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The interplay of sensory and non-sensory factors in food tourism experiences

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Abstract

Purpose: Food is a key element in tourism experiences. This study investigates the interplay of sensory and non-sensory factors in food tourism experiences and models their influence on satisfaction and behavioural intentions.

Design/methodology/approach: The study focuses on the culinary experiences of 304 tourists dining at ethnic restaurants and uses causal relationship discovery modelling to analyse data.

Findings: Sensory factors are important in tourists' culinary experiences with cleanliness, noise levels and room temperature at the top of the causal chain. Results also indicate the interplay between sensory and non-sensory factors to explain overall satisfaction, intention to return and intention to say positive things.

Originality/value: Using embodied cognition theory, the study offers novel insights into the role of senses in food tourism experiences at rural destinations.

Keywords: food tourism, experiences, senses, embodied cognition theory, overall satisfaction, intention to return and intention to say positive things.

感官因素和非感官因素在旅游用餐体验中的相互作用

研究目的 – 美食是乡村旅游的主要吸引物之一。本研究的目的是调查游客在用餐体验中感官和非感官因素的相互作用，以及这些因素如何影响游客的满意度和行为意愿。

研究设计/研究方法 – 本研究使用因果关系建模的方法来分析 304 名在某地方特色餐厅用餐的游客的问卷数据。

研究结果 – 结果显示，对于游客的用餐体验而言，感官和非感官因素具备同等的重要性。此外，结果发现，游客感知到的噪音水平、适宜的室内温度及清洁度在与其他因素的相互作用中非常重要，并能激发游客的满意度和重游意愿。

原创性/研究价值——基于认知理论，本研究为更好地理解感官因素和非感观因素在乡村旅游情境下的游客用餐体验中的作用提供了新的知识。

Keyword: 美食旅游，体验，感官因素，认知理论，满意度，重游意愿，好评意愿

La interacción de factores sensoriales y no sensoriales en las experiencias de turismo gastronómico

Propósito: La comida es un elemento clave en las experiencias turísticas. Este estudio investiga la interacción de factores sensoriales y no sensoriales en las experiencias de turismo gastronómico y modela su influencia en la satisfacción y las intenciones de comportamiento.

Diseño / metodología / enfoque: El estudio se centra en las experiencias culinarias de 304 turistas que cenan en restaurantes étnicos y utiliza modelos de descubrimiento de relaciones causales para analizar los datos.

Resultados: Los factores sensoriales son importantes en las experiencias culinarias de los turistas con la limpieza, los niveles de ruido y la temperatura ambiente en la parte superior de la cadena causal. Los resultados también indican la interacción entre factores sensoriales y no sensoriales para explicar la satisfacción general, la intención de regresar y la intención de decir cosas positivas.

Originalidad / valor: Utilizando la teoría de la cognición incorporada, el estudio ofrece nuevos conocimientos sobre el papel de los sentidos en las experiencias de turismo gastronómico en destinos rurales.

Palabras clave: Turismo gastronómico, experiencias, sentidos, teoría de la cognición encarnada, satisfacción general, intención de regresar e intención de decir cosas positivas

The interplay of sensory and non-sensory factors in food tourism experiences

Introduction

Local food consumption is a core component of tourism experiences (Antón *et al*., 2019; Badu-Baiden *et al*., 2022; Huang, *et al*., 2023). Both sensory factors such as sight, sound, touch, taste, and smell (Krishna and Schwarz, 2014; Stevens *et al.*, 2019) and non-sensory factors, such as freshness and healthy food (Chang *et al.*, 2011; Namkung and Jang, 2007), or helpful staff (Tsaur and Lo, 2020) are important antecedents of positive experiences (Oh and Kim, 2020; Pezenka and Weismayer, 2020; Stevens *et al.*, 2019). Despite the remarkable progress in food-related tourism research over the past two decades (Okumus, 2021), some key issues remain, given that sensory factors often stay undetected and underestimated in terms of their relative importance (Agapito *et al.*, 2017; Errajaa *et al.*, 2021). Drawing on the *embodied cognition theory,* sensory factors are subconsciously processed and perceived and more difficult to capture than non-sensory factors (Krishna, 2012; Stevens *et al.*, 2019). Non-sensory factors are rather consciously cognitively processed and more explicit, thus more obvious to assess (Krishna and Schwarz, 2014; Stevens *et al.*, 2019).

