The influence of special dietary needs on tourist satisfaction and behavioral intention: Satisfiers or Dissatisfiers?

Abstract

In a globalized world, incoming tourists bring with them a variety of expectations. As destinations are coming to accept the variability of consumer needs, destination managers seek to identify additional factors that can determine tourists' evaluations and intentions. This study promotes the ability to satisfy tourist dietary needs as an antecedent factor influencing the experience outcomes. It is among the first to demonstrate the links between diverse tourist dietary needs, satisfaction, and behavioral intentions. We found that all three groups of dietary needs (religious, medical, lifestyle) have an effect on satisfaction and behavioral intentions. Our results confirm that the relationship between tourist dietary needs and destination evaluation and intentions is not symmetrical. The higher the perceived importance of tourists' dietary needs, the more likely they are to be satisfied with a destination that can cater to their needs. Satisfied tourists are more likely to revisit and recommend the destination to others. However, the effects of dietary needs on dissatisfaction are not significant. The destination's inability to satisfy dietary needs does not necessarily reduce willingness to recommend or revisit. The results of this study support the notion that destination's dietary preparedness is associated with better experience outcomes. The study concludes with important implications for destination managers.

Keywords: destination evaluation, behavioral intention, dietary needs, satisfiers/dissatisfiers, religious/medical/lifestyle diet, Singapore.

1. Introduction

The financial constraints imposed by the recent pandemic require that tourism practitioners seek new ways to increase the effectiveness and sophistication of marketing efforts while utilising existing resources. For many destinations, an important tourism resource is food (Henderson, 2004; Okumus, 2020). The relationship between food and tourism is a subject of increasing attention (Ellis et al., 2018), with food tourism making considerable progress over the past two decades in both academia and the industry (Okumus, 2020). Food consumption is a source of many behavioral adaptations (Rozin, 1999). Perhaps, this explains why despite continuous

research efforts, there is still a large gap in our knowledge of how experiencing food shapes tourists' perceptions of a destination and their future behaviors (Choe & Kim, 2018).

In tourism literature, the perception of food as an indisputable attraction has been challenged in recent years by stressing the complications and impediments experienced by tourists while traveling (Cohen & Avieli, 2004; Huang et al., 2019). It remains open as to how different aspects of food related experiences affect destination evaluations and future intentions. This research investigates the multifarious nature of food-related experiences, while paying close attention to tourists' needs. Needs in a food tourism context encompass a variety of aspects, including food safety and hygiene issues (Tarulevicz & Ooi, 2019), hedonic food attributes (Mak et al., 2012), as well as authenticity and experiential value (Radomskaya, 2018; Sims, 2009). However, the internal self-regulation practices such as special dietary needs remain relatively understudied in tourism and hospitality research (Huang et al., 2019; Oktadiana et al., 2020). This is surprising, since evidence from the dietary preference literature (Bere & Brug, 2009; Radnitz et al., 2015) suggests that dietary needs are essential to a healthy lifestyle and an important contributor to overall wellbeing.

With the tourism industry being increasingly globalized, incoming tourists bring with them a variety of needs and expectations regarding food selection and consumption. These expectations might not necessarily align with the food culture and dietary choices available at the host destination. It has been pointed out (Bakar et al., 2018) that the ability to satisfy diverse needs is increasingly valuable as destinations are coming to accept the variability of consumer expectations. Destination managers need to further develop knowledge about food-related experiences and identify additional factors that can determine tourists' behavior, evaluations, and intentions.

This study is set in the context of Singapore. For Singaporeans, food carries strong national connotations and has been promoted as one of several compelling reasons for visiting Singapore (Henderson et al., 2012; Tarulevicz & Ooi, 2019). The addition of Singapore hawker culture to UNESCO's list of the Intangible Cultural Heritage of Humanity further reaffirmed the value of food for Singapore tourism development. Although food is an integral part of the city brand experience, some further challenges still exist (Oktadiana et al., 2020). The present research argues that for Singapore, the ability to understand and cater to diverse dietary needs may be an important element in attracting tourists and securing repeat visitation in a steadily competitive tourism-landscape.

The central theoretical lens we apply to study the potential of tourists' behavior and intentions being influenced by tourists' dietary needs is that of motivation theory, specifically Herzberg, Mausner, and Snyderman's (1959) two-factor theory. In tourism literature, Herzberg et al.'s (1959) two-factor theory has been mainly concerned with motivations and attitudes of employees, with limited application to consumer behavior. Considering this gap in the extant literature and the limited body of research available on tourist dietary needs, this paper aims to investigate the potential for dietary needs to be an important determinant of behavioral intentions. Examining

tourists' dietary needs and their effect on food destination evaluations and behavioral intentions in the Singapore context contributes to the further development of the food and tourism-related service industry in Singapore.

