



FOOD NEOPHOBIA: EXPLORED AND UNEXPLORED TERRAINS

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ABSTRACT

Food neophobia is being regarded as an individuals' reluctance to try unfamiliar or novel food and consequently the inclination to stay away from it. In addition, unfavorable taste, odor and appearance of novel foods signifies the definition of neophobia. Since research pertaining to food neophobia is limited, review is aimed at exposing the disparity in research on past, current and future trends pertaining to research on food neophobia. Studies on food neophobia are essential as food neophobia has impact on food preferences. Understanding the factors influencing food preferences is vital for implementing and promoting positive changes in the food habits of any society. The identification and compilation of all food neophobia-related publications covered publications produced between 2010 and 2020. Articles were selected from the three most prominent and popular online databases/search engines, namely 1) EBSCOHost (<http://search.ebscohost.com>), 2) Science Direct (<http://www.sciencedirect.com>), and 3) Google Scholar (<http://scholar.google.com>). Based on the results, a thorough analysis was achieved concerning the following: (1) theory pertaining to food neophobia, (2) measures of food neophobia, (3) importance of research pertaining to food neophobia, (4) researches on food neophobia, and (5) directions for future research on food neophobia. The study concerning food neophobia is essential as food neophobia influences food preferences. Understanding the factors prompting food preferences is crucial towards the implementation and promotion of positive changes in the food habits of any society. This study adds to the academia and industry by discovering several inadequacies in the existing studies and bestowing an outline for future research. Further studies are certainly imperative to empirically authenticate the concept of food neophobia through systematic investigations and devise a means to quantify it.

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1. INTRODUCTION

Food neophobia is considered a prominent determinant of a consumer's food selection (Ting et al., 2016). Prior researchers termed food neophobia as individuals' reluctance on trying unfamiliar or novel food and consequently the inclination of staying away from it (Białek-Dratwa et al., 2022; Łoboś and Januszewicz, 2019). Furthermore, it can be defined as one's tendency to avoid or fear new food, unfavorable taste, odor or appearance of novel foods (Park and Choo, 2016; Ting et al., 2016).

Prior researchers regarded the phobia of new food as a mental opposition or a conventional force which functions to reassure a consumer that consumed food is safe by preferring familiar (known to be harmless) foods and refusing unfamiliar foods (Mascarello et al., 2020). It was identified that food refusal is instigated by the following: i) hatred of sensory quality, ii) fear of undesirable outcomes of food consumption and iii) revulsion towards a food's fundamental nature or source (Lafraire et al., 2015). As a whole, these reasons jointly express food neophobia pertaining to unknown food as the dissimilarities in native habits from that of travelers delay their aim to attempt native foods as well (Samant et al., 2018). A common instance is observed in countries such as Korea, China, and Hong Kong, where fish can be seen swimming in tanks at the entrance of restaurants. Scholars posited that some travelers felt awkward and disgusted in seeing the fish being slayed and cooked for them with regard to their requirements (Lepp and Gibson, 2003). As pointed out by Lepp and Gibson (2003), this "weird food" is among the seven consequences for universal travelers as well as peril for example health, political issues, terrorism, and cultural barriers. Despite examples from previous studies, research pertaining to food neophobia is scarce. Thus, the aim of this review is to ascertain the disparity in research on past, current and future trends pertaining to research on food neophobia. The study pertaining to food neophobia is specifically essential as food neophobia has an impact on food preferences. Understanding the factors influencing food preferences is vital when implementing and promoting positive changes in food habits of any society.