This study addresses two research problems, providing meaningful contributions to the tourism experience literature: *First,* limited knowledge exists on how sensory and non-sensory factors interplay in determining tourists' behavioural outcomes. The term 'interplay' refers to the network of interactions between factors with non-linear, complex and causal relationships that "represent systems as a network of interactions between variables from primary cause to final outcome, with all cause-effect assumptions made explicit" (Chen and Pollino 2012, 134). *Second*, the tourism literature overemphasises the relevance of the visual sense. This visual-centric focus

has resulted in a lesser appreciation of the four remaining senses (Qiu *et al.*, 2018a). A plausible explanation can be traced back to Urry's (1992) important work on the 'tourist gaze'. The conceptual underpinning of the tourist gaze focuses on visual aspects of consumption, neglecting the other senses (Tribe and Airey, 2007).

Accordingly, this study addresses the following research questions: 1) *How do sensory and non-sensory factors interplay in understanding culinary experiences*? and 2) *how does each factor contribute to satisfaction and behavioural intentions*? In this paper, we adopt *causal relationship discovery modelling* and embrace an alternative logic of reasoning to understand tourists' culinary experiences. In this way, we complement existing linear theory construction to capture the inherent complexities of the impact of a set of independent variables on outcome variables (Hosany *et al.,* 2021). We argue that capturing the complexities inherent in consumer perceptions of culinary experiences benefits from understanding the interplay between the different individual factors and how they influence behavioural outcomes.

Literature Review

Sensory and non-sensory factors in culinary experiences

Existing studies on culinary experiences usually operationalise customer satisfaction using an overall satisfaction measure (Muskat *et al.*, 2019; Prayag *et al.*, 2019; Ryu *et al.*, 2012). Sensory and non-sensory drivers both contribute to satisfaction and behavioural intentions of culinary tourist experiences. *Non-sensory factors* are directly cognitively processed and, typically, are not bodily experienced beforehand (Krishna and Schwarz, 2014; Stevens *et al.*, 2019). Tourism and hospitality research have highlighted the importance of non-sensory factors for in creating experiential value. Examples of factors that shape culinary experiences include perceived variety and the freshness of food (Chang *et al.*, 2011), healthy food (Namkung and Jang, 2007), helpful

staff (Tsaur and Lo, 2020), employee product knowledge (Liu and Jang, 2009), prompt service and food waiting time (Chang *et al.*, 2011) and food served as ordered (Liu and Jang, 2009).

Sensory factors are perceived as less obvious and are often underestimated by both researchers and tourists (Errajaa *et al.,* 2021; Lee *et al.,* 2019). Yet, it is clear consumption involve the senses (e.g., Oh and Kim, 2020; Pezenka and Weismayer, 2020), with Li et al. (2023) noting that culinary tourism experiences are unique, appealing to all five senses. Embodied cognition theory suggests that individuals process information subconsciously to make sense of the world (Ignatow, 2007; Von Wallpach and Kreuzer, 2013). The theory focuses on humans' cognitive ability and advocates the consideration of bodily cognition in decision-making processes (Shapiro and Spaulding, 2021). However, Yakhlef (2015) note that the body often remains unacknowledged, and the senses often only play a supporting role. Similarly, Pine and Gilmore (1999, 59) state that "sensory stimulants that accompany an experience should support and enhance its theme". By contrast, Agapito *et al.* (2017) emphasise the importance of sensory stimulation in tourism and acknowledge that consumer behaviour is often irrational and cannot be explained with deductive logic (Krishna and Schwarz, 2014). Hence, the need arises to better understand the sensory stimulants that shape subconscious processing the most (Stevens *et al.*, 2019).

Visual centricity in the tourism experience literature

Despite the growing awareness that sensory factors are highly relevant to understanding the tourist experience, a key issue remains: the visual-centricity, that is, an over-emphasis on understanding the visual sense. Visual-centricity has even been disapprovingly portrayed as the 'tyranny of the visual' (Tribe and Airey, 2007, 11) with the assumption that "looking is always more important

than listening in tourist experiences" (Qiu et al., 2018, 869). Visual sensory factors include the restaurant's visual layout, lighting and colour (Pezenka and Weismayer, 2020). Tantanatewin and Inkarojrit (2018) note that colour is a key factor in restaurant environments to enhance culinary experiences. For example, green lighting in a restaurant's waiting area leads diners to perceive their waiting time to be shorter (Bilgili et al., 2020). Conceptually, the popularity of visual centricity might be explained by Urry's (1992) 'tourist gaze', positing that tourists engage in visually consuming the environment. The visual engagement is now further stimulated by augmented reality and social media images; often the visual sense is strongly engaged even before the actual experience (Bogicevic et al., 2019).

