

EXPLORING FOOD NEOPHOBIA TOWARDS NEW FOOD TRENDS AMONG PUBLIC UNIVERSITY STUDENTS IN PENANG

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Abstract: *Malaysia's diverse culinary heritage and its openness to sustainable food trends inspire the creation of innovative food products. As competition in food trends intensifies, it is essential for producers to develop creative and appealing foods that cater to consumer preferences while minimising food neophobia. This research seeks to identify the relationship between sensory responsiveness, psychological factors, and food neophobia towards new food trends of innovative foods among public university students in Penang. This study adopted a quantitative approach. The study involved administering a detailed questionnaire via Google Forms to public university students in Penang. The obtained data were analysed using SPSS Version 26. A Pearson correlation analysis conducted showed that there is a weak positive relationship between sensory responsiveness and food neophobia towards new food trends, and a moderate positive relationship between psychological factors and food neophobia. The findings suggest strategies addressing psychological barriers can significantly reduce food neophobia, encouraging students to embrace new food trends. This approach ensures a deeper connection with consumer preferences, driving better acceptance of innovative food products.*

Keywords: *Food Neophobia, Innovation Foods, Public University Students, Culinary Trends*

Introduction

Background Of The Study

The world's culinary landscape is constantly changing, with new culinary trends appearing as quickly as advancements in technology, culture, and consumer tastes. It also states that there are few new food trends in the world including urban farm produce, climate-conscious foods, pasture-raised meat and eggs, spicy bakes etc. In addition, according to Hassoun et al., (2022) the rising acceptance of several new food trends can be attributed to consumers' greater knowledge of climate change. Besides that, the dynamic nature of consumer preferences means that predicting food trends is an exciting endeavour, with new trends combining global influences, innovation and tradition every year (Tiffany, 2024).

According to Hairon (2017), in recent decades in Malaysia, food cultures have had a different impact on individuals in various areas of the world, with food now being considered a commodity in the modern diet system. In Malaysia, the growing awareness of sustainability and health is reflected in innovative food trends such as fusion products like the nasi lemak burger and the integration of plant-based and sustainable ingredients. These innovations highlight both global influence and Malaysia's rich culinary heritage. However, it is human nature for people to occasionally be hesitant to attempt or engage in activities that they perceive to be unfamiliar or unusual (Muhammad et al., 2015). Adults also exhibit this typical behaviour. This situation is referred to as food neophobia. Food neophobia, a concept coined from the Greek words "neo" (new) and "phobia" (fear), describes the unwillingness to try new or strange meals.

According to DOSM (2024), the population of Malaysia has risen to 34.1 million people. With 34.1 million people, Malaysia offers an enormous opportunity for research and uptake of new food trends that showcase the nation's varied food scene. Yet, this demographic diversity also necessitates a more profound understanding of the factors contributing to food neophobia.

Problem Statement

The food industry in Malaysia, particularly the agricultural commodity sub-sector, is experiencing significant growth in innovative and convenient traditional food products. This growth is driven by factors such as increasing urbanisation, the rise of women participating in the workforce, smaller household sizes, and lifestyle changes (Abdullah et al., 2024). These innovative food products not only reflect Malaysia's rich culinary heritage but also signify its embrace of sustainable and modern food trends. However, the increasingly fierce competition in food trends requires producers to innovate while ensuring consumer acceptance and addressing food neophobia (Siddiqui et al., 2022).

Food neophobia, or the reluctance to try unfamiliar foods, represents an important obstacle to the acceptance of new food trends. This resistance can limit dietary choices, hinder the exploration of diverse culinary cultures, and affect the adoption of innovative food products. Muhammad et al. (2015) highlighted a lack of understanding regarding the factors contributing to food neophobia in Malaysia. Without addressing this knowledge gap, it becomes challenging to promote the acceptance of new foods and encourage healthier and more diverse eating habits.

The avoidance of unfamiliar foods can have far reaching impacts on nutrition and overall health. Giordano et al. (2018) underline the importance of examining biological, cultural, psychological, and social factors in shaping food choices. Resistance to new food innovations often stems from cautiousness and unfamiliarity, which points to comprehensive analysis and strategies to lessen food neophobia. University students, as future consumers and trend drivers, are a critical group for understanding this behavioural challenge. Therefore, this research aims at identifying factors which might cause food neophobia about new food trends among students at public universities in Penang.

