food tourism research remains limited (Goolau et al., 2018; Tsai, 2016).

Food tourism can be examined from the tourist viewpoint of physical, physiological, or multi-sensory experiences of food and tourists' spatial and temporal involvement in wider food-related gastronomic activities. This approach is more concerned with what types of experiences are being generated (Bjork & Kauppinen-Raisanen, 2016; Che, 2006); whether they are 'peak', 'supporting' or 'peripheral' experiences (Quan & Wang, 2004), although Bjork and Kauppinen-Raisanen (2016) also posit that food experiences for purposeful food tourists are no longer ad-hoc and auxiliary. Purposeful food tourists are those travelling primarily for food taste-related experiences with a mix of intrinsic and extrinsic motivational values, and are therefore distinct from general

leisure tourists (Hall & Sharples, 2003; Kim et al., 2019; Su et al., 2020).

Existing research pays little attention to the multisensory nature of food consumption or taste experiences. This neglect to examine what influences and/or constitutes one's food taste perception as the focal point of extraordinary, authentic memorable experiences for food consumption whilst on holiday, has resulted in limited published research in this area. This is paradoxical, for the understanding of ever-changing contemporary traveller's behaviours and experiences is the precondition for relevant stakeholders such as destination marketers, hospitality businesses and policy makers, to effectively promote and provide a right composition of tourism destination products and tailored experiences to target markets.

In contrast, other disciplinary areas such as cognitive psychology and cognitive neuroscience have attempted to scientifically understand people's food taste or flavour perception. That includes taste or flavour changes influenced by gustatory, olfactory, visual, tactile, or aural cues in the experimental setting (Bramescio & Setser, 1990; Spence, 2011, 2014, 2017; Gallace et al., 2011; Okamoto et al., 2009; Sahakian et al., 1981; Spence & Shankar, 2010).

As such, multisensory experiences around food taste or flavour plays a crucial psychological and physiological role in the appraisal of food appetite and food taste perception, especially when it occurs outside one's own comfort zone such as home (Kim et al., 2019; Kivela & Crofts,

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2006). The embodied multisensory nature of food consumption and taste perception cannot be underestimated in the study of food tourism. Examinations of this nature are most scarce when applied to the food museum setting, despite the growing popularity of food-themed museums as a tourism attraction around the world. The Kiwi museum in New Zealand and the Kimchi museum in South Korea are prominent examples.

Acknowledging these ‘gaps’ forms a useful context and starting point for this research. Adopting a gastrophysics approach, this study aims to explore and examine the nature and processes that cognitive signs or factors shape and influence one’s local food taste perception in a food tourism attraction. Specifically, the research objectives include: (1) to identify cognitive factors shaping and influencing food tourist’s taste experiences in the context of a food museum complex and (2) to explore the nature and processes involved in the cognitive development of food tourists’ taste perception which are formed by touristic experiences with the museum exhibition hall and restaurants.

Coined by Charles Spence (2017, p.17), the term ‘gastrophysics’, merges ‘gastronomy’ with ‘psychophysics’, and is defined as “the scientific study of those factors that influence our multisensory experience while tasting food and drink”. It is anticipated that this interdisciplinary approach will deepen and diversify existing, limited approaches to food tourism research in general and the multisensory nature of food taste experiences in particular.

This study focuses on the Hangzhou Cuisine Museum in China. The museum complex, located in Jiangyangfan Eco Park near the Southern Song Dynasty Site of Hangzhou, attracts a range of tourist market segments including food tourists to its exhibition hall and dining restaurants. This unique food-themed museum is therefore considered appropriate for such an exploratory study setting, in order to better understand the nature and complexity of food tourist’s food taste perception.

## 2. Literature review

### 2.1. Food tourism and multi-sensorial experiences

Earlier food tourism studies primarily recognised the field as a “legitimate sphere of research in the context of economic development and destination marketing” (Everett, 2019, p. 5). Ellis et al.’s (2018, p. 250) work emphatically claims that “the field experienced a shift, that is, a ‘cultural turn’ from those early management-focused studies to more wholesome and exploratory discussions of food and culture”. This shift has created a dynamic emphasis on understanding the complex and multifaceted role of food in tourist experiences in food tourism destinations and attractions (Ellis et al., 2018; Everett, 2019).

This perspective views food as a social, cultural, material and symbolic signifier (Reddy & van Dam, 2020), and is an important “manifestation of defining oneself through tasting food (culture and identity) of the other” (Kim & Ellis, 2015, p. 154). Food tourism therefore embraces every given opportunity to experience other places and cultures through engaging with ‘new’, ‘exotic’ or ‘unfamiliar’ tastes and flavours of local food and becomes an identifier of otherness (Cohen & Avieli, 2004; Everett, 2016; Fox, 2003, 2007; Kim & Ellis, 2015; Kim & Iwashita, 2016; Park et al., 2019). As such, food is part of a physiological, psycho-sensorial, social and symbolic environment of a place (Bessière, 1998), and increasingly, is being treated as an allegorical artefact with connection to human intention and action beyond its most obvious contexts.

Food tourism can initiate insightful understandings of the complexity and inter-connectedness of diverse culinary artefacts, identities and experiences of practised places as tourism destinations (Everett, 2019). Within this context, food tourism experiences are opposed to a mere passive visual consumption from the lens of Urry’s tourist gaze (Urry, 1990). Rather, it is, perhaps one of the few extraordinary tourism experiences that invites the interplay of all human senses

deepening one’s embodied tourism experiences around food and foodways and thus forming one’s (local) food taste perception (du Rand & Heath, 2006; Goolaup et al., 2018).

Thus, Everett (2008) emphasised an urgent need for future studies to embrace the more multifaceted, embodied, and multi-sensory experiences of food tourism by adopting the concepts of performativity and embodiment. Embodied experience or embodiment became a theoretically solid discourse that highlights gustatory, olfactory, aural, and haptic senses. This significant theoretical shift in the critical and cultural axis led to the adoption of concepts such as cognitive and bodily engagement (Everett, 2019). Moreover, it is in line with cognitive psychology and the cognitive neuroscience fields that have studied multi-sensory food taste or flavour perception (Small & Prescott, 2005; Spence, 2011).

### 2.2. Gastrophysics and multi-sensory taste perception

A recent surge of academic and practical interest in multisensory flavour perception from cognitive psychology and cognitive neuroscience fields contributes significantly to our understanding of sensory taste and flavour evaluation. This includes taste and/or flavour changes influenced by gustatory, olfactory, visual, tactile, or aural cues (Gallace et al., 2011; Okamoto et al., 2009; Sahakian et al., 1981; Spence, 2011). It has been documented that differences or changes in salivary flow influence the perception of both the taste and texture of food (Bramasco & Setser, 1990).