With a strong emphasis on visual sense, research has neglected the role of auditory, tactile, gustatory, and olfactory senses in influencing tourist experiences and how these factors are related to each other (Errajaa *et al.*, 2021; Lee *et al.,* 2019) and how they influence behaviour at the post-consumption stage. However, since the auditory and tactile senses can be seen as equally important in shaping the tourist experience (Agapito *et al.*, 2017; Qiu *et al.*, 2018), a better understanding of the interplay of sensory and non-sensory factors is necessary as "in almost all situations different senses are interconnected with each other to produce a sensed environment" (Urry, 2002, p. 146).

Auditory and tactile sense in the culinary experience

Acoustic and food-related research suggest that background music, conversations of visitors and staff, noise from kitchen sources, chair and table scraping, bottle/glass clatter, and even the restaurant's outside traffic can impact diners' perceptions (Hodgson et al., 2007; Zemke et al., 2011). Both auditory (e.g., noise) and tactile senses (e.g., temperature) are important in culinary experiences. Yet, studies examining the interplay of sensory and non-sensory factors and their

combined effects on satisfaction and behavioural intentions remain remains poorly understood in the context of food tourism experiences.

In addition, consumers perceive temperature through both the physical/factual temperature of the air or objects in the room and the sense of temperature affected by other humans, i.e., social warmth (Krishna and Schwarz, 2014). Hence, the tactile sense could be interlinked with other senses and even non-sensory factors. Design research further support this notion, linking temperature to colour schemes to convey the warmth of the product and the overall atmosphere of the experience by evoking positive emotions, such as feeling comfortable and experiencing higher levels of intimacy, thus leading to better social interactions in the setting (Motoki *et al.*, 2019). Sensory factors subconsciously influence the culinary experience (Krishna, 2012; Krishna and Schwarz, 2014; Qiu *et al.*, 2018) but 'visual-centrism' prevails in the tourism literature.

Methods

Causal relationship modelling method

A non-linear causal relationship modelling method permits forward and backward inference modelling (McKim and Turner, 1997). The method is suitable for discrete variables and their probabilistic relations, typically as the multinomial distribution is conditional on different combinations of parent nodes. Technically, causal relationship networks are represented as a directed acyclic graph (DAG) with a probability table for each node. Each node represents a domain variable with a finite set of values—each arc represents a dependency between two nodes. Formally, letting $U = \{v_1, v_2, ..., v_n\}$ be the domain with n variables in the causal relationship network, a parent set exists $Pa(v_i)$ for each node v_i. This structure captures that the instantiation of node v_i depends on the instantiations of the nodes in $Pa(v_i)$. Since the dependency can be uncertain, a set of conditional probability parameters are associated with each node. For node v_i,

the probability parameters are $p(v_i|Pa(v_i))$. A causal network describes the decomposition of a joint probability distribution $\hat{p}$ on the domain *U* into a set of conditional probability distributions:

$$\hat{p}(v_1,...,v_n) = \prod_{i=1}^{n} p(v_i|Pa(v_i))$$

Causal networks employ significance tests of conditional independence for a statistical assessment of structure adequacy and use various scores to search for the optimal model. Data records from the survey were used and the two approaches for model construction were hybridised. Hence, we adopted the *libpgm* tool (Koller and Friedman, 2009) in the Python programming platform to identify the network structure from our data. *libpgm* is a freeware that enable researchers to develop probabilistic graphical models *(see https://pythonhosted.org/libpgm/)*.

Measures

The measurement items for sensory: visual, tactile, taste, auditory (α =0.88) and non-sensory (α =0.92) factors, customer satisfaction (α =0.87) and behavioural intentions (α =0.92) were adapted from previous studies (see Table 1). Respondents had to rate their level of agreement/disagreement with a series of items using a seven-point scale (1=strongly disagree; and 7=strongly agree). To mimimise any potential common method variance (CMV) bias, the survey design and administration adhered to Podsakoff *et al.*'s (2003), recommendations as follows: complex and ambiguous terms were reduced to minimise systematic errors; the order of questions was varied to avoid respondents' assumptions of causal links; and the survey was reduced to two pages to avoid respondents' survey fatigue. In addition, the Harman's single factor test was used to test CMV. Exploratory factor analysis reveal that no single factor accounted for the majority of variance. Hence, we can conclude that CMV was not an issue in this study.