This study takes a closer look at tourists' behavior and post-trip evaluations. It considers three types of dietary needs – religious dietary needs, medical dietary needs, and lifestyle dietary needs, – to bring new insights into understanding the potential effect of tourist needs on the fundamental satisfaction–behavioral intention link. The paper suggests that dietary needs - hypothesized to be determinants of behavioral intentions - are mediated by satisfaction and/or dissatisfaction. The research model is tested on a large data set of international tourists.

The next section will be dedicated to the review of the literature on dietary needs and motivation theories. The researchers will then proceed to develop and present a set of hypotheses. Following that, the methods and results will be outlined. Finally, the implications for theory and practice are discussed.

2. Dietary needs and travel eating behavior

Diets, as a more functional attribute of food consumption, participate in the management of food-related behaviors (Kearney, 2010; Lacour et al., 2018). In the broad sense, dietary needs are requirements that need to be fulfilled in order to meet dietary goals that are congruent with cultural and personal motives as well as physiological needs. Behaviors that contribute to diet adherence are nuanced and complex. For many, a diet is an essential aspect of a healthy lifestyle (Ayala et al., 2008) and an important contributor to wellbeing (Ares et al., 2014).

Eating habits have an important role to play in disease prevention and health management (De Schutter et al., 2020; Nugent et al., 2018). The desire to eat healthy is often an important consideration in food spending (Henderson et al., 2009). Studies show that tourists' attitudes towards healthy eating have an influence on their travel eating behavior (Chang, 2017). Preliminary evidence suggest that health considerations can be a motivating factor for tourists to consume local food (Chang, 2017; Kim et al., 2009). That being said, health considerations can also limit travel options and be a reason for nonparticipation (Popp et al., 2021). Among the many practices that participate in health management, medical diets need be taken most seriously and enabled properly. For the benefit of health, economy and environment, the option to eat according to one's dietary needs should be made more accessible and be supported in all settings, including travel.

Meeting dietary needs entails more than a desire to meet health goals. In the cultural context, the observance of sociocultural practices such as food avoidance and dietary restrictions is related to the perceptions of self-group similarity, group identity, and belonging (Chakona & Shackleton, 2019; Meyer-Rochow, 2009). Among cultural dietary practices, religious diets - diets based on religious observances or beliefs - are most prominent (Chakona & Shackleton, 2019). Studies suggest that religious dietary practices impact food purchasing behavior and greatly influence food consumption patterns (Shipman & Durmus, 2017). Given their importance, it is not surprising that

religious dietary needs can exert influence on tourists' experiences and intentions (Bakar et al., 2018; Han et al., 2021).

In the matter of lifestyle choices, a decision to follow a diet can be intertwined with an individual's sense of identity and ethical responsibility (Radnitz et al., 2015). Increasingly, lifestyle diets such as vegetarianism or sustainable seasonal diets are gaining in popularity (Bere & Brug, 2009; Kim & Hall, 2020). Lifestyle choices that encompass sustainability values, animal welfare and other ethic emerging in society have been shown to influence travel behaviors and drive sustainable–responsible tourism discourse (Fennell, 2013; Testa et al., 2019).

The special significance of dietary needs for tourism and hospitality lies in the growing global interconnectedness, the sensitivity to multiculturalism, health literacy, and growing responsibility toward sustainability and ethical consumption. The growing number of ethnically diverse travellers requires that destinations embrace the cultural, religious and spiritual needs of diverse tourists (Almerico, 2014). The changing attitudes toward healthy eating increasingly affect health-diet attitudes and corresponding behaviors (Graham & Laska, 2012). The demand for more environmentally sensitive and sustainable practices is changing the way tourists engage with destinations (Kim & Hall, 2020; Testa et al., 2019). The study of dietary needs should be an integral part of the destination development strategy. Better understanding of dietary expectations will offer invaluable insights for practitioners and tourism stakeholders interested in engaging in and maximizing the economic impact and other important benefits of food tourism.

3. Theoretical foundations and hypotheses development

Tourism literature often refers to food experiences as determinants of trip satisfaction (Henderson, 2004, 2009) and behavioral intentions (Rousta & Jamshidi, 2020; Soltani et al., 2020). The general consensus is that the quality of food experiences leads to overall satisfaction and that the effect is linear and symmetrical. Yet at a closer glance, the relationship is not as straightforward.

A study by Mannaa (2020) found that the presence of halal food, for example, does not have a significant impact on Muslim travellers' overall satisfaction, even though it affects the travellers' intentions to revisit the destination. In the hospitality settings, the presence of vegetarian dietary options has a significant positive effect on vegetarian customers' satisfaction and revisit intentions (Choi et al., 2021). These examples are plentiful, and suggests that different dietary needs do not necessarily elicit tourists' satisfaction in a constant manner. A possibility of an asymmetrical relationship between dietary needs and satisfaction requires further exploration.