From the 1960s onwards, research has validated that one’s salivary flow and taste perception can be modulated by various food-related factors: the smell or sight of a foodstuff (for example, Sahakian et al., 1981; Rogers & Hill, 1989; Spence, 2011); environmental factors such as ambient illumination (for example, Oberfeld et al., 2009); soundtracks like music or sound/noise (for example, Spence, 2014; Wang et al., 2015; Zampini & Spence, 2004), and cognitive factors including attention, mental imagery and labelling (for example, Gallace et al., 2011; Okamoto et al., 2009; Spence, 2011). As a case in point, the Fat Duck restaurant in Berkshire, UK, serves a seafood dish called “sound of the sea”. Those who select this dish are presented with a plate of seafood that is reminiscent of a beach, with an iPod (hidden in a seashell with the earphones poking out) that plays a “sound of the sea” soundtrack (Spence, 2017).

Similarly, the provision of amplified food crunching sounds enabled an increased perception of the crispiness of crisps (Zampini & Spence, 2004). These experimental examples demonstrate the intriguing relationship between sound-taste correspondences, so-called “sonic seasoning” (Wang et al., 2015, p. 18), by which sound can be utilised to alter the taste of a dish.

Utilising scientific evidence, crossmodal researchers and sound designers have recently collaborated to compose their own soundtracks to match specific tastes of food. Similarly, Okamoto et al. (2009) examined the efficacy of food identity information, such as labelling, on perceived food tastes. Participants who tasted samples with corresponding food name labels rated their taste perceptions significantly higher than those presented with food samples denoted by random numbers due to increased familiarity, especially in relation to olfaction and flavour.

Based on a solid understanding of gastrophysics rooted in the cognitive psychology and neuroscience of multisensory integration, these innovations increasingly help to heighten our authentic, multi-sensory experiences of food and drink (Spence & Shankar, 2010). Whilst food tourists’ tasting experiences require further documentation in tourism studies, it is acknowledged that currently gastrophysics studies provides a better understanding of the mechanisms and structures through which food taste perception is formed, given that food is considered a multisensorial medium of learning and appreciation of culture.

Mechanisms underlying the taste modulation effects are complex (Wang & Spence, 2018), yet the gastrophysics approach empirically

confirms how neuroscience, psychology and design are changing not only what we put on our plates but also how we experience and perceive it (Spence, 2011). Furthermore, this approach can be rigorously applied to explain what affects tourists' multisensory food experiences on their purposeful visit to food-specialised tourism sites in the context of food tourism destinations and attractions.

### 3. Research methodology

#### 3.1. Research context

Hangzhou has expanded its reputation and influence in the tourism market. Statistics demonstrate that from 2012 to 2018, the average growth rate per annum for tourism income and tourist numbers in Hangzhou remained at 17.1% and 13.59% respectively (Hangzhou Municipal Bureau of Culture, Radio, TV and Tourism, 2020). The Hangzhou Cuisine Museum (hereafter, HCM) is an example of a new tourism attraction that opened to the public in 2012. It showcases the Hangzhou and Zhejiang cuisine, which is one of the eight main traditional cuisines in China (Okumus et al., 2018). The HCM hosted between 135,000 and 163,000 visitors annually during 2016–2018, with predictions of around 200,000 visitors for 2019 (administration officer of HCM, personal communication, August 27, 2018). The museum complex consists of two sections: (1) an exhibition hall and (2) themed 'dining experience' restaurants.

The restaurants offer around 1500 seats for dining and additional space for presentations or workshops. These educational experiences are provided by qualified chefs for the benefit of visitors who wish to learn how to make Hangzhou and Zhejiang cuisine. The exhibition hall takes up two floors consisting of seven sections which display in chronological order, the transformation and characteristics of Hangzhou and Zhejiang cuisine and the cultural cuisine of the local population. It includes displays of lifelike, plastic replicas of Hangzhou and Zhejiang dishes, incorporating the ten most famous Hangzhou signature dishes, with a variety of textual and visual interpretations. At the restaurants, visitors can taste the same foods displayed in the exhibition hall.

As such, the HCM's unique setting is highly pertinent to the exploratory nature of this study which conceptually, has adopted a gastrophysics approach to food tourism research. The museum exhibition and restaurants complex facilitates in-situ studies of gastrophysics which examine the influence of knowledge, environment, and physical and psychological factors with regard to diners' perceptions of food taste (Spence, 2011, 2017). Subsequently, this study can be extended beyond this food-themed museum to other food tourism attractions and destinations to enable greater understanding of the cognitive development of food taste perceptions of purposeful food tourists. The integration of psychology and neuroscience through gastrophysics, as defined earlier in the introduction, can advance understanding of food tourist's taste perceptions, ultimately explaining the mechanisms and structures through which food tourist's multisensory experiences are constructed and unfolded.

#### 3.2. Research design and data collection

This research takes an inductive approach investigating a little-known area of food tourism experiences. It offers an in-depth understanding of the phenomenon, taken from the perspective of individual experiences (Denzin & Lincoln, 2017), and adopts the gastrophysics approach as the overarching theoretical framework. It explores influential cognitive factors in two sets of lived food museum experiences – that is, exhibition tours and actual food tasting experiences, and investigates the cognitive development of these experiences in creating and shaping one's food taste perception in a food museum setting.

This inductive, qualitative research within the interpretivism paradigm was deemed to be most appropriate for this study with two important justifications. Firstly, previous studies on gastrophysics and

multi-sensory taste perception have predominantly adopted a traditional positivist deductive-quantitative approach. Such an approach prefers well-defined causal models using independent and dependent variables (Bramescio & Setser, 1990; Gallace et al., 2011; Okamoto et al., 2009; Sahakian et al., 1981; Spence, 2011, 2014, 2017; Spence & Shankar, 2010), but fails to unfold the qualities of entities (for example, one's lived food taste experiences whilst travelling); neither are the processes and meanings experimentally examined in terms of quantity or frequency (Denzin & Lincoln, 2017).

Secondly, the research objectives of this study put the world of human's lived experiences at the centre, that is, tourist's food taste experiences in the context of food tourism attractions, where individual belief and action intersect with relevant cultures. Thus, a naturalistic perspective and interpretive understanding of one's lived experiences and their meanings in individual's lives are crucial to securing an in-depth understanding of the phenomenon in question in a more nuanced manner (Bryman, 201; Denzin & Lincoln, 2017). Such a qualitative approach is inherently meaningful, given rapid social and cultural changes and the ongoing diversification of life experiences which continue to present us with new social contexts and perspectives (Flick, 2002).