2. METHODS

2.1 SEARCH STRATEGY, DATA SOURCES, INCLUSION AND EXCLUSION CRITERIA

The identification and compilation of all food neophobia-related publications were conducted for sources published between 2010 and 2020. Articles were selected from the three most prominent and popular online databases/search engines, namely 1) EBSCOHost (<http://search.ebscohost.com>), 2) Science Direct (<http://www.science-direct.com>), and 3) Google Scholar (<http://scholar.google.com>). Since this study aimed at providing a comprehensive summary of articles on food neophobia, keywords related to the subjects and contexts of food neophobia research were used to search for articles related to food neophobia published in academic journals. These keywords included theories pertaining to food neophobia, measures of food neophobia, the importance of research pertaining to food neophobia, research concerning food neophobia, and directions for future research on food neophobia. To further strengthen the article search, the terms ‘hotel’, ‘tourism’, ‘hospitality’ and ‘travel’ were incorporated, while articles cited in the selected publications were equally traced. Every selected article was examined by two researchers, who then ascertained each article’s validity for inclusion in this study. Like most review papers in various subject areas, this paper accepted only full-length publications from peer-reviewed academic journals for analysis, wherein the journals were primarily from the hospitality and tourism area. Excluded materials comprised abstracts, editor prefaces, conference reports, conference articles, Internet columns, and book reviews, given that these materials’ contribution to the knowledge in this field is little to none.

3. RESULTS

3.1 THEORY PERTAINING TO FOOD NEOPHOBIA

The Theory of Planned Behavior (TPB) by Ajzen (1991) is among the foremost theories for predicting and empathizing behavior of individuals precisely pertaining to food neophobia (Ukenna and Ayodele, 2019; Ajzen, 1991). With regard to the TPB, individual action is shaped by three types of beliefs, namely normative beliefs, control beliefs, and behavioral beliefs (Fang et al., 2017). Control

belief is termed as a person's insights into how control influences behavior, which is interconnected to perceived behavioral control (Martinez and Lewis, 2016; Ajzen, 1991). Normative belief, which signifies a person's belief about a specific conduct, generates a subjective norm. A behavioral belief, a person's insight into the consequences of a specific behavior, generates the person's attitude toward the behavior. This insight of control is associated with aspects that may accelerate or hinder behavioral performance and whether the person senses the behavior as easy or challenging to perform (Hardin-Fanning and Ricks, 2017). The TPB depicts that an individual's behavioral intention, which prophesizes whether he/she would execute a behavior, can be forecasted by his/her attitude, subjective norms, and perceived behavioral control (PBC). Generally, the more desirable an individual's attitude, subjective norms, and PBC about a given action, the greater his/her intention to execute the action; in turn, the greater the behavioral intention, the higher the likelihood that the individual will perform the action (Martinez and Lewis, 2016; Ajzen, 1991). The TPB has attained substantial consideration and has been applied extensively and effectively in the study of consumers (Maichum et al., 2016), comprising research concerning food choice (Nystrand and Olsen, 2020) and food neophobia (Ting et al., 2016).

Past studies often adopted the TPB, which was deemed as an effective tool in predicting customer behavior of non-Muslims within the context of *halal* tourism (Khalek and Ismail, 2015). Contrary to expectation, numerous *halal* food literature embraced the TPB to exhibit the factors that motivate consumers to buy *halal* food (Maghsoodi Tilaki et al., 2016; Haque et al., 2015; Khalek and Ismail, 2015; Shah Alam and Mohamed Sayuti, 2011). The elementary teachings of Islam are to support inclination through the appropriate utilization of the resources granted by God. Thus, *Islāmic* law classifies the conception of *halal* and *haram* for Muslims (Khalique, Ramayah and Hina, 2020). Muslim consumers consume *halal* foods and products as a religious obligation, and an act in full compliance with the *Sharī'ah* (Nor et al., 2019). On the other hand, for non-Muslim consumers, *halal* foods and products represent the symbol of hygiene, quality and safety (Laluddin et al., 2019).

Along with TPB, the Triandis Model (TRIANM) has been commonly utilized to study consumer behavior of *halal* food choice (Wibowo and Ahmad, 2016; Kim and Lee, 2012). These two models have been a foundation for examining consumer food choices (Wibowo and Ahmad, 2016). As TPB explained human behavior through attitude, subjective norm and perceived behavioral control

(Ajzen, 1991), which connected strongly to cognitive aspects, TRIANM described human behavior through attitude, contextual factors, personal capabilities and habits (Triandis, 1979), which associated strongly to the affective aspect.

Furthermore, Theory of Mind (ToM) is deemed suitable in studying *halal* food choice among individuals (Dennis et al., 2013). ToM (Dennis et al., 2013) described human behavior via three facets instead of a single facet, as depicted by TPB (Ajzen, 1991) and TRIANM (Triandis, 1979). Nevertheless, there are limited studies of ToM in getting to know human actions (Dietvorst et al., 2009; Apperly, 2012). Babicz-Zielińska (2006) mentioned that function of all three aspects in psychology prospect will influence motives, personality, and attitudes of consumers on food consumption and decision. From the tourism motivation standpoint, an individual's food choice would differ based on psychological aspects as tours are anticipated to satisfy diverse levels of needs of the customers and psychological needs (Mak et al., 2012).