Research Objectives

R.O.1. To examine the relationship between sensory responsiveness and food neophobia towards new food trends among public university students in Penang.

R.O.2. To examine the relationship between psychological factors and food neophobia towards new food trends among public university students in Penang.

Research Hypothesis

H1: There is a significant relationship between sensory responsiveness and food neophobia towards new food trends among public university students in Penang.

H2: There is a significant relationship between psychological factors and food neophobia towards new food trends among public university students in Penang.

According to the Theory of Planned Behaviour, that forms the basis of the study framework, intentions, pressures, and subjective norms all have an impact on behaviour. To examine how these pressures impact food neophobia towards new food trends, the study suggests two variables, which are sensory responsiveness and psychological factors.

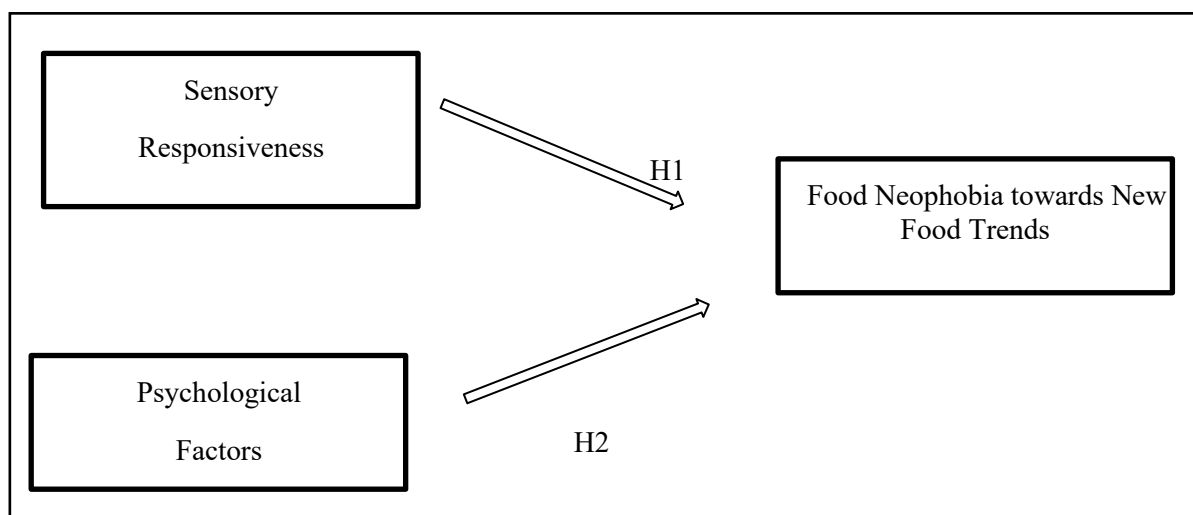


Figure 1: Research Framework

Source: Prescott et al. (2022) and Muhammad et al. (2016)

Literature Review

New Food Trends and Neophobia

The global food industry evolves rapidly, driven by technological advancements, shifting consumer preferences, and cultural influences. Recent trends, such as urban farming, climate-conscious foods, pasture-raised meat, and spicy baked goods, highlight a growing awareness of sustainability and environmental responsibility (Hassoun et al., 2022). While these trends attract many consumers, some individuals hesitate to try these foods due to food neophobia.

Food neophobia, characterised by a fear of trying unfamiliar foods, influences dietary choices and reduces a willingness to explore new food options. Various independent variables, including sensory responsiveness and psychological influences, contribute to the extent of food neophobia and determine the acceptance or rejection of new food trends (Siddiqui et al., 2022). To strengthen the theoretical basis of this study, the Theory of Planned Behaviour was adopted. According to Ajzen (2012), this theory speculates that human action is guided by three kinds of considerations, which are behavioural beliefs, normative beliefs, and control beliefs. These align with psychological and sensory factors, which influence food neophobia. Globally, studies by Choe & Kim (2024) and Rabadán & Bernabéu (2021) support the association between psychological dimensions and food avoidance. In the regional context, Unal et al. (2025) also confirmed that young adults exhibit significant food neophobia shaped by psychological traits and cultural environment.