Thus, in-depth interviews were conducted to Chinese domestic food tourists at the HCM in China. Due to a lack of consensus regarding the definition of 'domestic tourist', this study utilised the self-defined approach as the measure of eligibility to take part that is, participants who defined themselves as a purposeful food tourist: outside their usual environment where the primary purpose of the visit was the food taste-related experiences (Hall & Sharples, 2003; Kim et al., 2019; Su et al., 2020). Eligible participants were required to seek out both the exhibition and dining experiences to reflect the full range of experiential components offered in the HCM and their influence on the food taste experiences.

Tourists' food-related preferences or eating habits play a crucial role in tourist's attitudes and behaviours towards food choice, taste perception and food quality evaluation (Chang et al., 2010; Ji et al., 2016; Mak et al., 2012, 2017; O'Mahony, 1991). A person's ethnic background and/or culture is identified as being a common denominator of the above (Cohen & Avieli, 2004; Goolaup et al., 2018). For this reason, samples were purposely confined to domestic Chinese food tourists only, as it is justified that domestic tourists, albeit not homogenous, are often expected to possess a higher level of socio-cultural familiarity with domestic food and food production regions (Kim et al., 2019).

The interviewees were recruited between September and December in 2018 at the restaurant site located within the museum because the visitor flow of the museum is designed to first navigate the exhibition hall and later arrive at the restaurant site. Around 100 potential respondents were approached at the exit door of the restaurant site, and 20 interviewees satisfied the selection criteria for taking part in the study and gave their informed consent. The selection criteria included: (1) self-defined domestic food tourists; (2) first time visitor to the HCM; and (3) at least 60 min spent in the museum exhibition prior to dining. These criteria were put in place to ensure that all potential participants were able to sufficiently express their thoughts and perceptions on the subject matter in question.

Open-ended interview questions included: (1) To what extent are you familiar with Hangzhou cuisine?; (2) What did you order for your dining experience at the restaurants? and why did you order them over other dishes offered?; (3) Did the prior experience at the HCM exhibition hall influence your dining experience in the museum restaurants? and how and why?; (4) What factors influenced your food selection and perceived taste experiences at the HCM restaurants?; and (5) how would you describe your food taste experiences at the HCM restaurants?. All interviews were conducted individually in Chinese (being the native language of the participants) and then translated into English. Two professional language translators were employed during the whole

translation process to ensure accuracy and credibility of the translated transcripts, which was also re-confirmed by the researchers who are bilingual. The duration of the interviews ranged from 30 to 60 min. Saturation of the data was verified, when it was noted that repetition of feedback was evident in the last few interviews (Denzin & Lincoln, 2017).

### 3.3. Data analysis

The analysis of the interviews was inductive and data driven, adopting a combined approach utilising thematic analysis and grounded theory to fulfil the research objectives of the study. The common process of data analysis started with organising and transcribing the data. Thematic analysis was adopted to identify and analyse themes or categories of meanings in transcripts (Bryman, 2012), whereas the use of grounded theory defined the relevant processes and identified the conditions under which the themes or categories emerged. This enabled meaningful relationships between these categories to be specified and subsequently aided in theory development (Charmaz, 2017).

The initial thematic analysis assisted in exploration of emerging models from the identified themes at the second stage of data analysis, while the use of grounded theory overcame any unforeseen limitation(s) stemming from a solely thematic analysis approach (Bryman, 2012; Charmaz, 2017). This is especially in response to one of the proposed research objectives, that is, to explore the nature and processes involved in the cognitive development of food tourists' taste perception as informed by the combination of touristic experiences at the museum exhibition hall and dining restaurants.

Initially, the transcripts were (re)read through several times, as both thematic analysis and grounded theory are iterative, comparative, interactive, and abductive methodologies (Bryman, 2012). Additionally, memos were written in the margins to summarise the data and synthesise embedded meanings. For coding purposes, the focus was on the respondents' cognitive information acquisition, prior knowledge formation, and multisensory food tasting experiences, incorporating the background contexts of their lived experiences, with the descriptions and reflections most pertinent to the research questions and the gastronomy perspective. Thematic themes then emerged from the categorisation of information to aid manageability of the data. Once this was achieved, the data was interpreted and refined with empirical specifics to move towards general statements about the emergent categories and the underlying relationships between them (Denzin & Lincoln, 2017). This was achieved through the lens of gastronomy approach.

Table 1 presents the respondents' characteristics, including their pseudonym name, gender, age, occupation, residential area, travelling companion, and times of visit to the city of Hangzhou. Respondents were equally represented by gender type. The respondents' ages ranged from 20 to 62 years, with an average age of 32 years. Respondents mostly travelled with friends or family members such as husband, wife and parents (85%), whereas only 15 percent were travelling alone. While 60 percent had travelled from Beijing municipality ( $n = 2$ ), Zhejiang ( $n = 5$ ), Shanxi ( $n = 3$ ), and Shandong ( $n = 2$ ), which are relatively neighbouring provinces to Hangzhou, the remaining respondents were from the far North, West and Southern China including Jilin, Sichuan, and Guangxi province. Almost half of the respondents were first-time tourists to Hangzhou, the remaining respondents were repeat visitors, of which half had been to Hangzhou more than 4 times.

## 4. Findings

In-depth interviews led to the following three core categories in terms of the nature and processes involved in the cognitive development of participants' food taste perception: (1) cognitive information acquisition through textual and visual interpretations of Hangzhou cuisine and associated history and culture at the stage one 'museum exhibition experience'; (2) prior knowledge formation from the HCM exhibition experience as a powerful cognitive informant and an imagined sensory stimulus to food tasting experience; and (3) food selection and appetitive responses for food tasting experience at the stage two 'museum restaurants experience'. Direct quotes used in the findings are identified by the respondent's pseudonym name, as shown in Table 1.

As presented in Table 2, the first core category 'cognitive information acquisition' derived from the HCM museum exhibition experience during stage 1, constitutes two sub-categories so-called 'textual interpretation' and 'visual interpretation'. These consist of standing text panels, animated videos and pictures, multi-media tools, audio-visual technology, vivid and colourful life-like replicas, and traditional drawings and paintings, respectively. The second core category, 'prior knowledge' is processed and formed after the museum exhibition experience, consists of two sub-categories – 'cognitive informant and appreciation' and 'imagined sensory stimuli'. The third core category 'food tasting experience' derived from the HCM restaurant experience during stage 2, constitutes two sub-categories, 'menu selection' and 'appetitive responses'. It is found that multi-sensory food taste experiences are a consequence of the two core categories (that is, cognitive information acquisition and prior knowledge) which is further elaborated and