Herzberg et al.'s (1959) two-factor theory suggests a possibility of asymmetrical relationship between service attributes and satisfaction. That is, an attribute can be more sensitive to dissatisfaction than to satisfaction, and vice versa. The theory suggests that attributes that behave as motivators have a direct relationship with satisfaction and improve satisfaction if met. Attributes that behave as hygiene factors do not necessarily enhance satisfaction even if they are adequately managed, yet they can cause dissatisfaction when they are not met (Park et al., 2020).

While numerous studies have examined the asymmetrical effect of attributes on satisfaction in various areas, the understanding of dietary needs through an asymmetrical relationship with satisfaction is yet to be achieved.

Further analysis revealed a link between dietary needs and behavioral intentions. For example, the provision of Halal food at a non-Islamic destination has a positive impact on tourist satisfaction and can lead to increased destination attachment and visitors' retention (Han et al., 2021). Battour et al. (2021) state that the destination's inability to cater to religious dietary needs may result in an increased anxiety among Muslim travelers and potentially lead to dissatisfaction and reluctance to revisit. A study of vegan traveller behavior suggests that a wider availability of vegan products on the menu can increase satisfaction and improve travel participation (Barrero Toral, 2016). A study of vegetarian travellers' experience found that negative emotions while on trips are common due to dietary restrictions, and that the destination's ability to satisfy dietary requirements could decrease travel constraints and enhance intentions to visit (Huang et al., 2019).

Only the effects of individual diets have been reported in the literature so far. It is yet to be seen whether different groups of dietary needs elicit significant satisfaction/dissatisfaction responses and whether any one response is more pronounced than the other. It is also important to pay more attention to tourism settings in the study of dietary needs. With the majority of studies focusing on restaurant attributes and the availability of different menu options, few explore destination 'dietary' performance.

The above suggests a link between destination evaluations and behavioral intentions and the destination's ability to cater for tourists' dietary needs. The satisfaction or dissatisfaction with a destination can mediate the relationship between types of dietary needs and tourists' behavioral intentions. Given these considerations, the following hypotheses are posited:

H1: Tourists who place more importance on religious dietary needs will be; a) more satisfied with a destination that can cater to this need, and b) more dissatisfied with a destination that cannot cater to this need.

H2: Tourists who place more importance on medical dietary needs will be; a) more satisfied with a destination that can cater to this need, and b) more dissatisfied with a destination that cannot cater to this need.

H3: Tourists who place more importance on lifestyle dietary needs will be; a) more satisfied with a destination that can cater to this need, and b) more dissatisfied with a destination that cannot cater to this need.

According to Boninger, Krosnick, and Berent's (1995) model of attitude importance, the extent to which an individual ascribes significance to an attitude might influence thinking and action (Holbrook et al., 2005). Chen and Petrick (2016) note that perceived importance can be useful in understanding the dynamics behind intentions in tourism. Literature also suggests that perceived importance is a contributory factor to dietary adherence and that better dietary adherence leads to higher quality of life scores (Hall et al., 2009; Usai et al., 2007). The improvements in quality of

life prompted by holiday experiences are driving elements for positive future intentions (Di-Clemente et al., 2019). Considering all of the above, the researchers focus on perceived dietary importance as a crucial factor in the attitude-intentions relationship. Prominent among loyalty intentions are behavioral intentions to revisit the destination and propensity to recommend the destination to others (Chen & Gursoy, 2001; Coetzee et al., 2019). As such, this study utilises tourists' willingness to recommend (WTR) and willingness to revisit (WTV) as indicators of intentions. This leads to the formation of the following hypotheses:

H4: Tourists who are satisfied with the destination's ability to cater to their needs; a) are more likely to recommend the destination to family and friends, and b) are more likely to revisit.

H5: Tourists who are dissatisfied with the destination's ability to cater to their needs; a) are less likely to recommend the destination to family and friends, and b) are less likely to revisit.

4. Methodology

4.1 Sampling

A quota sampling method was used to collect data from four tourist market segments in Singapore. The choice was guided by the Singapore Tourism Board (2019) performance report, where consumer markets with highest food and beverage (F&B) spending were identified as India, USA, UK and Australia, with 15%, 14%, 14% and 12% of overall spending respectively. The use of F&B spending as a criterion when studying food-related behaviors is a common practice in tourism literature (Knollenberg et al., 2021; Williams et al., 2019). The researchers checked for non-response bias by analysing the sociodemographic characteristics of responders. A comparison of the first and last waves of responses revealed no statistically significant differences. The sociodemographic characteristics of respondents were fairly representative of the total population. Nonresponse bias does not appear to be a critical issue.