Sensory Responsiveness

Sensory responsiveness refers to how individuals react to the taste, texture, and smell of food. People with heightened sensory sensitivity often avoid novel foods because these sensations may be overwhelming. For example, some individuals might reject food based on its appearance or texture without even tasting it (Coulthard et al., 2022). This avoidance behaviour can significantly reduce dietary variety.

However, sensory education has shown promise in reducing food neophobia by gradually introducing individuals to new sensory experiences (Karaağaç, 2022). Cultural factors further influence sensory responsiveness, with different populations exhibiting varying levels of openness to new foods. The evidence suggests that addressing sensory barriers could be a useful strategy in mitigating food neophobia, especially in multicultural settings.

Psychological Factors

Psychological factors, such as beliefs, attitudes, and emotions, strongly influence food-related behaviours. For example, individuals might avoid certain foods due to perceived risks, lack of familiarity, or negative past experiences. Social norms, peer influence, and cultural identity also play a role in shaping food preferences. These psychological barriers often intensify food neophobia, especially when individuals are exposed to unfamiliar or unconventional foods (Varela et al., 2024).

Effective communication strategies, such as emphasising the safety, health benefits, and environmental value of new foods, can reduce psychological resistance. By addressing these underlying factors, it becomes possible to encourage consumers, including students, to explore new dietary options.

Innovation Food

Food innovation refers to the creative incorporation of diverse culinary traditions and novel ingredients to develop unique dining experiences that accommodate a wide range of tastes, lifestyles, and dietary requirements (Nor & Zahari, 2025). Recent developments in food innovation have resulted in the development of various meat substitutes, such as plant-based meats and hybrid products that combine plant and animal proteins. The study also highlighted the use of diverse protein sources, including cashew nuts, white beans, textured peas, soybeans, and mushrooms to create burgers with positive nutritional and sensory attributes (Broad, 2020). In addition, a study by Hollweg et al. (2024) showed the formulation of hybrid and plant-based burgers, highlighting new ingredients and assessing their physicochemical and sensory properties for innovation in food processes. Additionally, the fusion of traditional dishes with modern formats, such as the nasi lemak burger, exemplifies the trend of integrating cultural flavours into contemporary food products, catering to evolving consumer preferences for innovative and diverse culinary experiences.

Methodology

Research Design

This study employed a quantitative, explanatory research design to examine the relationship between food neophobia and changing food trends among public university students in Penang. Specifically, it aimed to investigate how two independent variables which are sensory responsiveness and psychological factors influence the dependent variable, food neophobia towards new food trends. This study also used a causal research technique to understand the connections between variables.

Population And Sampling

The population for this study consisted of undergraduate enrolled at two public universities in Penang namely Universiti Sains Malaysia (USM) and Universiti Teknologi MARA (UiTM) Penang. Students were selected as the target population due to their developmental stage as young adults and their potential to exhibit consistent food neophobia patterns, as suggested by Unal et al. (2025). The researchers chose an expected group through simple random sampling, carefully documenting the demographics to ensure valid representation. Based on Krejcie and Morgan's (1970) table for determining sample size, a minimum of 379 respondents was required for this study. However, to enhance reliability, the researchers successfully gathered 420 complete responses. The high response rate can be attributed to strategic distribution methods, including the use of university-affiliated WhatsApp groups and faculty-specific Facebook pages with active student engagement. Additionally, peer encouragement and reminders were used during the questionnaire distribution period to further boost response rates.

Instrumentation

Data were collected using a structured questionnaire adapted from previously validated instruments with different sections focusing on food neophobia, sensory responsiveness and psychological factors. The sensory questions were adapted from Prescott's (2022) study on how individuals respond to food sensory properties, while the psychological factors were based on Muhammad et al. (2015). Questions related to food neophobia were adapted from Pliner & Hobden (1992). The questionnaire contained, 10 questions on food neophobia (with 5 reverse scoring items), 13 questions on psychological factors, and 12 questions on sensory

responsiveness. Responses were measured on a 7-point Likert scale, ranging from 1 (Strongly Disagree) to 7 (Strongly Agree). The questionnaire was administered via Google Forms and disseminated through targeted online platforms such as university WhatsApp groups and the USM Facebook page. The data collection period spanned from July 2024 to December 2024. Participation was voluntary, and respondents were required to answer screening questions in the questionnaire to ensure only students from the two selected universities participated.