Earlier food-related researches on tourism (Rousta and Jamshidi, 2020; Choe and Kim, 2018; Gonçalves et al., 2016) emphasized why consumers choose to purchase or not to purchase several particular products over others by embracing the Theory of Consumption Value (TCV), which was cultivated by Sheth et al. (1991). As such, the modified Theory of Reasoned Action and Complexity Theory were conversed in tourism studies. Olya and Al-Ansi (2018) described numerous risks such as quality risk, hygiene risk, psychological risk, and environmental risk that might arise when eating foods by adopting the Complexity Theory.

3.2 MEASURES OF FOOD NEOPHOBIA

Pliner (1994) and Raudenbush et al. (1998) each developed a valid scale for food neophobia. Pliner (1994) established the aspect of consumer behavior in their Food Neophobia Scale (FNS) by defining food neophobia as the avoidance of and/or unwillingness to consume new foods. The 10-item FNS (Pliner, 1994) is used for determining a person's inclination of prevention of novel foods. This scale is also employed to assess experience and familiarity with unique cuisines (Flight, Leppard and Cox, 2003), local food consumption among travelers (Kim, Eves and Scarles, 2009), food festivals (Kim, Suh and Eves, 2010), and discovering unusual tastes and smells of food (Raudenbush et al., 1998). This 10-item scale has five positive and

five negative statements, all of which are rated on a seven-point Likert-type scale marked from “(1) strongly disagree” to “(7) strongly agree”. An example of a positive statement is “I am constantly sampling new and different foods”, while an example of a negative statement is “I don’t trust new foods.” In accordance with this, low scores measured on the behavior affirmed as high neophobia. Next, Raudenbush et al. (1998) constructed the Food Attitude Scale (FAS-R) which measures consumers’ food neophobia by their willingness to sample cuisines they have never tried. On the other hand, studies pertaining to children’s feelings in consumption of specific novel food in certain situations were measured using Loewen and Pliner’s (2000) Food Situations Questionnaire (FSQ) (Białek-Dratwa et al., 2022).

Furthermore, the Food Neophobia Scale (FNS) (Pliner, 1994) was also surveyed among the British *Muslim* community (Boereboom et al., 2022). As posited by Boereboom et al. (2022), there is a greater food and food technology neophobia among the British *Muslim* population that can be described in terms of the *halal* principle, which makes *Muslims* more cautious with regard to foods unfamiliar to them. The survey carried out by Boereboom et al. (2022) consisted of an extra three questions that explicitly examined faithfulness toward *halal* lifestyle. This was inserted to gain understanding into the “religious strictness” of the *Muslim* population sample. Moreover, in the survey that was intended for the British *Muslim* community, the food neophobia scale was incorporated twice: first to measure food neophobia with regard to any food, and second, with regard to foods that were known to be certified *halal* (Boereboom et al., 2022). This discrepancy was made clear to respondents by an introductory declaration.

3.3 IMPORTANCE OF RESEARCH PERTAINING TO FOOD NEOPHOBIA

According to Jaeger et al. (2021), a strong relationship exists between novel food rejection with unhealthy eating habits categorized by low fruit and vegetable intake. In addition, the low intake of vitamins, minerals and fibers related with the overconsumption of fats and sugar (the so-called Western pattern diet) might enhance the possibility of overweight and obesity (Rakhra et al., 2020). Thus, the food neophobic behavior could influence not only the diet variation, but also and primarily its nutritional quality.

With regard to food neophobia, a lot of factors governs it, such as age, educational level, culture and genetics, time and

space/location, food insecurity, hunger and poverty and globalization. It is quoted that approximately 66 percent of the divergence in food neophobia is attributed to genetic elements and regardless being specifically general among children, food neophobia can occur until adulthood because of environmental factors such as food access, lifestyle and socio-demographic patterns (Scaglioni et al., 2018). Thus, urban-based individuals with greater educational level are less food neophobic in contrast to rural persons. This is because the urban atmosphere promotes more exposure to a wide variety of food and subsequently higher food acceptance (Jaeger et al., 2021).