<< insert Table 1: Measures about here>>

Sampling Design and Data Collection

A purposive sampling procedure was used and for a holistic evaluation, tourists completed the survey at the end of their culinary experience at three rural ethnic restaurants in Tirol, Austria. Ethnic restaurants in rural tourism destinations were chosen as they offer unique experiences, contribute to sustainable tourism development in this area and preserve the local food culture. Ethnic restaurants offer a national cuisine and have a unique ambiance (Okumus, 2021). The questionnaires were administered face-to-face, pre-COVID-19, by a trained researcher, fluent in both German and English. Respondents were screened and local residents were excluded from the study. After identifying invalid and missing data, 304 questionnaires were retained for the analysis. The demographic profile of respondents is shown in Table 2.

<< insert Table 2: Profile of Respondents about here>>

Results

Correlation analysis between the items using the original rating values was first performed. Table 3 presents the correlation results and indicates that dependencies exist among the items. For ease of presentation, we use abbreviations of the items as listed in Table 1. Next, we carried out relationship modelling to identify the network structure. Data were then pre-processed before the modelling process; wherein sensory item scores were converted into binary presentation to represent positive and negative ratings. A hybrid method based on both the Statistical Test approach and the Evaluate + Search approach was adopted for constructing the network.

Independence testing was employed to build the initial structure and the Dirichlet distribution conjugate analysis was used for probability estimation. The constructed network is shown in Figure 1.

<<Insert Table 3: Correlation analysis of items about here>>

<<Insert Figure 1: Discovery of causal relationship network model about here>>

The analysis aimed to discover the influence of and relationship between sensory and non-sensory factors of culinary experiences and to examine how each item contributes to satisfaction and behavioural intentions (intention to return and intention to say positive things). Figure 1 depicts the network model that emerged from modelling the interplay between individual factors. This was achieved by inspecting the constructed causal network, where the interpretation focuses on the child nodes at the end of the network and then identifying their parent nodes recursively until the top of the network.

The node colour indicates different groups of sensory items. Specifically, yellow nodes starting with the *Letter E* represent the experiential-related node and pink nodes starting with the *Letter S* represent satisfaction and behavioural intentions related nodes. The description of each item is shown in Table 1. Four child nodes exist: S1, S4, S6 and E3 (see Figure 1). E3, corresponding to the culinary experience of healthy food options was excluded as it was not part of either satisfaction or behavioural intentions and our analysis focusses on S1, S4 and S6.

Modelling factors influencing overall satisfaction

The data analysis shows that the overall satisfaction (S1) is influenced by two parent nodes (see Figure 1). The *first parent node* is the expectation that served food is met ('Serve food as ordered' E13), is rooted in the waiting time before food arriving (E12) and further influenced by prompt

service (E9). The *second parent node* of satisfaction is the self-enjoyment of the customer (S3). Self-enjoyment has roots in the 'pleasure to have visited this restaurant' (S2) and is further grounded in the 'site's cleanliness' (E17). Cleanliness is routed in two parents- the sensory factors of noise levels (E16) and the appropriate room temperature (E15). Thus, based on our analysis, cleanliness, noise levels and the appropriate room temperature, represent three embodied and subconsciously perceived factors as triggers for overall satisfaction.

Modelling factors influencing intention to return

Next, results show that 'intention to return' (S4) is influenced by two parents. The *first parent node* is the 'willingness to recommend the restaurant' (S5). Interestingly, no further parents are identified here, indicating that no other sensory factor influence intention to return. The *second parent node* is 'self-enjoyment in the restaurant' (S3) and is influenced by the 'pleasure to have visited this restaurant' (S2). This factor is rooted in the culinary experience factors, including 'site's cleanliness' (E17), 'noise levels' (E15) and the 'appropriate room temperature' (E16). Together, these factors are the key triggers at the beginning of our network structure to influence a intention to return.