Following the calculations of Bujang et al. (2018) and sampling recommendations provided by Hair et al. (2014), a sample size of above 500 was estimated to derive the statistics that represent the parameters in the targeted population. A preliminary satisfactory quota for each stratum was defined as 150 per country. Overall, 660 valid responses were collected and analysed (slightly above the defined quota). Table 1 provides an overview of the respondents' profiles.

Table 1. Respondents' profiles

Demographic characteristics			Percentage
GENDER	N=655	Male	56.2
		Female	43.0
AGE	N=660	18-24	23.0
		25-44	53.3
		45-64	17.0
		65 or older	6.7
INCOME	N=660	< US$60,000	39.1
		US$60,000 - $120,000	47.9
		> US$120,000	13.0
COUNTRY	N=660	Australia	25
		UK	25
		USA	25

		India	25
RELIGION	N=660	Christian	41.4
		Hindu	18.9
		Muslim	7.0
		Non-religious	26.2
		Other	6.5
EDUCATION	N=660	Less than high school	3.8
		High school graduate	25.0
		Undergraduate	34.1
		Postgraduate	33.5
		Doctorate	3.6
TRAVEL FREQUENCY	N=660	Less than once a year	12.0
		Once a year	33.3
		2-4 times a year	45.8
		More than 4 times	8.9
ETHNICITY	N=660	Caucasian	53.2
		African American	7.7
		East Asian	5.0
		South Asian	21.4
		Other	12.7

4.2 Measures

The questionnaire was developed in English and consisted of four groups of questions. The first group collected demographic information (see Table 1). The second group inquired after dietary habits and dietary needs (e.g., “What factors shape your food preferences?”, "Do you have any dietary preferences or requirements?”, “Do you fast?”, “Are you following any medical diets?”). It also collected information on food avoidance behaviors (e.g., "Which animal foods do you avoid, if any?", “Do you avoid [wheat/soy/milk /eggs/nuts/seafood ...] in your meals?”). The choice of dietary questions was guided by the UCL's eating behavior questionnaire (UCL, 2019), the 2014 FDA Health and Diet Survey (Zhang et al., 2016), and a survey of self-reported food allergies (Ali, 2017). The development of items measuring religious dietary needs was guided by Kwon and Tamang (2015) and Eliasi and Dwyer (2002) studies on religious foods and religious observances. The items measuring lifestyle dietary needs were developed by revising studies of Lacour et al. (2018), Nie & Zepeda (2011) and Huang et al. (2019).

The third group assessed the role of dietary needs in daily and travel experiences (e.g., "Evaluate the importance of medical dietary needs in your daily experiences ", "Evaluate the importance of religious dietary needs in your travel experiences" – see Table 2). The contrast between daily (or everyday life) and travel experiences is an important construct in sociological understanding of the tourist behavior as it highlights the relationship between ordinary and extraordinary experiences (McCabe, 2002). To gauge the role of dietary needs in daily and travel experiences, a five-point Likert scale was utilized unless otherwise stated. The questions used importance and agreement scale (Evaluate the importance [Not at all to Extremely], Evaluate the statement [Strongly agree to Strongly disagree]). Additional questions asked how tourists managed their dietary needs while in Singapore.

The last group was dedicated to satisfaction questions (e.g., “Evaluate your satisfaction with the availability of the medical dietary options in Singapore”; “How would you evaluate Singapore's

247 performance in providing special dietary options to visitors with religious dietary needs?"). This
248 group also includes the 'intention questions' such as willingness to revisit and willingness to
249 recommend (see Table 2). The questionnaire was pilot tested for content validity and clarity.

250 *4.3 Common method variance (CMV)*

251 When self-report questionnaires are used to collect data at the same time from the same
252 participants, common method variance (CMV) may be a concern. To reduce the likelihood of bias
253 generated by CMV, procedural steps were taken into consideration when designing the
254 questionnaire, including the use of different scale types as well as mixing the type and order of the
255 questions. To control for any possible bias, a post hoc Harman one-factor analysis was used, with
256 results suggesting no problem in the data as the total variance extracted by one factor was
257 34.808%, less than the recommended threshold of 50% (Chang et al., 2010). In addition, the
258 occurrence of a variance inflation factor (VIF) greater than 5 was proposed as an indication of
259 pathological collinearity (Kock, 2015). Since all VIFs resulting from a full collinearity test were < 5,
260 the model was considered free of CMV.