Hence, foods could be prohibited for numerous aims such as underexposed or unawareness with specific food and also by taste. It is known that taste is one of the main factors that stimulate eating pleasure and preferences. With regard to taste, bitter food is often highly avoided (Nissim, Dagan-Wiener and Niv, 2017). Nevertheless, dislikes pertaining to bitterness can be overwhelmed by recurrent exposure to precise foods and particularly by the positive experiences and emotions associated with its consumption (Jaeger et al., 2021). Thus, acquaintance with dissimilar kinds of food is a way to increase understanding and inclination to taste new foods, which must be encouraged from the earliest stages of life. Ultimately, understanding food neophobia as a factor that affects everyday food choices is essential to improve better eating habits. This will lead to valuable changes such as preventing obesity in childhood, adolescence and, subsequently, in adulthood.

3.4 RESEARCH ON FOOD NEOPHOBIA

Research on food neophobia has begun to intensify in recent years by being conducted with different age groups (Białek-Dratwa et al., 2022; Perry et al., 2015),

Precisely, scholars identified that food is extensively acknowledged as an essential quality that entices travelers to a specific destination (Lepp and Gibson, 2003). In tourism, scholars show five factors that motivate food choice, comprising excitement, cultural experience, sensory appeal, interpersonal association, and health concern (Mak et al., 2017). Diverse endeavors have attempted to segment travelers according to the factors driving food selection. For instance, travelers were segregated into five fragments, comprising value pursuers, service pursuers, adventure pursuers, atmosphere pursuers, and health pursuers (Chiciudean et al., 2019). Other

researchers sectioned three groups of travelers, namely taste pursuers, localization pursuers and experience pursuers (Alonso, Sakellarios, and Cseh, 2015). These researches pertaining to tourists' motivational influences and food segmentation typically presume that food is an appeal for travelers.

Nevertheless, food fails to constantly exemplify optimistic encounters. According to Bellia, Pilato and Seraphin (2016), food can be a mental and physical hurdle for travelers. For instance, Western tourists encounter food neophobia during their travel in developing nations due to the phobia of inadequate hygiene standards and health hazards in consuming local cuisine (La Barbera et al., 2018). Furthermore, the discrepancies between native customs and that of travelers hamper the desire to attempt local food. For instance, contemporary self-reliant travelers going to India are likely to spend more time in traveler areas with other tourists, which constrains their interaction with local guides and makes them consume similar food to cope with cross-cultural anxiety (Wang et al., 2018). In fact, the intake of fast food such as McDonald's at tourist spots is associated with lessening travelers' anxiety and 'culture shock' (Osman, Johns and Lugosi, 2014). When female solo travelers refuse local food, they feel like failures and are embarrassed to be watched by other travelers at Western eateries (Falconer, 2013). Such arising evidence highlights the dilemma faced by solo travelers with regard to food, having to choose between obtaining cultural capital or utilizing food as sustenance. This calls for modern solo travelers to change their consumption patterns towards the sensation-seeking features of solo travelers in the beginning of the 1970s, depicted by Cohen's (1972) traveler categorization.

In terms of age groups, there have been wide studies focused towards comprehending children's food preferences through the lens of food neophobia (Smith et al., 2017). It was identified that selective/choosy consumption among children is inspired by food neophobia. For instance, children with high food neophobia tend to avoid foods new to them (e.g., fruits and vegetables) in comparison to ones they recognize (Kaar et al., 2016). Food neophobia is also a substantial problem in the case of children with overweight or obesity, and those who grieve from diseases in which it is essential to follow a special diet (Białek-Dratwa et al., 2022). These children are obliged to stay on a diet, and their unwillingness to try new products makes it hard to execute dietary recommendations, which could influence the disease outcome.