Modelling factors influencing intention to say positive things

Further analysis of the network shows that 'intention to say positive things about this restaurant' (S6) is influenced by four parent nodes. The *first parent node* is the 'pleasure to have visited this restaurant' (S2). Similar to the previous analysis, S2 is influenced by 'cleanliness' (E17), 'noise levels' (E15) and 'room temperature' (E16). The three remaining nodes are 'intention to recommend this restaurant to friends or others' (S5), 'atmosphere authenticity' (E18) and the 'variety of menu items' (E2). In summary, the causal relationship network that leads to 'intention

to say positive things' (S6) is initiated by culinary experience factors, cleanliness, noise levels, room temperature, atmosphere authenticity and variety of menu items.

Discussions and Implications

This study provides three important theoretical implications. *First,* we identify the importance of sensory factors in tourists' culinary experiences and their backward inferences, highlighting a complex structure of interactions. Sensory factors are important antecedents of the tourist experience but remain underestimated and undetected (e.g., Agapito, 2020; Agapito *et al.*, 2017; Errajaa *et al.*, 2021; Qiu *et al.*, 2018). Findings show that the sensory factors of *cleanliness*, *appropriate noise levels* and the *appropriate room temperature* at the top of the causal chain as triggers for satisfaction, intention to Our results support embodied cognition theory, showing the importance and relevance of sensory factors. It is therefore important for studies on food tourism experiences to capture both sensory (subconsciously processed) and non-sensory (consciously cognitively processed) factors. In addition, unlike previous studies (e.g. Liu and Jang, 2009; Qiu et al., 2018) modelling sensory factors as part of a latent dimension, our research shows the merits of delineating the effect of individual variables.

Second, we address an important gap in the literature by examining the interplay between sensory and non-sensory factors on behavioural outcomes. Tourists' willingness to say positive things about the restaurant to others is triggered by the level of cleanliness, appropriate noise levels, and appropriate room temperature. The intention to say positive things is also linked to atmosphere authenticity, menu variety and intention to recommend to friends. Similar to previous studies (e.g. Chang et al., 2011, Liu and Jang, 2009; Ryu and Han, 2011) establishing the positive influence of food quality (e.g., variety of menu) and physical environment on word-of-mouth, our

findings extend existing theorisations by highlighting the interrelated nature of different facets of word-of-mouth. In particular, a chain of factors (sensory and non-sensory) explains overall satisfaction, intention to return and willingness to say positive things.

Third, our review of the literature shows extant tourism studies that capture sensory experiences often focus on the visual sense. Our results provide evidence of the need to shift away from exploring only the impacts of visual stimuli (e.g., lighting and colour). Importantly, our results reveal that the auditory and tactile senses are equally important triggers as the visual sense in culinary experiences, given that noise levels and room temperature are amongst the key triggers. As such, the results extend the existing 'visual-centric' sensory experience literature (Agapito *et al.*, 2017; Qiu *et al.*, 2018) and support to the call for more research to deeper explore the multi-sensory nature of the culinary experience (Pezenka and Weismayer, 2020).

Managerial implications

Our study offers important implications for managers, specifically in the context of rural destinations and food tourism. We highlight the need for hospitality managers to understand that different senses play varying roles in tourist's culinary journey and in determining post-consumption behaviours. According to our findings, both satisfaction and intention to return are determined by noise, room temperature, and cleanliness, highlighting the interplay of the visual, auditory, and tactile senses. Managers and chefs typically concentrate on the taste of food, as these form the essential value proposition of a restaurant's business model. Yet, restaurant managers can benefit from experimenting with other stimuli such as temperature, music, smells and other "off plate" sensory factors to enhance the culinary experience. To implement 'sensory innovations', restaurants can use service design principles to create the optimal experience for consumers. While

cleanliness is a basic 'hygiene' factor for restaurants, *appropriate room temperature* and *noise level* can determine whether customers are satisfied and intend to return.

In terms of behavioural intentions, other sensory and non-sensory factors are at play. According to our findings, beyond the aforementioned attributes, *atmosphere authenticity* and the *variety of menu items* positively impact post-consumption behaviours. These non-sensory factors confirm that different post-consumption behaviours are triggered by different set of factors. Hence, customer experience management requires a holistic approach of integrating both sensory and non-sensory factors. For ethnic restaurants in particular, sensory cues in managing customer experience need to support the visual, tactile and auditory dimensions alongside non-sensory factors. The uniqueness of food, service and the physical environment that conveys cultural elements in ethnic restaurants can be amplified to positively impact all the senses.