Data Analysis

IBM SPSS Statistics version 26, was used to analyse the data. Reliability of the questionnaire items was evaluated using Cronbach's Alpha to assess the internal consistency of the scales. Cronbach's Alpha values range from 0 to 1, with values above 0.70 generally considered acceptable. Based on Hinton et al. (2004), values of 0.90 and above indicate excellent reliability, 0.70 to 0.90 indicates high reliability, 0.50 to 0.70 indicate moderate reliability, and values below 0.50 reflect low reliability. Reliability in this study confirms the consistency, stability, and dependability of measurement instruments (DataTab Reliability Analysis Online, 2024).

Descriptive statistics were used to summarise the demographic characteristics of the respondents. Correlation analysis was then conducted to examine the strength and direction of the linear relationships between the dependent variable (food neophobia) and the two independent variables (sensory responsiveness and psychological factors). Pearson's correlation coefficient (r) was used, as the data met the assumptions of normality and interval-level measurement. The r values range from -1 to +1, with the strength of association interpreted based on Cohen's (1988) criteria: 0.10–0.29 (small), 0.30–0.49 (moderate), and 0.50 and above (strong). A significance level of $p < 0.05$ was used to determine statistical significance. This analysis directly supports the study's objective to explore the extent to which sensory and psychological factors relate to food neophobia among university students.

Results And Findings

Background Characteristics Of The Respondents

The study successfully surveyed 379 respondents, yielding an impressive 420 responses and achieving a 100% response rate. This surplus of data surpasses the initially targeted sample size and provides a robust dataset for conducting a comprehensive investigation and thorough data analysis. The study focused on analysing the relationship between sensory responsiveness, psychological factors, and food neophobia in relation to new food trends among public university students in Penang.

Descriptive Analysis

Demographics

Table 1: Demographic Characteristics

Variable	Category	N	Percentage (%)
Gender	Male	190	45.2%
	Female	230	54.8%

Age	18–20	115	27.4%
	21–23	220	52.4%
	24–26	85	20.2%
Ethnicity	Malay	339	80.7%
	Chinese	12	2.9%
	Indian	7	1.7%
	Others	62	14.8%

Table 1 summarises the key demographic characteristics of the 420 respondents from public universities in Penang who participated in this study. The gender distribution indicates a slightly higher proportion of female respondents (54.8%) compared to male respondents (45.2%). This distribution suggests that both genders are relatively well represented in the sample, allowing for meaningful comparisons in terms of food neophobia across gender.

The distribution of age shows the majority of respondents (52.4%) fell within the 21–23 age group, followed by 27.4% in the 18–20 group and 20.2% in the 24–26 group. This distribution aligns with typical undergraduate and early postgraduate student age ranges, which is appropriate given the focus on university students. The age spread ensures that findings reflect the perspectives of young adults in various stages of their university education, potentially influencing their exposure to and acceptance of new food trends.

Collectively, these demographic characteristics confirm that the sample was largely representative of the young adult student population in public universities. These factors were useful for interpreting the study's main findings on food neophobia, especially when exploring potential differences across age, gender, and ethnicity.

Table 2: Educational Background

Variable	Category	N	Percentage (%)
Institution	UiTM Penang	304	72.4%
	USM	116	27.6%
Education Level	Foundation/Pre-Diploma	57	13.6%
	Diploma	71	16.9%
	Degree	290	69.0%
	Master's	2	0.5%

Table 2 outlines the educational profile of the respondents, covering both their institutional affiliation and academic level. A large majority of participants (72.4%) were from UiTM Penang, while only 27.6% were from Universiti Sains Malaysia (USM). This discrepancy might reflect differing response rates due to the method of survey dissemination or differing student population sizes between the institutions. The greater representation from UiTM ensured a strong perspective from this university, but it also suggests that future studies may benefit from more balanced institutional participation for broader generalisability.

In terms of educational level, the bulk of respondents (69.0%) were pursuing or had completed a degree, highlighting that most of the participants were undergraduates. This dominance is consistent with the typical composition of student bodies at Malaysian public universities, where degree-level programmes form the core academic structure.