261 *4.4 Variables*

262 The skewness and kurtosis values for diets, satisfaction and intention items are presented in
263 Table 2. The skew and kurtosis indices for most items fell within the suggested range of –1 to 1.
264 Excess skewness and kurtosis values for dissatisfaction item [DISSAT] indicate a slight departure
265 from symmetry and presence of extreme outliers compared to a normal distribution. The
266 constructed DISSAT variable (Likelihood of avoiding a destination if dietary needs are not met) was
267 recoded from the survey items that ask about dietary needs' role in travel decision-making, and
268 decision to avoid visiting a destination if dietary needs are not met.

269 Table 2. Descriptive statistics

	Mean	Std. Dev.	Skewness	Kurtosis
Evaluate the importance of medical dietary needs in your daily experiences	3.36	1.329	-0.219	-1.173
Evaluate the importance of medical dietary needs in your travel experiences	3.39	1.296	-0.282	-1.095
Evaluate the importance of religious dietary needs in your daily experiences	3.39	1.502	-0.364	-1.317
Evaluate the importance of religious dietary needs in your travel experiences	3.38	1.517	-0.327	-1.367
Evaluate the importance of lifestyle dietary needs in your daily experiences	3.4	1.318	-0.315	-0.999
Evaluate the importance of lifestyle dietary needs in your travel experiences	3.34	1.381	-0.24	-1.214
Evaluate Singapore's performance in providing special dietary options to visitors with religious dietary needs [SAT1]	3.68	1.184	-0.828	-0.005
Evaluate Singapore's performance in providing special dietary options to visitors with medical dietary needs [SAT2]	3.68	1.067	-0.637	-0.123
Evaluate Singapore's performance in providing special dietary options to visitors with lifestyle dietary needs [SAT3]	3.92	1.081	-0.949	0.385
Evaluate your satisfaction with the availability of the religious dietary options in Singapore [SAT4]	3.54	1.256	-0.584	-0.562

Evaluate your satisfaction with the availability of the medical dietary options in Singapore [SAT5]	3.57	1.141	-0.555	-0.308
Evaluate your satisfaction with the availability of the lifestyle dietary options in Singapore [SAT6]	3.76	1.133	-0.746	-0.097
Likelihood of avoiding a destination if dietary needs are not met [DISSAT]	1.9	1.076	1.269	1.153
To what extent does the ability to satisfy dietary needs affect your decision to travel back to Singapore? [WTV]	3.64	1.216	-0.496	-0.603
To what extent does the ability to satisfy dietary needs affect your decision to introduce Singapore to your friends and family as a travel destination? [WTR]	3.48	1.222	-0.171	-0.82

The reliability analysis was performed for four reflective constructs: religious, medical, and lifestyle dietary needs and satisfaction. Indicator reliability, average variance extracted, and internal consistency serve to assess the reliability of reflective measurements (Table 3). The internal consistencies are satisfactory with values above the threshold of .70, and AVE >0.5. All α values were above 0.7 critical level. The discriminant validity is established on the basis of the heterotrait–monotrait ratio of correlations (Hair et al., 2019). All HTMT values are below the critical and conservative value of .80.

Table 3. Reflective constructs

Variable	Indicator	Loading	*t* Value, Two-Sided Test	Internal consistency	AVE
Criterion		*≥0.7*	*2.58 (1%)*	*≥0.7*	*≥0.5*
Medical d/n*	Daily Importance	0.957	150.813	0.905	0.913
	Travel Importance	0.954	124.996		
Religious d/n*	Daily Importance	0.945	63.307	0.88	0.893
	Travel Importance	0.945	73.308		
Lifestyle d/n*	Daily Importance	0.952	155.763	0.876	0.889
	Travel Importance	0.934	76.308		
Satisfaction	SAT 1	0.854	62.999	0.927	0.734
	SAT 2	0.84	48.551		
	SAT 3	0.842	59.437		
	SAT 4	0.873	89.439		
	SAT 5	0.873	80.465		
	SAT 6	0.857	58.298		

**Dietary needs*

The dissatisfaction and intention variables (WTV, WTR) employ single-item constructs. The possibility for using single-item constructs for attitude measures and measures that reflect personal involvement was described by Bergkvist and Rossiter (2007), who argue that single-item measures of such constructs are equally as valid as multiple-item measures. Moreover, Drolet and Morrison (2001) state that additional items do not necessarily provide more information, and that one or two good items can outperform a scale with multiple items.

4.5 Data analysis

The Partial Least Squares Structural Equation Modelling (PLS-SEM) with IBM SPSS Statistics 26 were used to analyse data. PLS-SEM is widely used in tourism and travel research (Assaker et al., 2015). Its ability to produce higher statistical power is quite useful for exploratory research that

examines less developed or developing theory (Hair et al., 2019). This method is often viewed as an alternative to CB-SEM, which has numerous restrictive assumptions (Hair et al., 2011). PLS-SEM has been found to work well with latent variables such as satisfaction and loyalty (Ahrholdt et al., 2017; Wong, 2013). It can deal with complex model structures and does not demand normally distributed data.