This study also has practical implications in terms of designing the servicescape. Individual elements, such as indoor room temperature, should be managed so that consumers perceive the restaurant to be comfortable. Touching warm or cold objects, colour schemes and the perception of social 'temperature' are important too. Here, the importance of social warmth, triggered by interpersonal interactions with friendly staff or fellow tourists (Krishna and Schwarz, 2014; Williams and Bargh, 2008), is also an important sensory element to consider. In terms of balancing noise, identifying the appropriate level of music can complement guests' conversations (Kelman, 2010). Overall, managers should "meticulously map out the effect each cue will have on the five senses—visual, auditory, tactile, gustatory, olfactory—taking care not to overwhelm guests with too much sensory input" (Pine and Gilmore, 1999, 61).

Conclusions, limitations and future research

Our study addresses the interplay between sensory and non-sensory factors in the context of food tourism experiences. Using causal relationship modelling, we show that sensory and non-sensory factors are related in explaining overall satisfaction, intention to return and intention to say positive things. Prior research predominantly focused on exploring the impacts of visual stimuli (Agapito *et al.*, 2017; Qiu *et al.*, 2018), but this study sheds light on the importance of both auditory and tactile senses within the interplay of sensory and non-sensory factors. Specifically, noise levels and room temperature are key, leading to satisfaction and positive behavioural responses.

Existing studies have offered a range of factors explaining customer satisfaction and behavioural intentions in the context of culinary experiences. Yet, given the embodied nature of sensory factors, the complexities involved with measurement and the strong focus on linear methods, the predictive power of the interrelatedness among food quality, the physical environment, and staff interactions with customers was rather limited (Han and Ryu, 2009). Within the context of ethnic restaurants, we highlight the role of sensory embodied and subconsciously perceived factors and their relationships with consciously perceived factors. Contrary to studies with a focus on deductive reasoning and hypotheses testing, our causal relationship modelling approach focusses on exploring the interplay among variables in an abductive way to provide a holistic understanding of tourists' culinary experiences.

There are some limitations that can be addressed in future research. *First*, sensory factors, consistent with prior research (e.g. Chang et al., 2011; Kim et al., 2021) were measured subjectively with an assumption that individuals have flexible responses in responding to sensory information (Schaffner et al., 2023). Acknowledging that senses could be captured objectively, we encourage future studies to engage in interdisciplinary research with neuroscientists and/or biologist adopting sophisticated methods to accurately measure the sensory effects from the

environment, for example using photodetectors and laboratory experiments (Wan et al., 2020). *Second*, qualitative discourse could be employed to capture the embodied nature of tourist experiences. This approach could allow researchers to link socio-cultural meaning to sensory embodiment (Agapito, 2020) or investigate the discursive development of the role of the sensory experiences in the customer journey, and possibly elicit links to positive and negative touchpoints. *Finally*, future research should replicate the study in other restaurants contexts. Ethnic restaurants offer typical national cuisine and have an ambiance that is unique to their specific culture. Tourists who choose ethnic restaurants usually seek unique cultural experiences, novelty and unfamiliar flavours (Okumus, 2021). Hence, our findings might not necessarily be generalisable for tourist experiences in non-ethnic restaurants e.g., in exclusive, gourmet culinary experiences, where premium quality might be more important for high customer satisfaction and positive behavioural intentions.

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Figure 1: Discovery of causal relationship network model