**Table 1**  
Profile of respondents ( $n = 20$ ).

No.	Name (Pseudonym)	Gender <sup>a</sup>	Age	Occupation	Residential Area	Accompaniers	Times of Visit to Hangzhou
1	Xiaolei Zhang	M	46	Engineer	Taiyuan, Shanxi Province	Spouse	4 times +
2	Haiyue Qiu	F	20	Student	Ningbo, Zhejiang Province	Classmate	4
3	Wenxiang Jiang	M	28	Doctor	Beijing Municipality	Colleague	1
4	Dandie Xie	F	51	Employee	Zhoushan, Zhejiang Province	Spouse	4 times +
5	Yi Miao	F	28	Teacher	Huzhou, Zhejiang Province	Boyfriend	4 times +
6	Zou Wang	M	40	Employee	Shandong Province	Friends	4
7	Xiangdong Weng	F	32	Businessman	Quanzhou, Fujian Province	Friends	3
8	Yao Yang	F	24	Student	Wuhan, Hubei Province	Mother	1
9	Bo Wang	M	28	Staff	Shanxi Province	Spouse	1
10	Ruohong Su	F	22	Student	Nanning, Guangxi Province	Alone	3
11	Yeqing Wang	F	25	Student	Shaoxing, Zhejiang Province	Boyfriend	4 times +
12	Guogang Yao	M	34	Staff	Chengdu, Sichuan Province	Colleague	1
13	Daixia Gao	M	24	Doctor	Shandong Province	Colleague	1
14	Lin Yu	M	47	Public servant	Beijing Municipality	Friends	4 times +
15	Lin Dong	M	28	Staff	Changzhou, Jiangsu Province	Alone	3
16	Wenyu Liu	M	34	Businessman	Shenzhen, Guangdong Province	Alone	1
17	Hua Liu	F	62	Lawyer	Dalian, Shenyang Province	Spouse	1
18	Wenjing Jin	F	24	Student	Jilin Province	Parents	1
19	Haoyi Cao	M	24	Student	Yiwu, Zhejiang Province	Friends	4 times +
20	Yi Wei	F	26	Staff	Shanxi Province	Friends	1

<sup>a</sup> Note: F, female; M, male.



**Table 2**  
Summary of coding results from thematic analysis.

Sub-categories	Categories	Core categories
<b>Museum Exhibition Experience as Stage 1</b>		
<ul style="list-style-type: none"> <li>Standing text panels (e.g., geographical characteristics, regional gastronomic culture, and famous Chinese figures' personal stories about Hangzhou cuisine)</li> </ul>	Textual interpretation	Cognitive information acquisition
<ul style="list-style-type: none"> <li>Animated videos and pictures</li> <li>Multi-media tools</li> <li>Audio-visual technology</li> <li>Vivid and colourful life-like replicas</li> <li>Traditional drawings and paintings</li> </ul>	Visual interpretation	
<b>Prior Knowledge Formation from the Exhibition Experience</b>		
<ul style="list-style-type: none"> <li>Awareness of iconic dishes of Hangzhou cuisine</li> <li>Repeated information and appearance</li> </ul>	Cognitive informant and appreciation	Prior knowledge formation
<ul style="list-style-type: none"> <li>Interest in certain dishes according to their colour</li> <li>Increased attention and imagination resulting from the repetition of knowledge acquisition</li> <li>Cultivated mental imagery and curiosity in the actual taste of Hangzhou cuisine</li> </ul>	Imagined sensory stimuli	
<b>Museum Restaurants Experience as Stage 2</b>		
<ul style="list-style-type: none"> <li>Attention, story, remember</li> <li>Familiar to the dish, bond to the history</li> </ul>	Menu selection	Food tasting experience
<ul style="list-style-type: none"> <li>Textual sense &gt; Label: ingredients, cooking methods, sense of history, culinary information</li> <li>Visual sense &gt; Vividness, beautiful</li> <li>Gustatory sense &gt; Ingredients: imagined flavour, actual flavour, texture</li> </ul>	Appetitive response	

discussed in detail in section 4.3.

#### 4.1. Cognitive information acquisition through textual and visual interpretations

After visiting the HCM exhibition hall, it is evident that the participants became more familiar with local food and culture, which was largely cultivated by their cognitive information acquisition. Specifically, they mentioned that they had learned about the varieties, characteristics, ingredients, unique cooking methods and anticipated tastes of Hangzhou and Zhejiang cuisine, and about iconic signature dishes of the region.

Textual and visual interpretations of Hangzhou cuisine and associated history and culture (for example, standing text panels, paintings, animated videos, multi-media tools, life-like replicas) enabled respondents to gain wide-ranging and deeper insights into food knowledge at the HCM exhibition hall. Firstly, the text-based interpretation regarding local cuisine and culture, contained information on the geographical characteristics of Hangzhou and its influence on the development of a unique, regional gastronomic culture. This included descriptions of Hangzhou cuisine, descriptions of local gastronomy and/or food history, and hidden stories of famous people associated with particular Hangzhou dishes. More than 80% of respondents appreciated the textual interpretation of Hangzhou dishes and their association with famous Chinese figures' (e.g., poets, literati) personal stories of their beloved dishes.

Bai Juyi preferred eating Hangzhou cuisines ... there was an introduction of Bai Juyi, along with the history and culture of Hangzhou dishes ... Bai Juyi's favourite dishes were displayed nearby, including *Hairy Crabs*, *Lotus Seed Pod* and the *West Lake Vinegar Fish* ... some dishes as well as glutinous rice. [...] And Su Xiaoxiao's story

was displayed [as well] opposite from Bai's. [...] I knew about them only in the books and poems before. I never expected that they had such a strong connection with Hangzhou cuisine in their lives, which attracted my attention a lot, so I was super-curious and keen to taste them [if possible]. (Ms Yi Miao)

Similar to Ms Miao, the personalised stories of famous Chinese figures around Hangzhou cuisine were one major form of memorable information acquisition for all respondents creating a bond between themselves and the Hangzhou cuisine and dishes. The association of dishes with famous figures acted as focal reference points for a connection to image and enduring intimacy (between those famous figures and the respondents themselves). This provided a sense of social and individual connectedness (van Krieken, 2012). In turn, this stimulated and further increased the respondents' interest in tasting those dishes associated with famous personalities who continued to inspire respondents and represent important historical and cultural aspects of Chinese society. Previous studies have noted the significance of respectable famous figures, so-called '*Mingren*' in the context of everyday engagement with celebrity culture in China (Xu, Reijnders, & Kim, 2021), and therefore corroborates the interpretation of this finding related to food and celebrity.

Notwithstanding the importance of textual interpretation for information acquisition, it cannot be considered in isolation from other forms. Multi-media visual tools employed as part of the museum exhibits were often used simultaneously with textual with visual interpretations (Sutcliffe & Kim, 2014). Accordingly, visual interpretation of the exhibits, particularly the life-like replicas, were found to be the second most common mode of cognitive information acquisition with respect to local food.