Previous researchers identified three aspects that caused food neophobia, namely the sensory nature of food, food product information, and the views or personalities of consumers (Białek-Dratwa et al., 2022; Scaglioni et al., 2018). For example, taste and interior are the key causes that discourage Westerners' exploration of ethnic cuisines (Verbeke and Poquiviqui Lopez, 2005). In researching the effect of food neophobia on the tolerance of new food, Choe and Cho (2011) segregated 416 Korean respondents into groups with low, moderate, and extreme neophobia in line with their food neophobia rankings. The respondents' ease and readiness to sample 12 ethnic cuisines (American, African, Chinese, Greek, Indian, Italian, Japanese, Mexican, Mongolian, Thai, Turkish, and Vietnamese) were also estimated. Besides Chinese and American cuisine, those with extreme food neophobia were less inclined to try other ethnicities' foods in comparison to those with low neophobia. These discrepancies in the attitude toward numerous ethnic-flavored foods underscore that the influence of food neophobia on acknowledgement of new foods can differ with the kind of food. Additionally, a weaker inclination to taste ethnic cuisine could reveal a low intention to purchase the food items. A similar study in Finland (Tuorila et al., 2001) requested consumers to self-report how familiar they were with 20 common and uncommon ethnic foods. Respondents with greater food neophobia showed a lower likelihood of prior unfamiliar food consumption as well as a weaker tendency to try unknown native foods. The study, however, excluded assessments of the foods' sensory preference and its effect on purchase decisions.

Nevertheless, repeated exposure to novel foods may be decreased through multiple positive experiences with new foods (De Cosmi, Scaglioni, and Agostoni, 2017). In addition, flavor generalization may overcome food neophobia, for instance, generalized responses were found to similar-tasting food choices (McCrickerd and Forde, 2016). Moreover, an unknown food may be similar to a liked or unliked familiar food in appearance, taste, or smell (Mura Paroche et al., 2017).

3.5 DIRECTIONS FOR FUTURE RESEARCH ON FOOD NEOPHOBIA

Food plays an important part in enticing travelers and boosting travelers' destination encounters. Thus, future researchers might review travelers' demographic traits in relation to food neophobia and raise apt research questions such as "what are the predictors and

outcomes of travelers' food neophobic behavior?" and "how can food neophobia be overcome?"

Though food today is seen as safe in general, people may maintain some degree of discomfort when encountering novel or unusual food (Lafraire et al., 2015). Consequently, food neophobia has been studied as a moderating variable to evaluate its consequences on diverse behavioral results (de Beukelaar et al., 2019). Studies revealed that food neophobia is not associated with the attempt to consume ethnic cuisine (Ting et al., 2016). Nevertheless, little has been revealed on its impact on consumption intention in the ethnic food setting (Ma, Abdeljelil, and Hu, 2019).

With regard to Islamic Economics Principles, the role of research centers and discussion of *halal*, the *Islāmic* cultural economy and *halal* industries are in acute need of *halal* experts. This can be evident not only in *Muslim* majority countries, such as Malaysia's neighboring country Indonesia which aims at being a universal *halal* hub like Malaysia, but also in non-*Muslim* countries. Thus, further exploration of the studies of the *halal* food purchaser behavior in Western countries could also be useful applications in Malaysian companies intending to export their *halal* food products in those particular countries.

In a majority of studies on adults' food neophobia, scholars have assessed readiness to attempt unique foods as a behavioral outcome toward such foods (Mancini et al., 2019; Choe and Cho, 2011). Little empirical work, however, has emphasized food neophobia at the adult level. Even though prior research has identified that ethnic food's taste and aesthetics are the core reasons discouraging Western individuals from attempting it (Verbeke and Poquiqui Lopez, 2005), It remains unknown if these reasons prevail in Eastern countries (Ting et al., 2016).

Concurrently, the emergence of consumer ethnocentrism has strengthened the notion of food neophobia. Initial research defines consumer ethnocentrism as consumers' judgments about the suitability and ethicality of foreign product purchases (Vabø and Hansen, 2016). Additionally, this concept depicts emotional feedback in purchasing foreign made products which, consequently, portray one's belief that one's own country's products are superior. Karoui and Khemakhem (2019) pointed out the importance of consumer ethnocentrism in shaping consumer attitude and perception toward products from other countries. As such, a vivid comprehension of ethnocentrism's impacts on ethnic food consumption by travelers is highly significant in clarifying related issues such as food neophobia.

For instance, testing consumer ethnocentrism as a moderator of food neophobia can be important in contributing to the literature. All these exemplifies a huge prospective section that must be tackled in future studies.