A notable portion of the sample consists of 16.9% of respondents enrolled in diploma programmes and 13.6% in foundation/pre-diploma programmes. These groups, likely consisting of younger or early-year students, may have different attitudes or exposure levels to food trends compared to their degree-holding peers. Only 0.5% of respondents are at the Master's level, which aligns with the typically smaller postgraduate student population. While limited in number, these individuals might possess more developed perspectives shaped by greater academic maturity, potentially affecting their views on food neophobia differently.

Overall, this educational profile ensures a diverse representation across academic stages, with a strong emphasis on undergraduates. This distribution is valuable for exploring how educational exposure and institutional background may influence openness to new food experiences and trends.

Table 3: Socioeconomic Profile

Variable	Category	N	Percentage (%)
Living Area	Rural	19	4.5%
	Semi-Urban	192	45.7%
	Urban	209	49.8%

Table 3 presents the socioeconomic characteristics of the respondents, focusing on their residential area and monthly income or allowance, which are important contextual variables in understanding food neophobia among university students.

Considering the residential area, the majority of respondents were from urban (49.8%) and semi-urban (45.7%) settings, with only 4.5% residing in rural areas. This indicates a sample largely concentrated in non-rural environments. The predominance of urban and semi-urban participants suggests higher exposure to diverse food options, modern food marketing strategies, and social influences, which may shape attitudes toward novel foods. Limited representation from rural students may reflect accessibility and enrolment disparities in higher education and should be considered when interpreting the generalisability of findings.

Reliability Analysis (Cronbach Alpha)

Table 4: Value of Cronbach Alpha

	α
Sensory Responsiveness	0.688
Psychological Factor	0.703
Food Neophobia	0.669

Table 4 presents a comprehensive reliability test analysis of the Cronbach alpha concerning food neophobia towards new food trends among public university students in Penang. The degree of association between two variables was measured using general guidelines by Cohen (1998) for interpreting the strength of a correlation coefficient (r). The Psychological Factor scale achieved an acceptable level of internal consistency ($\alpha = 0.703$), falling within the range of high reliability, suggesting that the items used to measure this construct were sufficiently consistent. The Sensory Responsiveness and Food Neophobia scales yielded Cronbach's Alpha values of 0.688 and 0.669, respectively, which are considered to reflect moderate reliability. While slightly below the commonly accepted 0.70 threshold, these values are still within an acceptable range for exploratory research in social sciences, particularly when the constructs are complex and multi-dimensional. These results indicate that the measurement instruments demonstrate reasonable reliability and are suitable for further statistical analysis.

Correlation Analysis

Table 5: Correlations Between Neophobia Scores and Various Variables

		Sensory Responsiveness	Psychological Factor
Food Neophobia	Pearson Correlation	.239	.384
	Sig. (1 tailed)	<.001	<.001
	N	420	420

As shown in Table 5, Pearson correlation analysis revealed significant positive associations between food neophobia and both sensory responsiveness and psychological factors. A moderate correlation was found between food neophobia and psychological factors ($r = .384$, $p < .001$), indicating that students with stronger psychological influences were more likely to avoid unfamiliar foods. A weaker but still significant correlation was observed between food neophobia and sensory responsiveness ($r = .239$, $p < .001$), suggesting that greater sensitivity to sensory responsiveness may also contribute to food avoidance. In conclusion, the strongest linear relationship in this data set is between Food Neophobia and Psychological Factor.

Conclusion

Discussion

The primary objective of this study was to analyse how sensory responsiveness and psychological factors relate to food neophobia among public university students in Penang. The findings revealed a moderate positive linear relationship between psychological factors and food neophobia, indicating that psychological factors significantly influence students' willingness to try new food trends. This result aligns with earlier studies, such as those by Muhammad et al. (2016) and Varela et al. (2024), which emphasized that attitudes, past experiences, and cultural beliefs significantly influence openness to innovative foods. In the context of Malaysia's diverse society, food decisions often extend beyond personal preference and reflect cultural or religious expectations. For example, uncertainty over halal status, unfamiliar ingredients, or deviation from traditional cooking methods may trigger cognitive resistance.