I had a close look at the *Ding Sheng cake* for a long time, because it looks delicious. The story was, before Yue Fei's Army went on an expedition, people hoped they would win [the battle] so they named the dessert *Ding Sheng cake*. I found not only the visual appearance of the dish, but its story was wonderful and heartfelt. (Ms Haiyue Qiu)

Echoing the above comment of Ms Qiu, many of the interviewees also spoke highly regarding the replica dishes in the exhibition and frequently described them as 'looking real and delicious'. In particular, they were impressed by the dishes in the Man-Han Banquet exhibition. Some participants precisely described the vivid and exact colours of the replicas of the Man-Han Banquet and how refined and detailed they were, as if it were real food. In some cases (for example, in the representation of the downtown streets of the Song Dynasty), the replica of the *Dongpo pork* dish looked so realistic, that the interviewees claimed that they spent additional time examining it to try to imagine its flavour and texture, such was their interest in this particular meat dish.

In many cases, the respondents commented that visual interpretations alone were powerful enough to impress them in terms of their touristic experience and information acquisition. Such content included not only life-like plastic replicas of dishes, but also pictures, animated videos, and audio-visual technology interpretation. Whilst some interviewees appreciated certain videos, traditional drawings providing key interpretation also impressed the food tourists, as Ms Yao Yang recalled:

I was very impressed with the drawing (which shows people's life in Song Dynasty, just like the Riverside Scene at Qingming Festival) at the entrance. It was also very vivid. There were people of various social status on the drawing, such as dignitaries, common people, and publican. [...] We also paid attention to what people sold. Those pastry shops and flour shops were lifelike. [...] To see the difference (between the past and present) was very interesting. (Ms Yao Yang)

The drawing though lacking animation, contained appealing food-related elements purporting to historical contexts of everyday life such as pastry shops and flour or noodle shops. These visualised portrayals of

food not only offered information of the relevant food history for participants, but also enabled them to relate historical portrayal of food to the food in the present day, whether via a drawing, a video, or as a food model. As such, they constantly and simultaneously compared food (items) between the past and present, like Ms Yao Yang, or greatly appreciated how certain dishes had been invented centuries ago.

Therefore, this study conforms with previous research highlighting the importance of the visual nature of the tourism experience whilst also emphasising the stereotypical nature of 'ocularcentrism' (Synnott, 1993) and 'visualism' (Macnaghten, & Urry, 2001) of tourism. Using visual cues to assess the food replicas, participants' sensory stimuli became a powerful cognitive and physiological tool. It enabled perceptions of taste to emerge with an expectation that this would be confirmed upon actual tasting in the restaurant later (Djordjevic et al., 2004). It is also suggested that visual stimuli play an important role in the initial stages of taste transduction, thus stimulating one's hunger rating from the gastrophysics perspective (Spence, 2011). This was especially apparent when actual dishes of palatable foods were placed in front of participants (Birnbaum et al., 1974 cited in Spence (2011)).

#### 4.2. Prior knowledge as a powerful cognitive informant and an imagined sensory stimulus

It was found that cognitive information acquired at the HCM exhibition hall was processed and formulated through prior knowledge which led to an increasing level of familiarity with Hangzhou and Zhejiang cuisine. It also intensified participants' genuine interest in tasting authentic Hangzhou cuisine at the HCM dining restaurants following their touristic experiences at the HCM exhibition hall. Consequently, tasting the dishes they first encountered within the HCM exhibition became a must-do tourist experience at the HCM dining restaurants. The multisensory embodied experience of food tasting was physiologically and psychologically stimulated and elicited after the initial sensory exposure and mental imagery (Spence, 2011, 2017). The participants cognitively evaluated that their visit to the HCM complex would be incomplete without tasting the signature dishes, for they believed that tasting them would create "a deeper experience for visiting the museum and restaurants complex (Ms Wenjing Jin)" and "a more in-depth understanding of these dishes I learnt from the museum (Mr Lin Dong)".

Therefore, information acquisition and cognitive appreciation of it was sufficient to trigger their gustatory desire and acted as psychological preparation for the expected tasting of the dishes they had encountered visually and textually at the HCM exhibition hall. This phenomenon can be explained by Appetitive Pavlovian learning, referring to "the formation of associations between neutral cues and reward outcomes (Arnaudova et al., 2018, p. 1062, p. 1062)". Whether it was a particular story or a replica of dish that initially stimulated their attention and/or interest and thus influenced their appetitive behaviours (for example, desire to eat) from the Appetitive Pavlovian learning perspective, the respondents were more cognitively informed and educated. As a result, the impact of prior knowledge formulation through the cognitive information acquisition at the HCM exhibition hall became more observable when they selected dishes on the menu and tasted at the HCM dining restaurants. As such, the food tourist's tasting experiences at the HCM dining restaurants are found to be categorised into menu selection and appetitive responses, which are detailed in Section 4.3.

The formulation of (prior) knowledge was found to stimulate the food tasting experiences at the HCM dining restaurants, with increased attention given to the menus and greater expectation relating to the tasting of the menu selections. Around 80 percent of respondents were remembering the iconic dishes of Hangzhou (and Zhejiang) cuisine, when they selected menu items at the HCM dining restaurants. Approximately 30% of respondents even expressed their disappointment that they had not found certain showcased dishes on the menu at the HCM dining restaurants. Ms Dandie Xie commented "I felt I must eat

here after visiting the museum. [...] I should try the special dishes I saw [there]". In this regard, the iconic dishes of Hangzhou cuisine presented in the HCM exhibition hall seemed to be regarded as obvious recommendations for them. More than 80% of participants were eager to order the dishes such as *Donpo pork* that they had encountered in the HCM exhibition hall. As discussed previously, this indicates that the mere sight of food or food items can be capable of changing salivary flow (Sahakian et al., 1981; Spence, 2011). Also, raising awareness of the dishes played an important role in people's food selection, as Mr Bo Wang suggested: "we would order the dishes after we saw them [in the museum]. But if we don't know them, we may not order at all".

Varying the modes of knowledge formulation through the process of repetition of the information in the HCM exhibition hall greatly reinforced attention paid by the participants towards the local dishes, and the enhanced familiarity with a dish increased the likelihood that the participants would subsequently order it (Goolaup et al., 2018). This is in line with the previous studies on food tourism which postulated that previously attained information through a variety of information channels such as guidebooks and media programmes was highly influential in their decision-making processes in relation to their food choices and taste perception (Kim et al., 2009, 2013, 2019; Leung et al., 2013; Mak et al., 2017).