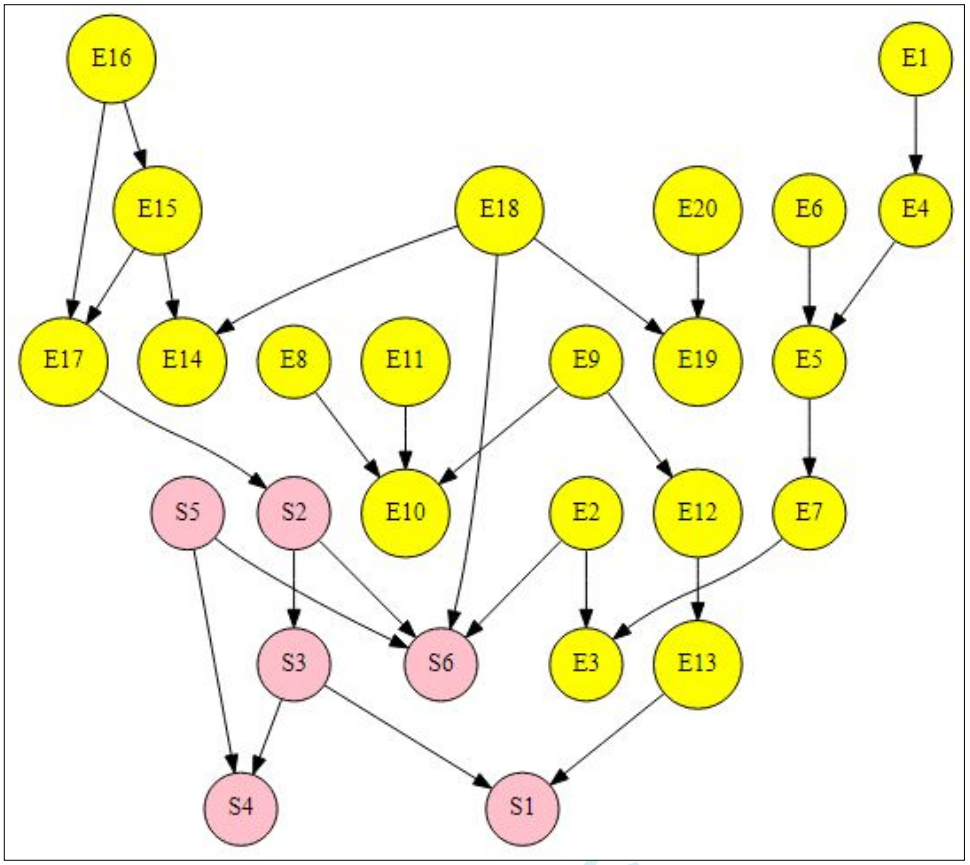

Table 1: Measures

Category	ID	Item	References
Culinary Experiences			
Sensory (visual)	E1	Food presentation	Hwang and Ok, 2013
Non-Sensory	E2	Variety of menu items	Mason and Paggiaro, 2012
Non-Sensory	E3	Healthy options	Namkung and Jang, 2007
Sensory (taste)	E4	Food taste	Hwang and Ok, 2013
Non-sensory	E5	Food freshness	Tsaur and Lo, 2020
Sensory (tactile)	E6	Appropriate food temperature	Namkung and Jang, 2007
Sensory (taste)	E7	Drink taste	Namkung and Jang, 2007
Non-sensory	E8	Friendly and courteous employees	Chang *et al.,* 2011
Non-sensory	E9	Prompt service	Chang *et al.,* 2011
Non-sensory	E10	Helpful employees	Tsaur and Lo, 2020
Non-sensory	E11	Employees have product knowledge	Liu and Jang, 2009
Non-sensory	E12	Waiting time before food arriving	Jin *et al.*, 2020
Non-sensory	E13	Food served as ordered	Jin *et al.*, 2020
Sensory (visual)	E14	Interior design and décor	Tsaur and Lo, 2020
Sensory (tactile)	E15	Appropriate room temperature	Liu and Jang, 2009
Sensory (auditory)	E16	Noise level	Chang *et al.*, 2011
Sensory (visual)	E17	Restaurant cleanliness	Kim *et al.*, 2021
Non-sensory	E18	Atmosphere authenticity	Chang *et al.*, 2011
Non-sensory	E19	Food authenticity	Oh and Kim, 2020
Non-sensory	E20	Menu presentation	Hwang and Ok, 2013
Outcomes			
Satisfaction	S1	I am satisfied with my experience at this restaurant	Ryu *et al.,* 2012
Satisfaction	S2	I am pleased to have visited this restaurant	Ryu *et al.,* 2012
Satisfaction	S3	I really enjoyed myself at this restaurant	Ryu *et al.,* 2012
Behavioural Intentions	S4	I would like to come back to this restaurant in the future	Namkung and Jang, 2009
Behavioural Intentions	S5	I would recommend this restaurant to my friends or others	Namkung and Jang, 2009
Behavioural Intentions	S6	I would say positive things about this restaurant to others	Namkung and Jang, 2009

Table 2: Profile of Respondents

Attribute	Value	Proportion (%)
Gender	Female	50
	Male	50
Age	29 and younger	33
	30 - 49	44
	50 and older	23
Home country	Germany	49
	Netherlands	16
	Switzerland	10
	Austria	8
	England	5
	Denmark	4
	Other	8