5. Results and discussion

Among the many demographic factors (see Table 1), only country, religion, and ethnicity show the strongest correlation to dietary needs (Cramer's V >0.45, very strong). The religious dietary needs were most common among Muslim and Hindu respondents, 84.8% and 70.4% respectively. The non-religious respondents had no religious dietary requirements but reported having lifestyle (35%) and/or medical (20%) dietary requirements. South Asian and 'Other' (Buddhist, Judaist, Taoist, Spiritualists) respondents were twice more likely to report religious dietary requirements compared to other groups. The majority of African American and Caucasian respondents reported following medical (51% and 28%, respectively) and/or lifestyle (51% and 38%, respectively) diets. Respondents from India by far had the most dietary requirements, specifically 58% reported having at least one dietary need, followed by USA (30%) and UK (21%). The respondents from Australia reported the least number of dietary needs (only 14% followed a diet). The US, UK and Australian respondents were more likely to have lifestyle dietary needs than medical or religious. The results show no significant difference between daily importance and travel importance of dietary needs. This indicates that dietary needs remain relatively constant and continue to be of importance during travel.

While travelling, respondents with religious, medical and lifestyle dietary needs negotiated or managed the said needs by occasionally avoiding local food (20%, 22%, 19% respectively, $p<.05$) or even bringing their own food (all ≤10%, $p<.05$). Respondents with medical dietary needs preferred to avoid foods rich in sugar (27%), salt (25%) and fat (21%) when travelling. Respondents with religious and lifestyle dietary needs tended to avoid food perceived as unhealthy (32% and 24% respectively, $p<.05$) when travelling.

The variance explained by the model (R^2) is 30% for satisfaction, 43% for WTR and 46.5% for WTV. To be considered substantial, R^2 value of the endogenous construct should be above 0.25 (Hair et al., 2011). The quite low R^2 value (.014) for dissatisfaction further indicates that no meaningful relationship exists between the importance of dietary needs and dissatisfaction in the data. The cross-validated redundancy measure Q^2 is greater than 0.25 for both WTR and WTV as well as satisfaction, indicating medium predictive relevance. The Q^2 value close to 0 for dissatisfaction depicts low predictive relevance of the variable. The removal of dissatisfaction affects the WTR construct's R^2 value, reducing it by 0.3% percentage points as well as reducing WTV construct's R^2 value by .01% percentage points. The normed fit index (NFI) by Bentler and Bonett (1980) computes the Chi² value of the proposed model and compares it against a meaningful benchmark. In the model, the Standardized Root Mean Square Residual (SRMR) value of 0.04 and NFI close to 0.9 suggest a good fit.

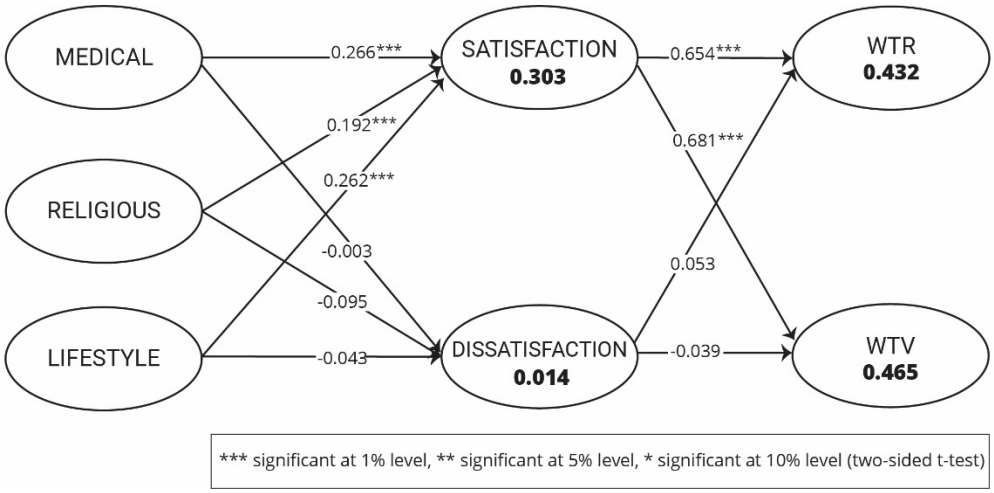

Figure 1. PLS-SEM results

Ten direct relationships between paths were investigated in this study (Table 4). The results support half of the hypotheses. Figure 1 shows the direct paths for the structural model.