In contrast, sensory responsiveness showed a weak positive linear relationship with food neophobia, suggesting it has a weaker influence. While initial sensory rejection might prevent food sampling, it plays a minor role even though it is relevant in long-term food avoidance compared to psychological resistance, which is rooted in internalized beliefs and social influence. Therefore, addressing food neophobia among Malaysian university students should focus on reshaping psychological perceptions such as trust and familiarity by normalizing food innovation through peer modelling or culturally aligned messaging about modern food trends. These strategies could be more effective than focusing solely on improving sensory attributes like taste and texture.

Limitations and Recommendations

This study explored the relationship between sensory responsiveness and psychological factors in shaping food neophobia towards new food trends among public university students in Penang. The findings revealed that sensory responsiveness exhibited a weak positive correlation with food neophobia, whereas psychological factors demonstrated a moderate positive correlation. These results suggest that psychological elements such as attitudes, beliefs, and cultural norms play a more significant role in influencing students' willingness to try new food trends compared to sensory attributes like taste and texture.

By understanding these connections, future research can refine models for predicting food neophobia and tailor strategies to lessen its impact, particularly by addressing psychological triggers in younger populations, who will be consumers and trendsetters of the future. This study contributes significantly by filling the gap in understanding food neophobia within the Malaysian context. By identifying psychological barriers as the primary influence, this research provides valuable insights for policymakers, university administrators, and food marketers to tailor campaigns that promote acceptance of innovative foods among youth.

Future studies could build upon these findings by investigating additional variables, such as cultural and social influences, to further understand their impact on food neophobia. Additionally, exploring intervention methods that target psychological factors could help reduce resistance to new foods and foster more diverse dietary habits among university students.

This study also has some limitations. First, the study primarily relied on self-reported data, which may introduce biases such as social desirability or inaccurate recall. Moreover, the study's sample lacked diversity, primarily representing students from two universities. This may limit generalisability across Malaysia's wider student population. Another limitation was the focus on only two independent variables, leaving other potentially influential factors, such as peer pressure, religious practices, or marketing exposure, unexplored.

References

- Ajzen, I. (2012). The theory of planned behavior. In P. A. M. Lange, A. W. Kruglanski, & E. T. Higgins (Eds.), *Handbook of theories of social psychology* (Vol. 1, 438–459). London, United Kingdom: SAGE.
- Broad, G. M. (2020). Making meat, better: the metaphors of plant-based and cell-based meat innovation. *Environmental Communication*, 14(7), 919-932.
- Choe, J. Y., & Kim, S. S. (2024). Who are food-neophobic tourists? The influence of food neophobia on tourists' local food responses. *Journal of foodservice business research*, 1-29.
- Coulthard, H., Aldridge, V., & Fox, G. (2022). Food neophobia and the evaluation of novel foods in adults; the sensory, emotional, association (SEA) model of the decision to taste a novel food. *Appetite*, 168, 105764.
- Department of Statistics Malaysia. (2024). *The Population of Malaysia*. <https://open.dosm.gov.my/dashboard/population>
- Estay, K., Proserpio, C., Cattaneo, C., & Laureati, M. (2025). Children's food neophobia across different socioeconomic backgrounds in Chile: Exploring acceptance and willingness to try unfamiliar vegetables. *Food Quality and Preference*, 129, 105511.
- Field, A. (2024). *Discovering statistics using IBM SPSS statistics* (6th ed.). Sage publications limited.
- Giordano, S., Clodoveo, M. L., De Gennaro, B., & Corbo, F. (2018). Factors determining neophobia and neophilia with regard to new technologies applied to the food sector: A systematic review. *International Journal of Gastronomy and Food Science*, 11, 1-19.
- Hairon, S., Zahari, M. S. M., Akbarruddin, M. N. A., & Majid, H. (2017). Overview of Hipster food culture development in Malaysia. *Journal of Tourism, Hospitality & Culinary Arts*, 9(2), 481-492.
- Hassoun, A., Boukid, F., Pasqualone, A., Bryant, C. J., García, G. G., Parra-López, C., Jagtap, S., Trollman, H., Cropotova, J., & Barba, F. J. (2022). Emerging trends in the agri-food sector: Digitalisation and shift to plant-based diets. *Current Research in Food Science*, 5, 2261-2269.
- Hassoun, A., Cropotova, J., Trif, M., Rusu, A., Bobiş, O., Nayik, G., Jagdale, Y., Saeed, F., Afzaal, M., & Mostashari, P. (2022). Consumer acceptance of new food trends resulting from the fourth industrial revolution technologies: a narrative review of literature and future perspectives. *Frontiers in Nutrition*, 9: 972154.
- Hollweg, G., Trindade, P. C. O., Dos Santos, B. A., Padilha, M., Fracari, P. R., Rosa, S. C., Cichoski, A. J., & Campagnol, P. C. B. (2024). Development of plant-based burgers with partial replacement of texturized soy protein by agaricus bisporus: effects on physicochemical and sensory properties. *Foods*, 13(22), 3583.
- Karaağaç, Y., & Bellikci-Koyu, E. (2023). A narrative review on food neophobia throughout the lifespan: Relationships with dietary behaviours and interventions to reduce it. *British Journal of Nutrition*, 130(5), 793-826.
- Mercês, Z. d. C. d., Salvadori, N. M., Evangelista, S. M., Cochlar, T. B., Rios, A. d. O., & Oliveira, V. R. d. (2024). Hybrid and plant-based burgers: trends, challenges, and physicochemical and sensory qualities. *Foods*, 13(23), 3855.
- Muhammad, R., Abdullah, K. M., Zahari, M. S. M., & Sharif, M. S. M. (2015). Revealing the scenario of food neophobia among higher learning institution students from Klang Valley, Malaysia. *Procedia-Social and Behavioral Sciences*, 170, 292-299.