Table 3: Correlation analysis of items

	E1	E2	E3	E4	E5	E6	E7	E8	E9	E10	E11	E12	E13	E14	E15	E16	E17	E18	E19	E20	S1	S2	S3	S4	S5	S6
E2	.545*																									
E3	.541*	.544*																								
E4	.638*	.432*	.534*																							
E5	.588*	.374*	.499*	.727*																						
E6	.521*	.329*	.419*	.645*	.631*																					
E7	.497*	.340*	.363*	.590*	.583*	.557*																				
E8	.525*	.406*	.418*	.412*	.497*	.431*	.385*																			
E9	.495*	.334*	.398*	.435*	.438*	.415*	.368*	.652*																		
E10	.532*	.400*	.474*	.488*	.529*	.439*	.444*	.780*	.662*																	
E11	.473*	.339*	.430*	.504*	.532*	.447*	.391*	.628*	.499*	.685*																
E12	.441*	.361*	.368*	.451*	.413*	.314*	.311*	.485*	.694*	.512*	.463*															
E13	.463*	.373*	.369*	.478*	.474*	.406*	.373*	.537*	.453*	.535*	.458*	.541*														
E14	.487*	.382*	.391*	.430*	.424*	.391*	.326*	.382*	.400*	.400*	.345*	.460*	.400*													
E15	.406*	.299*	.311*	.344*	.386*	.375*	.364*	.344*	.335*	.418*	.318*	.406*	.361*	.754*												
E16	.419*	.327*	.384*	.382*	.391*	.391*	.382*	.287*	.348*	.406*	.279*	.368*	.310*	.609*	.601*											
E17	.453*	.351*	.390*	.519*	.506*	.504*	.353*	.349*	.387*	.400*	.456*	.444*	.409*	.610*	.550*	.637*										
E18	.477*	.379*	.416*	.444*	.460*	.411*	.397*	.417*	.455*	.472*	.389*	.470*	.415*	.696*	.575*	.597*	.656*									
E19	.570*	.414*	.424*	.567*	.585*	.475*	.487*	.420*	.476*	.502*	.458*	.451*	.491*	.580*	.523*	.496*	.598*	.734*								
E20	.492*	.354*	.394*	.521*	.549*	.438*	.398*	.407*	.423*	.455*	.396*	.432*	.497*	.526*	.434*	.450*	.534*	.653*	.768*							
S1	.446*	.290*	.354*	.523*	.512*	.444*	.428*	.441*	.388*	.441*	.371*	.361*	.417*	.360*	.326*	.349*	.404*	.464*	.536*	.543*						
S2	.476*	.408*	.398*	.502*	.444*	.404*	.347*	.450*	.429*	.432*	.433*	.420*	.393*	.476*	.443*	.399*	.520*	.505*	.501*	.441*	.648*					
S3	.432*	.327*	.372*	.512*	.539*	.451*	.406*	.424*	.391*	.436*	.424*	.362*	.390*	.359*	.367*	.380*	.451*	.406*	.498*	.468*	.678*	.729*				
S4	.464*	.361*	.380*	.556*	.556*	.440*	.427*	.425*	.426*	.403*	.454*	.392*	.366*	.445*	.402*	.358*	.511*	.486*	.542*	.501*	.602*	.653*	.647*			
S5	.475*	.343*	.378*	.541*	.542*	.454*	.450*	.431*	.422*	.447*	.484*	.378*	.357*	.453*	.417*	.384*	.505*	.521*	.582*	.518*	.552*	.631*	.637*	.813*		
S6	.446*	.403*	.451*	.521*	.535*	.419*	.408*	.424*	.439*	.448*	.435*	.435*	.338*	.487*	.427*	.430*	.496*	.549*	.515*	.478*	.538*	.683*	.620*	.738*	.830*	
Mean	4.58	4.61	4.27	4.76	4.72	4.65	4.84	4.89	4.82	4.82	4.74	4.78	5.18	4.60	4.58	4.33	4.87	4.44	4.60	4.53	4.56	4.51	4.61	4.59	4.46	4.44
SD	1.01	0.98	1.04	1.08	1.07	1.18	1.04	0.99	1.24	0.99	1.07	1.28	1.08	1.13	1.14	1.12	1.00	1.11	0.97	1.05	1.06	1.22	1.09	1.28	1.37	1.37

*Correlation is significant at the 0.01 level