While the attained knowledge enhanced many interviewees' taste perception in general, as suggested by Mr Liu, the interviewees remained somewhat critical when their observations and newly-acquired knowledge of the food affected the tasting experiences adversely, mainly due to a mis-match between expectation and reality. For example, a few interviewees commented that *Zha Xiang Ling* tasted too oily. As Ms Haiyue Qiu noticed in the exhibition, there was a piece of oil-absorbing sheet under *Zha Xiang Ling*, while in the HCM dining restaurants, the dish was served in a basket without a piece of oil-absorbing sheet. Mr Bo Wang reflected: "my expectations on dishes became higher. [They were] mainly visual and gustatory expectations aligned to what I learnt prior to tasting".

The influence of the prior knowledge formation on the interviewees' appetitive responses is complex and can be categorised in three ways. Firstly, the respondents seemed to be interested in certain dishes according to their colour. A common remark made by the great majority of participants was on the plastic replicas of dishes, as Mr Wenyu Liu commented 'the colour of the dish models was vivid, and I wanted to eat'; and similarly, as Mr Guogang Yao suggested "seeing the colour of the dishes, they looked quite delicate so I really wanted to have a taste". The sight of attractive food arouses one's appetitive responses. This mode of influence is in line with the previous research on salivary flow, which is modulated by the sight of a foodstuff from the gastrophysics perspective (Spence, 2011, 2017). In this regard, previous studies confirm that food colour have been found to influence perceived taste and taste evaluation (Johnson & Clydesdale, 1982).

The second mode relates to increased attention resulting from the repetition of cognitive information acquisition at the HCM exhibition hall. Several participants ascribed their decisions to ordering a particular dish relative to its repeated appearance in the museum. As Ms Ruohong Su explained, "I ordered these dishes, because they appeared many times in the exhibition and had become deeper in my memory". The respondents interpreted the repetition as a key taste experience not to be missed. This is different from the effect of attention to menu selection; at the appetitive response stage 'attention' acts as a stimulus for salivary flow, increases interest in what has been seen, and results in gustatory action through subsequent multisensory taste perception (Spence, 2011, 2017).

The third mode of influence is also associated with another cognitive factor, so-called 'mental imagery' (Gallace et al., 2011; Okamoto et al., 2009; Spence, 2011). The experience of visiting the HCM exhibition hall immediately prior to having tasting experiences at the HCM dining restaurants, sparked their imagination and aroused their curiosity in the actual taste of Hangzhou cuisine, as Ms Yeqing Wang explained:

Looking at those replicas of dishes, I felt I really had eaten these dishes, with various senses, including visual [sense] and auditory sense ... I became interested in Hangzhou cuisine after visiting the museum, and wanted to taste the Hangzhou dishes. I wanted to know whether it was as delicious, refined and beautiful as what the museum introduced.

To a greater extent the respondents' tour of the exhibition aroused their interest in verifying or confirming the actual taste of certain dishes against their imagined taste. More than 60% of respondents clearly described how they imagined the showcased replicas of dishes would taste which they had not tasted previously. The process of mental imagery Ms Yeqing Wang went through would exert an influence on the salivary flow (Spence, 2011, 2017), encouraging her to taste the dishes immediately after visiting the HCM exhibition hall. Such cognitive processes occurred when they saw the replicas of dishes. This also occurred when they absorbed any type of information in the exhibition and simultaneously imagined food and its actual taste, as mentioned previously, the example of comparing the difference between food as it used to be cooked and as it is now.

#### 4.3. Influence of prior knowledge formation on multi-sensory taste experiences

From the gastrophysics approach, a useful way to explore the influence of prior knowledge formation at the HCM exhibition hall on the interviewees' taste experiences using qualitative data is to analyse the comparison between how they imagined the taste of a dish when first encountering it in the HCM exhibition hall and how they actually perceived the taste when eating the dish at the HCM dining restaurants. This cognitive comparative evaluation was explicitly mentioned by some of the interviewees. For example, Ms Ruohong Su suggested:

I could make a comparison. A general [mental] impression of the dish had been formed in my mind first in the museum [while touring]. I now could compare the dish with my own impression while dining in the restaurant. That is quite interesting.

All respondents were able to compare taste or flavour perception with their pre-tasting mental imagery formed earlier in the HCM exhibition hall visit. The great majority commented on the perceived tastes of the dishes in terms of textural, visual, and gustatory senses. Many of their comments on the dishes revolved around the distinctive features of the dishes, whether positive or not. In particular, three kinds of prior knowledge formation through the cognitive information acquisition in the HCM exhibition hall appeared to have the most noticeable influence on their taste perception.

Firstly, knowledge of the key ingredient in a dish led them to expect the taste of that ingredient to feature significantly in the dish, as explained by Mr Wenxiang Jiang and Mr Guogang Yao who described their relatively incongruent taste perceptions of two iconic Hangzhou dishes, namely *West Lake vinegar fish* and *Xie Niang Cheng*:

The West Lake vinegar fish isn't bad. But it is different from what I thought it should be. The taste of vinegar isn't very strong, while I thought the dish to be sourer. (Mr Wenxiang Jiang)

For example, the Bamboo-tube rice in our Sichuan has the fragrance of bamboo. I thought this dish (i.e., *Xie Niang Cheng*) should have a fragrance of orange, as it was cooked with orange. But when I ate, perhaps it had been laid too long, the orange flavour was quite light. (Mr Guogang Yao)

In both cases, the key ingredients formed part of the names of the dishes and acted as labelling information. Previous gastrophysics studies confirm that food identity or food-name labels are positively correlated with taste perception, but only when the taste and name of a dish are congruent (Schifferstein & Verlegh, 1996; Spencer, 2011). However, in

the case of discrepancy or incongruence between food label and taste, the violation of food expectancies can lead to negative evaluations and negative taste perceptions rather than enjoyment and pleasure from food taste (Spencer, 2011; Zellner et al., 2004). This is consistent with and thus re-confirmed by the findings of this study. Despite this, there was little evidence to suggest that the same knowledge would result in similar taste perceptions between food tourists, given that personality traits and past experience were not taken into consideration for this study.

By way of example, Ms Dandie Xie tasted *Xie Niang Cheng* as did Mr Guogang Yao and commented, 'it is sweet with a bit of salt. The orange may give the sweet and a bit sour flavour. The lower part of it tastes better'. As Ms Dandie Xie explained, the crab meat in the lower part of the orange tasted sweeter, and she liked that sweet flavour. Therefore, while one tourist considered the orange flavour light, another perceived the orange flavour sufficient and sweet enough. In other words, to what extent a food tourist would rate the degree of expected flavour or appreciate the taste varies from person to person, and it is likely to be influenced by his or her individual preference of tastes, previous, similar experiences, since personality traits and past experiences increases familiarity which plays a crucial role in assessing the congruency between the food names or labels and taste perception (Okamoto et al., 2009; Schifferstein & Verlegh, 1996). In the field of food tourism, food-related personality traits and past experience have been investigated as a precursor for local food consumption motivations (Mak et al., 2017) and tourists' food experience and subsequent satisfaction (Ji et al., 2016). Therefore, the influence of prior knowledge formation relates more towards dimensions of taste perception which appears to be the key focus for the tourist as diner.