4. DISCUSSION

This review identified studies published in academic journals between 2010 till 2020 addressing theory pertaining to food neophobia, measures of food neophobia, importance of research pertaining to food neophobia, research concerning food neophobia, and directions for future research on food neophobia.

We found that the Theory of Planned Behavior (Ajzen, 1991) has attained substantial consideration and has been extensively and effectively applied in consumer research (Maichum et al., 2016), comprising research concerning food choice (Nystrand and Olsen, 2020) and food neophobia (Ting et al., 2016).

Concerning measures of food neophobia, scales generated by Pliner (1994) and Raudenbush et al. (1998) were the pioneers in scales related to measuring food neophobia. Precisely, to quantify children's emotions about the consumption of certain new foods in different settings, the Food Situations Questionnaire (FSQ) generated by Loewen and Pliner (2000) was utilized. Research regarding food neophobia is essential as there is a need to familiarize individuals to try different foods to enhance individuals' support in trying novel foods, that ought to be encouraged during the individual's early stages of life. Eventually, comprehending food neophobia as an aspect that influences everyday food choices is deemed important to enrich individuals' eating habits, which leads to inhibiting obesity in childhood, youth and eventually, in adulthood.

Studies are required on applying the Theory of Planned Behavior in Western and *Muslim* countries. Analysis of non-*halal* food purchaser viewpoints and attitudes should be examined. Data from these individuals can bestow insight regarding the factors involved with trying *halal* food the first time. Learning the aim for this group's non-*halal* food utilization might assist scholars to break down barriers to non-*halal* food purchasers' participation in *halal* food buying. Further examination of the studies pertaining to *halal* food buyer behavior in Western countries might also have beneficial applications in Malaysian companies intending to export their *halal* food products to those specific countries.

Pertaining to scholarly articles on food neophobia, there is a rising attention among scholars on consumers' perceptions of new or unknown food, paving the path for research on food neophobia. Future researchers could study traveler segments' demographic traits with regard to food neophobia by addressing the determinants and outcomes of their neophobic behavior as well as strategies to mitigate this phobia. Furthermore, there seems to be limited research pertaining to (1) consequence on consumption intention in the circumstance of ethnic cuisine, (2) food neophobia among adults, (3) food neophobia effects on individual-level consumer behavior (e.g., sensory acceptance or purchase behavior), and (4) food neophobia in relation to childhood obesity.

5. CONCLUSION

Food preferences portray a significant fragment in the estimation of human food selection, wherein food neophobia is among the foremost features affecting the diet quality and food preferences. Food neophobia is viewed as unwillingness to savor new foods. Individuals vary in their extent of food neophobia, with some of them exhibiting immense pleasure in consuming novel foods while others, especially travelers, displaying a robust hatred of new food as influenced by factors such as age, culture, and environment. Even though food neophobia has been valuable from an evolutionary perspective, it could lead to undesirable consequences on food preferences in a modern society with assured food safety, as food neophobic people stay away from novel food experiences and therefore have inadequate nutritional diversity. The intervention from professionals such as academicians and governments would assist to bestow more insight on food neophobia so that the public will be aware and achieve a better lifestyle and better eating habits.

Studies on food neophobia are essential as food neophobia stimulates food preferences. Understanding the factors prompting food preferences is crucial in implementing and promoting positive changes in the food habits of any society. Above that, for further enhancement of hospitality businesses, it is crucial to assimilate travelers' needs and wants toward food consumption (Park and Cho, 2016). Research on traveler food consumption, however, has been disregarded in hospitality and tourism related write-ups (Lim et al., 2019). A comprehensive knowledge concerning the determinants influencing tourist food consumption is important to the hospitality sector in providing pertinent tourism dining experiences that can lead

to tourist satisfaction. Presently, gastronomy is a fundamental element for tourists to discover the culture and traditions of a destination. Thus, as a potential line of study, it is highly recommended to study gastronomic tourism and to examine the loyalty stemming from the satisfaction achieved with the local cuisine.

Generally, this study adds to the literature by discovering several inadequacies in existing studies and bestowing an outline for future research. Further studies are certainly imperative to empirically authenticate the concept of food neophobia through systematic investigations and devise a means to quantify it.

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