- Muhammad, R., Ibrahim, M. A., Ahmad, R., & Hanan, F. (2016). Psychological factors on food neophobia among the young culinarian in Malaysia: Novel food preferences. *Procedia-Social and Behavioral Sciences*, 222, 358-366.
- Nor, N. M. S. N. M., & Zahari, M. S. M. (2025). Menu hybridization development: Opportunity for food business performance. In *Innovative Trends Shaping Food Marketing and Consumption* (pp. 157-188). IGI Global Scientific Publishing.
- Perry Hinton, D., Hinton, P. R., McMurray, I., & Brownlow, C. (2004). *SPSS explained*. Routledge.
- Pliner, P., & Hobden, K. (1992). Development of a scale to measure the trait of food neophobia in humans. *Appetite*, 19(2), 105-120.
- Prescott, J., Chheang, S. L., & Jaeger, S. R. (2022). Food neophobia: Higher responsiveness to sensory properties but low engagement with foods generally. *Journal of Sensory Studies*, 37(5), e12771.
- Rabadán, A., & Bernabéu, R. (2021). A systematic review of studies using the Food Neophobia Scale: Conclusions from thirty years of studies. *Food Quality and Preference*, 93, 104241.
- Sahrin, S., Al Banna, M. H., Rifat, M., Tetteh, J. K., Ara, T., Hamiduzzaman, M., Spence, C., Kundu, S., Abid, M. T., & Hasan, M. M. (2023). Food neophobia and its association with sociodemographic factors and food preferences among Bangladeshi university students: Evidence from a cross-sectional study. *Heliyon*, 9(5).
- Siddiqui, S. A., Zannou, O., Karim, I., Kasmia, Awad, N. M., Gołaszewski, J., Heinz, V., & Smetana, S. (2022). Avoiding food neophobia and increasing consumer acceptance of new food trends—A decade of research. *Sustainability*, 14(16), 10391.
- Unal, N., Atabey, M. K., & Şanlıer, N. (2025). The relationship of neophobia and neophilia to the life events among young adults. *Archives of Pharmacy Practice*, 16(1-2025), 1-7.
- van den Heuvel, E., Newbury, A., & Appleton, K. M. (2019). The psychology of nutrition with advancing age: Focus on food neophobia. *Nutrients*, 11(1), 151.
- Varela, P., De Rosso, S., Moura, A. F., Galler, M., Philippe, K., Pickard, A., Ragelienė, T., Sick, J., Van Nee, R., & Almlı, V. L. (2024). Bringing down barriers to children's healthy eating: A critical review of opportunities, within a complex food system. *Nutrition Research Reviews*, 37(2), 331-351.