Secondly, when the interviewees became more aware of the cooking method for a dish in the exhibition, they were more likely to associate the taste of the dish with the usual result from using that cooking method and focus on this aspect of taste perception. For example, Ms Ruohong Su described what she noticed about a showcased dish, *Vegetarian Duck*, and gave the following comment after she ate it:

It seemed to be a hot dish in the museum. Its cooking process was frying, so I thought it would be a [very] hot dish. The taste of the sauce would be a bit stronger. But it turned out to have less flavour ... well I would say 'very bland', only with a bit of sesame oil and salty flavour.

The knowledge formation relating to cooking method for a dish led Ms Su to expect a more typical or stronger taste associated with that cooking method, and therefore in this case adversely influenced taste perception. This explains the 'food labelling-taste incongruence' from the expectancy perspective (Okamoto et al., 2009; Schifferstein & Verlegh, 1996). This plays a more influential role than previous research suggests. For example, in a previous study, the participants rated a bitter taste as less bitter when they were mis-informed that it would be much less bitter (Nitschke et al., 2006). In this study, however, as the interviewees interpreted the knowledge and imagined the tastes of dishes in different ways; the influence of prior knowledge formation on their taste perception is variable rather than fixed. What is even more complex and open to further research is that in some cases, the food tourists had some prior knowledge and impressions about certain famous dishes before visiting the HCM, and after viewing the exhibition, their existing knowledge would be further enriched or even refined, though it was not empirically tested in this study.

Lastly, historical narratives such as stories of famous people associated with certain dishes were interpreted as meaningful sources for participants and added to their dining experiences. For example, Ms Yeqing Wang expressed that 'the people of thousands of years ago were closely associated with us', and with the added sense of history, eating was particularly meaningful. Similarly, Mr Wenyu Liu also suggested:



Understanding the history and development of Hangzhou cuisine, the tourists like me would have a kind of expectation in their mind, I mean 'favourable impression'. No matter the dishes tasted ordinary, or not that tasty, they would certainly perceive that the dishes were more delicious, and their taste was better. There is perhaps an impact of psychological factor I am sure.

## 5. Discussion: the cognitive development of food tourist's food taste perception

This unique exploratory study conducted in the food museum exhibition hall and dining restaurants complex setting has exemplified the two-step cognitive processes pertaining to the overall food taste perception of food tourists. Fig. 1 summarises and illustrates the cognitive development processes of food taste perception that constitute the food menu selection and appetitive responses as food tasting experiences, informed by the results of this empirical study as discussed earlier. This lends theoretical support to the concept that tourist's multisensory experience of food is an accumulation of cognitive signs of taste perception in the context of food tourism attraction.

The significant finding is that cognitive signs or factors, that is, a series of cognitive information obtained from the textual and visual interpretations prior to the food tasting experiences, performs as the prior knowledge, which is the key player in the cognitive evaluation of tourist's food taste experiences. These cognitive factors psychologically and physiologically stimulate the tasting or gustatory desire in terms of menu selection and multi-sensory appetitive responses to the actual food tasting experiences. More than 80% of interviewees ordered a dish because of its repeated appearance in the HCM exhibition hall. As discussed previously, the repeated appearance readily increases a tourist's awareness, attention, and interest or curiosity which influence him or her to regard the repeatedly showcased dishes as recommendations of must-eat food items at the HCM dining restaurants.

The interviewees also receive multiple cognitive signals that create

high expectations of the actual flavours based on the key facts (for example, historical facts of dishes, key ingredients, cooking methods) and food stories associated with historical figures and the social, cultural contexts embedded in the textual and visual interpretation of the HCM exhibition hall. In particular, the visual information adds more layers of vividness regarding food observations and cognitive insights into its perceived food tastes. As such, attractive food representations affected the interviewees' perceptions of how that food would taste in reality. The interviewees who formed visualised perceptions of showcased signature dishes not previously tasted, imagined the taste of the dishes more, and such mental imagery encouraged them to actually purchase the dishes and immediately create taste perceptions in the textual, visual and gustatory senses, that is, their multisensory food tasting experiences at the HCM dining restaurants.

From a gastrophysics perspective, this kind of experiential behaviour driven by multi-sensorial perceptions of food taste can be measured using salivary flow rates and subsequent hunger ratings (Sahakian et al., 1981). Although these were not experimentally tested in this study, the research participants retrospectively narrated that they experienced an increased salivary flow when other sensory cues are stimulated following immediate visual cues such as the sight of life-like replicas of Hangzhou and Zhejiang dishes in the museum exhibition. Such complex processes are reflected in Fig. 1. Through these 'cross-modal effects' (Okamoto et al., 2009), people, or food tourists in this case, cognitively begin to develop a taste perception using all possibly available sensory cues including even food-name labels and other forms of available cognitive information obtained from the textual and visual interpretations (Okamoto et al., 2009; Spence, 2011). This finding also confirms the influence of non-gustatory senses (that is, textual and visual information/labelling/story in particular) in developing taste perceptions that are affected by salivary flow rates in a manner that is similar to those expected when one actually eats the food concerned from the gastrophysics perspective (Gallace et al., 2011; Okamoto et al., 2009; Spence, 2011).