Table 4. Direct paths for the structural model

	Standard coef.	Mean	ST.DEV	t-value	p-value	Decision
Religious -> SAT	0.192	0.191	0.032	6.032	0.000	**H1a: Accept**
Religious -> DISSAT	-0.095	-0.096	0.053	1.795	0.073	H1b: Reject
Medical -> SAT	0.266	0.263	0.041	6.548	0.000	**H2a: Accept**
Medical -> DISSAT	-0.003	-0.002	0.062	0.043	0.966	H2b: Reject
Lifestyle -> SAT	0.262	0.264	0.04	6.537	0.000	**H3a: Accept**
Lifestyle -> DISSAT	-0.043	-0.043	0.064	0.664	0.507	H3b: Reject
SAT-> WTR	0.654	0.655	0.021	30.675	0.000	**H4a: Accept**
SAT -> WTV	0.681	0.681	0.021	32.075	0.000	**H4b: Accept**
DISSAT -> WTR	0.053	0.053	0.029	1.796	0.073	H5a: Reject
DISSAT -> WTV	-0.039	-0.038	0.036	1.077	0.282	H5b: Reject

Figure 1 offers a visual representation of the connections between three groups of tourist dietary needs, satisfaction and behavioral intentions. Hypothesis **H1a** was tested by examining the path coefficient between the importance of religious dietary needs and tourist satisfaction (β =.192, p<.0005). The results show that tourists who placed high value on religious dietary needs were more likely to have a positive attitude toward the destination that could satisfy their dietary needs. A similar relationship was observed between the two remaining groups of tourist dietary needs and satisfaction, effectively supporting **H2a** and **H3a**. However, the effects of dietary needs on dissatisfaction were found to be not significant. Thus, hypotheses **H1b, H2b** and **H3b** did not receive statistical substantiation.

The results show that dietary needs can act as determinants of behavioral intentions, namely WTV and WTR, when mediated by satisfaction. Therefore, tourists are more likely to revisit and recommend the destination to family and friends if the destination is capable of meeting their dietary needs. This effectively supports hypothesis **H4a** and **H4b** (Table 4). The opposite

relationship, where tourists are less likely to revisit and recommend the destination if their dietary needs are not satisfied (**H5a** and **H5b**), was not substantiated.

While all three groups of dietary needs have an effect on satisfaction and behavioral intention, lifestyle and medical dietary needs exhibit a slightly stronger effect compared to religious dietary needs ($p<.005$). Current tourism and hospitality literature tends to focus on religious dietary requirements (Halal, Kosher, and other cultural diets) when referring to special dietary preferences. Considering our results, we recommend that additional attention be paid to medical and lifestyle dietary needs, particularly when investigating behavioral intentions. Our results extend previous findings (Barrero Toral, 2016; Han et al., 2021; Huang et al., 2019) and support the notion that destination's 'dietary' preparedness is associated with better experience outcomes.

6. Conclusions and implications

6.1 Conclusions

Tourism destinations rely on repeat tourists and their ability to sustain a positive destination brand advocacy. However, tourists are only likely to be active destination brand advocates if they are satisfied during their stay. According to our findings, catering to tourists' dietary needs is one way to improve tourist satisfaction and influence future travel intentions.

Our results have demonstrated the existence of positive connections between diverse tourist dietary needs, satisfaction and behavioral intentions. We found that dietary needs are an important determinant of future intentions (WTV and WTR) when mediated by satisfaction. While all three groups of dietary needs had an effect on satisfaction and behavioral intentions, lifestyle and medical dietary needs exhibited a slightly stronger effect compared to religious dietary needs.

Our results have confirmed that the relationship between tourist dietary needs and destination evaluation and intentions is not symmetrical. The higher the perceived importance of tourists' dietary needs, the more likely they are to be satisfied with a destination that can cater to their needs. Satisfied tourists are more likely to recommend a visit to others and to return. However, the effects of dietary needs on dissatisfaction were found to be not significant. The destination's inability to satisfy dietary needs does not necessarily reduce willingness to recommend or revisit. The results of this study support the notion that destination's 'dietary' preparedness is associated with better experience outcomes.

6.2 Theoretical implications

This research provides a contribution to the understanding of tourists' experiences and intentions. It confirms that the satisfaction of dietary needs plays an important role in post-trip decision-making. An improved understanding of tourist intentions would benefit research on both travel behavior and travel needs. Accordingly, this work can be a good foundation for future researchers who are interested in determinants of behavioral intentions as well as those aiming to develop food tourism.