The multisensorial responses to their actual taste experiences are,

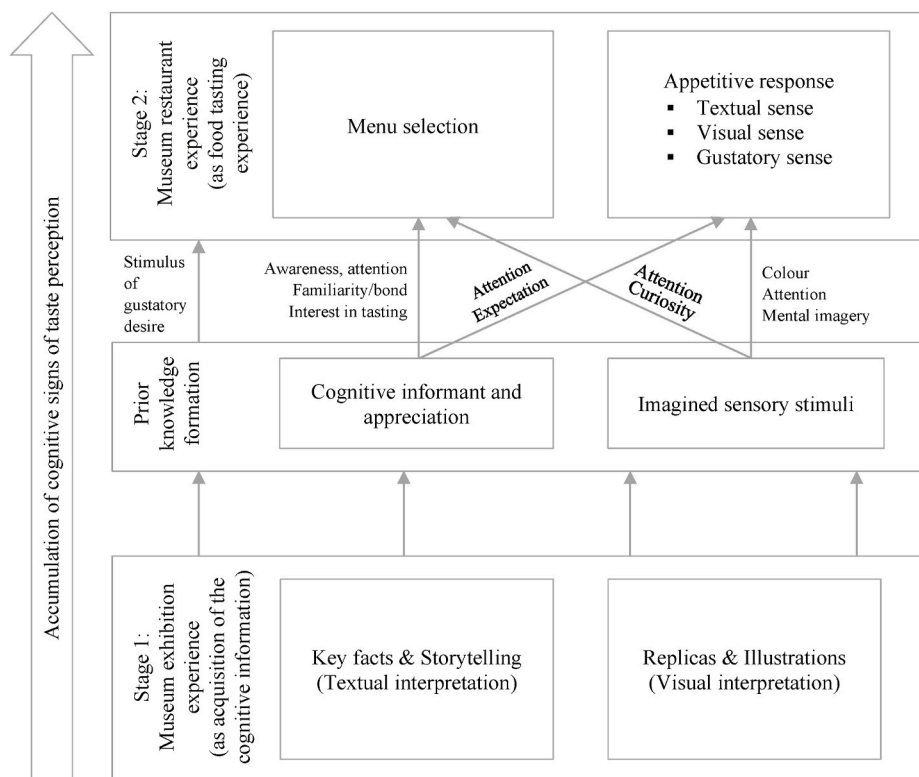


Fig. 1. Cognitive development processes of food taste perception in a food tourism attraction.

indeed, the psychological outcome of the cognitive processes as illustrated in Fig. 1, based on the accumulation of all the cognitive signs of perceived food taste. The multisensorial food taste experiences expressed as the result of sensorial knowledge accumulation and the processing of acquired knowledge whilst tasting the food. Currently, there is a disconnect between the nature of the sensorial experiences of food and the cultural meanings of food in food tourism studies and previous research. This study ignites and confirms that one's food taste experience is dominated by cognition, and multisensorial responses to food taste experiences which is driven by multi-layered cognitive knowledge relating to food. In other words, food is a medium of communication representing culture, history, society and people (Everett, 2019; Reddy & van Dam, 2020), which is fully connected to the taste perception that is cognitively formed and assessed through food tasting experiences.

## 6. Conclusion

Food (taste) experience is arguably a multi-sensory experience, but factors that create sensory responses to food taste perception and the underlying mechanisms of tourists' food taste experience in a food tourism destination (and attraction) have been insufficiently discussed. This novel study explains this least known research area adopting the gastrophysics approach and highlights the significance of interdisciplinary nature of food tourism. The inductive, exploratory approach demonstrates that the development of food taste perception is deeply associated with psychophysical cognitive factors, that is, the actual food and flavour, and the resulting acquired knowledge and information that underpins food taste perception modulation. As such, food experience, specifically focusing on food taste can be viewed as a manipulated experience largely formed from relevant cognitive signs or factors such as non-gustatory senses. Herein food tourism experience design is strongly emphasised using textual and visual informative signals and representations.

In food tourism destination development, multisensory food experience cannot be separated from underpinning social, cultural, and historical features as well as the sensorial interpretations of local food which together make up food tourist's knowledge creation and accumulation. The food tourism experience is a place-bounded experience. Knowledge formation and acquisition of the place and its food (and foodways) is a significant cognitive trigger in tourist's local food taste perception journey, and the tasting experience of the local food, in turn, communicates the place to the food tourist.

Given that this is the first of this kind to our knowledge in the context of food tourism, it seems that further research and a more precise, robust experimental design in relation to the specific research questions needs to be addressed. For example, further examination of the influence of cognitive factors on food selection and food taste experience and evaluation, are therefore warranted before any firmer conclusions can be reached. Quantitative or mixed approaches will be more beneficial to enable generalisation, combining a more robust path analysis of relevant dependent and independent variables around the subject area by taking into consideration the key findings of the current study.

The hope is that this study will help guide tourist experience design decisions as more people explore this intriguing area between cognitive factors and food taste perception in the context of food tourism. As suggested by Everett (2019), future studies should avoid being limited by the simplistic dichotomy approach of production and consumption; local and global; economic and cultural; tourism and other disciplines. Instead, it is a siren call to continue embracing the complexities and multidisciplinary, multidimensional nature of food tourism to further nurture our understanding of this subject area.

Secondly, future studies are advised to consider other food traveller groups such as international tourists including both Western and Asian as well as senior travellers, considering that the sample represents relatively young Chinese domestic food tourists. Senior travellers as an

emerging tourism market, is a heterogeneous group consisting of different socio-economic status, socio-cultural familiarity, and mobility and health concerns, which thus warrants future research. Finally, as the rise of food-themed cultural museums as new tourism attractions across China in the past decade is noticeable (Zhou, 2018), it would be beneficial for future studies to conduct cross-regional and multi-locational comparisons.

Despite some limitations, the findings of the current study shed light on important practical implications for destination marketers and hospitality businesses. Firstly, restaurateurs and food experience designers in commercial settings such as food tourism destinations including food museums are recommended to consider the importance of cultural atmosphere and food authenticity. Despite some variations between China and other countries, a thoroughly designed set of cultural, historical and geographical representations is required to create a desirable, authentic food tasting experience spatially and temporally. A greater focus on unique, authentic local food offerings and anticipated food taste perception is therefore required in initial marketing efforts to create tourist's ultimate food experience.

Secondly, menu design and (textual and visual) interpretations including labelling and dish information should be more wisely incorporated, with consideration given to the target market's cultural and social background. This is needed to avoid arbitrary judgements regarding the food taste experience which may adversely affect the on-site taste experience and overall, result in a negative, unsatisfactory experience of the visited destination and its regional and local food authenticity. Thirdly, and expanding on the above, it is essential for food tourism attractions to develop a collection of local or regional signature cuisines which represent the original taste, texture and appearance in order to fulfil tourist's quest for food authenticity. Not only will this prevent food tourists being disappointed when iconic dishes showcased in a food museum are not available for testing, but it will enable the food tourism attraction to differentiate itself from general or even local speciality restaurants.

## Author contributions

Dr Sangkyun Kim developed the research design including conceptual framework and methodology and involved in formal data analysis and writing and editing multiple drafts. Dr Eerang Park contributed to the research design, formal data analysis, and writing and editing multiple drafts leading to a final draft. Dr Yi Fu (Corresponding Author) contributed to this paper by supervising data collection and project administration, conducting a preliminary analysis, and writing the research methods section including the research context. Mr Fan Jiang was in charge of data collection, site management, translation and transcript.

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## Ethics clearance

The study obtained an ethics approval exemption from the Academic Committee of School of Humanities in Zhejiang University, given that the research was considered 'a low risk research', that is, interviews where the research topic and guiding questions will not have the potential to induce distress or cause reputational or professional harms. The Chair of the Academic Committee was Professor Hansong Lou. The research team was granted to undertake the project subject to obtaining informed consent from each participant, as described in the manuscript.

## Declaration of competing interest

None.

## Appendix A. Supplementary data

Supplementary data to this article can be found online at <https://doi.org/10.1016/j.appet.2021.105310>.

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