In terms of academic contributions, this study is among the first to investigate how tourists' special dietary needs influence satisfaction and behavioral intentions. With the majority of studies focusing on tourist dietary needs in hospitality settings, few explore destinations' 'dietary' performance. Unlike other studies that focus on individual dietary practices, this study explores a broader range of dietary needs (lifestyle, medical, and religious). The investigation of a wider range of dietary practices lends more efficiency to managers and policymakers responsible for designing industry-level solutions.

This study contributes to research methodology by validating the applicability of Herzberg et al.'s (1959) two-factor theory to consumer food-related behavior. Our findings have confirmed that dietary needs can act as satisfiers. The higher the perceived importance of dietary needs in customers' dietary routine, the more likely they are to be satisfied with a destination that can cater to their needs. In contrast, destination's inability to satisfy dietary needs does not necessarily lead to higher levels of dissatisfaction. This asymmetrical relationship provides fertile ground for future research endeavours. It hints at the possibility of employing Kano's (1984) Attractive quality theory to further investigate tourists' dietary needs. As such, we recommend a further exploration of dietary needs as 'value-added' and 'must-be' attributes.

This study makes a tentative contribution to the literature on tourism constraints. Our findings and observations hint at certain adaptational qualities of tourists with dietary needs. Similar to Huang et al. (2019) and Kansanen (2013), we found that consumers can negotiate their dietary constraints and persist in travelling even if it means compromising their dietary preferences. However, such compromises can lead to discomfort, as tourists are forced to either meticulously plan their meals or avoid eating local food altogether. This, in turn, does little to enhance the quality of the tourist experience at destinations and can even diminish the interaction that the tourist has within the tourist space. Further investigation of dietary needs as a type of constraint in complex travel decision-making is necessary.

6.3 Practical implications

With regard to practical implications, the findings of this research are beneficial for destination management organizations (DMOs). Considering that dietary needs are important, ubiquitous and persist during travel, destination managers are suggested to rethink and adapt their marketing strategies to the changing consumer behavior by incorporating dietary needs into regular service offering. Destination managers are advised to amend their perception of tourists with dietary needs as peripheral tourists or niche tourists (e.g., vegan travellers, Halal tourists, tourists with special needs) but rather work on ways to discern which attributes offered to consumers serve best to accommodate their diverse dietary needs. This may involve developing new customer-centric marketing approaches and exploring the opportunity of incorporating more diverse food products and services that align with tourist dietary requirements to provide high service quality to consumers.

For destination managers in Singapore, the understanding of the mechanisms that shape food demand patterns is of particular value. It can improve the current service quality or open a

pathway for managers to develop new marketing approaches (e.g., Singapore as the most diverse and accommodating 'Food City' in the world). The ability to understand and cater to a variety of diets can add to the immediate visitation and play an important role in the development of Singapore's brand equity. In our previous study, we have found that dietary expectations cannot be fully realized without a strong government response which includes policy changes. Rethinking the established food-related policies as well as reframing and extending these policies to accommodate diverse tourists' needs is necessary for destinations aiming to promote food tourism (or food and tourism).

Our observations support the notion that destination's ability to satisfy dietary needs is yet to become a habitual expectation among consumers. Catering to diverse dietary needs is yet to be regarded as a 'must-be service'. However, there is evidence that the situation is changing, as more businesses are coming to accept the variability of consumer needs and expectations. We encourage the tourism and hospitality providers to capitalise on gaps in the current offering. By doing so, they are likely to gain a competitive advantage. We believe that the need to accommodate diverse dietary needs will become incrementally more commonplace much sooner than anticipated. Policy makers, destination managers and tourism stakeholders need to accept and embrace the changing consumer attitudes and, if possible, create favourable conditions for all businesses to participate in inclusive diet-friendly practices.

Lastly, it is undeniable that food is a valuable tool for providing destinations with new experiential products. Catering to dietary needs can add to the destination experience mix and contribute to loyalty intentions. F&B sector has much to gain by positioning and branding themselves as reflecting trends and needs. The ability to generate added value through better dietary performance can be invaluable for all destinations planners and managers.

7. Limitations and future research

This study is limited to Singapore's context with its idiosyncratic food culture. To contribute to further development of the F&B and tourism industry outside of Singapore, we urge researchers to investigate the present research model in other cultural settings. This study is limited to a sample of international travellers. A comparative study of the effects of dietary needs on foreign vs domestic travel intentions could be a valuable addition to the understanding of tourists' needs.

This study provides a solid foundation for ambitious initiatives in the future. Moving forward, it would be interesting to investigate additional constructs such as taste value, health value, price value, emotional value, and prestige value as mediating factors when evaluating tourist experiences and intentions. It would be valuable to compare and contrast tourist dietary needs and tourist wants. Further longitudinal and empirical studies are needed to document the differences in dietary patterns among diverse tourist groups.

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